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A

POPULAR GUIDE

TO THE

Public Buildings and Museum

OF

AMHERST COLLEGE.

BY

C. S. BEARDSLEE AND G. A. PLIMPTON

CLASS OF 1876.



AMHERST, MASS.:

FOR SALE BY THE CURATOR AND AT THE BOOKSTORES.

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P R E F A C E.

This work was undertaken at the suggestion of others, in order to supply the long felt need of a VISITOR'S GUIDE. The book aims at nothing more than is implied in the title. It is intended to contain general information for visitors, and to represent more or less perfectly the attractions of the College to all others. That it may be thus a POPULAR GUIDE, the Cabinets have been presented, not by wearisome catalogues, but by comprehensive statements, with specific mention of single specimens, only so far as their particular interest or value would seem to demand. That it may be also reliable, the work has passed under the supervision of the Instructors, while some parts have been prepared entire by their personal efforts. For this, acknowledgments are especially due to Prof. Shepard, who kindly furnished all the matter upon his Collections; to Dr. Hitchcock, for assistance upon the Collections in the Appleton Cabinet; and to Prof. Mather, for gathering information upon the Art Gallery. The old Visitor's Guide, prepared by Prof. Charles H. Hitchcock, has been of great assistance, and Prof. Tyler's History of the College has afforded valuable information. If these pages shall furnish the required assistance to the daily visitor, and the work meet with approval from the College in general, our end is gained.

C. S. B. & G. A. P.

AMHERST, *June*, 1875.

CONTENTS.

AMHERST COLLEGE,	7
JOHNSON CHAPEL,	7
WORKS OF ART IN RECITATION ROOMS,	8
BOTANICAL MUSEUM,	12
APPLETON CABINET,	14
HITCHCOCK ICHNOLOGICAL CABINET,	14
GILBERT MUSEUM OF INDIAN RELICS,	17
ADAMS ZOOLOGICAL MUSEUM	19
WOODS CABINET AND LAWRENCE OBSERVA- TORY,	25
WOODS GEOLOGICAL COLLECTION,	25
SHEPARD'S COLLECTION IN THE WOODS CABINET,	28
LAWRENCE OBSERVATORY,	32
DICKINSON NINEVEH GALLERY,	32
WILLISTON HALL,	35
ART GALLERY,	35
" " STATUARY,	36
" " PHOTOGRAPHS,	56
WALKER HALL,	57
CABINET OF NATURAL PHILOSOPHY,	57
SHEPARD MINERAL COLLECTIONS,	60
COLLECTIONS ARRANGED IN THE MINERALOGICAL LECTURE ROOM,	76
BARRETT GYMNASIUM,	78
COLLEGE CHURCH,	79
COLLEGE HALL,	81
LIBRARY,	81

POPULAR GUIDE

TO THE

PUBLIC BUILDINGS AND MUSEUMS.



AMHERST COLLEGE.

AMHERST COLLEGE was founded in 1821, with a Faculty numbering three members and with forty-seven students. There are now more than three hundred students, requiring a Faculty of twenty members. The College grounds cover thirty-four acres. The Hill has been graded to its present form at an expense of about ten thousand dollars. Its thirteen buildings have been erected and improved at an aggregate cost of \$337,567. The sum total of the cash funds of the College, including buildings, grounds, collections, etc., as well as cash funds, is estimated in round numbers at over a million of dollars.

JOHNSON CHAPEL.

The central building, both in interest and position, upon College grounds, is the Old Chapel. It was dedicated on the 28th of February, 1827. In honor of

the generous donation to its erection by Adam Johnson, of Pelham, it was called the "Johnson Chapel," by vote of the Trustees. The tower which it supports is ninety-four feet in height, and, by unanimous testimony, affords an unsurpassed view of the "Garden of New England." The most prominent objects within this view are Mts. Holyoke and Tom, upon either side of the Connecticut to the southwest, with Hallock Grove in the foreground; Old Hadley and Northampton to the west, with Mt. Warner a little to the north; far to the northwest, the Green Mountains of Vermont; prominent in the north, Mts. Toby and Sugar Loaf, with Sunderland at its base; to the northeast and east, the more gradual slope of Pelham Hills; and to the south, Mt. Norwottuck, of the Holyoke range. Within the tower are the College clock and the Chapel bell. The building contains five recitation rooms on the lower floor, the large and the small Chapel on the second floor, and the College Herbarium and a recitation room on the third floor. The large Chapel is used for morning prayers and the various rhetorical exercises. The small Chapel is used for all religious meetings held in the evening.

WORKS OF ART IN RECITATION ROOMS.

NO. I.

BUSTS. The marble bust at the left of the Professor's chair is Socrates; that at the right, Demosthenes. The busts upon the south wall are Demosthenes, Plato, Socrates and Homer.

ENGRAVINGS. Upon the south wall is The School of Athens, or the Philosophers, executed by Morghen from Raphael's Fresco in the Vatican. Upon the north wall is Parnassus, or the Poets; engraver and locality, same as the last. The colored engravings upon the south wall, descriptive of the Ruins of Pompeii, are from Naples.

PHOTOGRAPHS. South wall: Jupiter of Phidias, and Roman Forum. East wall: Corfu (the Phæacia of Homer), Panorama of Athens, and Temple of Poseidon at Sunium. North wall: Group comprising the Nile River God, the Apollo Belvidere, and the Dying Gladiator; above this, another Group including Meleager, the Slayer of the Wild Boar, Minerva Pudica, and a photograph of a full length statue (in the Vatican) of Demosthenes; next Group consists of the oldest remains of Architecture in Greece, including the remains of the Temples in Corinth and at Nemea, and beneath them the Tomb of Agamemnon or Treasure House of Atreus, and the Gate of the Lions at old Mycenæ; the last Group contains the Bema of Demosthenes in Athens, Theatre of Dionysus, recently exhumed, the front of the stage in the same Theatre, and a general view of the Acropolis.

The bronze at the left of the Professor's chair is the SLEEPING ARIADNE. She is represented at the moment when, having fallen asleep, she is deserted by Theseus, whom she had helped to escape from the labyrinth after he had slain the Minotaur. This statue has long been regarded as one of the finest specimens of draped figures, as well as one of the

most dignified and graceful representations of sleep. Upon the cases may be seen a cork model of the Temple of Pæstum, in Southern Italy, and a terracotta model of the Farnese Bull. The original of the latter was the work of Apollonius and Tauriscus of Rhodes, and was placed in the Farnese palace in Rome in 1546. It represents the twin brothers, Amphion and Zethus, tying Dirce, their sister, to the wild bull, in punishment for her cruel treatment of their mother.

Within the cases may be seen a bronze model of the Pantheon at Rome, the Temple of Vesta at Rome, the War Chariot of the Ancients, and, upon the shelves, various specimens of classic interest, collected by the Professor as souvenirs of his travels.

The medallion on the east wall is William Cullen Bryant.

No. 2.

BUSTS. The three busts on the north wall are "the Larger Cicero," Virgil, and Cicero; the two upon the east wall are the Scipio Africanus, and Cicero.

PHOTOGRAPHS. South wall: Group containing Pyramid of Cestius, Tomb of Cæcilia Metella, Round Temple of Hercules and Interior of Colosseum, Columns in N. E. Gallery of Aya Sofia, and Arch of Septimius Severus. East wall: Pantheon with Obelisk in foreground, Aya Sofia, Colosseum and Mausoleum of Hadrian with Bridge over the Tiber. North wall: Pillars of Temple of Saturn on the Capitoline with view of Forum and of Arch of Titus and Colosse-

um in the background, Remains of an Aqueduct, Group containing Pillar of Trajan, Church of Nome Di Maria, Falls of Tivoli with Ruins of Mæcenæ's Villa (?) and Theatre of Marcellus, view of Aya Sofia with Obelisk in the foreground, Column of Phocas with Arch of Septimius Severus, and a Church and Pillars of Temple of Vespasian.

MEDALLIONS. Brutus, Cincinnatus, Scipio Africanus Major, Terence, Cato Uticensis, Cæsar, Pompey, Cicero, Mæcenæ, Virgil, Horace, and Seneca.

Upon the north wall is a model of the Sarcophagus of Scipio Barbatus, with a *fac-simile* of the inscription upon it.

NO. 4.

BRONZES. At the right of the Professor's chair stands Sophocles; at its left, Pudicitia; and upon the south wall, John of Bologna's Flying Mercury and Narcissus.

PHOTOGRAPHS. North wall: Group containing two views of the Erectheum at Athens, the Parthenon and the Temple of Victory, Apollo Belvidere, the Laocoon Group, and a Group containing Canova's Antinous and Piræus, Pudicitia and Minerva Perdicitia. West wall: Joan of Arc, Goethe, Goethe at Weimar, Schiller, and Schiller and Laura. South wall: Ulysses' Escape from Polyphemus, Temple of Theseus at Athens, two views of the Acropolis, Temple of Jupiter, and Battle of Salamis. East wall: Arch of Constantine, Modern Athens, Dionysiac Theatre, and Arch of Titus.

Over the Professor's chair is a copy in oil of Guido's Fresco of Aurora in Rome, and upon the south wall is a cork model of the Temple of Pæstum in Southern Italy.

No. 9.

BUSTS. The bust upon the pedestal at the right of the Professor's chair is Dante ; upon the left, Ariosto ; upon the south side are Tasso and Voltaire, and upon the north side, Petrarch.

PHOTOGRAPHS. South wall : Defense of Port St. Denis, Cathedral of Milan, and Attack of the Hotel de Ville. West wall : Paris Exposition Buildings in 1867, City of Florence, Scene in Paris during the Revolution of 1848, Rialto in Venice, Modern Rome, and Doge Palace. North wall : Street of Rohan, and Burial of Martyrs of Liberty. East wall : General View of Paris, St. Marks in Venice, and General View of Versailles. Upon the east wall is also an alabaster model of Giotto Tower in Florence.

THE BOTANICAL MUSEUM.

The room assigned to the Collections in the Botanical Department is No. 10, in the third story of the Chapel building.

Within the past two years, much has been done towards the re-arrangement of the material on hand, considerable additions have been made, and the work is still in progress.

The Herbarium occupies the case on the north side

of the room, at the visitor's right hand. The first half contains the North American Flora, especially that of the United States east of the Mississippi river, and includes already a fair representation of the Flowering Plants, Ferns, etc., of this region. The remainder of the case is devoted to the Flora of South America and Europe. Here are also interesting sets of Ferns from China and India. In the case on the east side of the room, will be found specimens of Woods and Fruits from various portions of the world.

The first two divisions contain a variety of the Fruits growing in our own and in tropical climes. Here are the cones of our Pines and Firs, and those of the Cedar of Lebanon; the fruit of the Cocconut in every stage of growth; the Brazil nut from South America, and the Cocoa-de-mer from the Indian Ocean. Here, too, is the Ivory Nut, the Chocolate Nut, and many species of Cotton in the boll, besides the smaller fruits and seeds in great variety.

The remaining three divisions of the case contain specimens of the Trees of California, including the famous Sequoia or Giant Red Wood. Here are also the Southern Pine and Carolina Prickly Ash, etc., of the Atlantic coast. Farther on is a fine section of a Tree Fern, and specimens of the Palm Tree, the Bamboo, *Lignumvitæ*, Fustic, and Mango of Jamaica, and others whose products are, in manifold ways, useful to man.

On the wall of the room is a still larger stem of the Bamboo, and a part of one of those immense beans that abound in tropical forests.

The room is furnished with tables and every convenience for botanical work.

APPLETON CABINET.

This building, situated upon the brow of the hill at the south end of Chapel Row, was erected in 1855. It was the first of the six buildings that have been added during the administration of President Stearns. Through the efforts of President Hitchcock, the expense of its erection was met by a grant of ten thousand dollars from the executors of the estate of Hon. Samuel Appleton of Boston ; hence, called "Appleton's Cabinet." The main room and the first two side rooms on the lower floor are occupied by the *Hitchcock Ichnological Cabinet*. The *Gilbert Museum of Indian Relics* occupies the third side room. The *Adams Zoological Museum* fills the single room of the second story. The wing at the east end of the building is the Zoological lecture and recitation room.

HITCHCOCK ICHNOLOGICAL CABINET.

This unique collection of tracks was made chiefly from the valley of the Connecticut by President Hitchcock. The science of Ichnology originated and was developed by him. The collection, therefore, bears his name, and is fitly adorned with his bust. It was begun in 1835, when the science of Ichnology was unknown, and is now the largest and most valuable collection in the world. It consists of 21,773

tracks of animals and one hundred and twenty different species. All the animals that made these tracks are comprehended under the general class Lithichnozoa, or stone-track animals. This class is subdivided into ten groups in the following order : Marsupialoids, Thick-toed Birds, Narrow-toed Birds, Ornithoid Lizards or Batrachians, Lizards, Batrachians, Chelonians or Tortoises, Fishes, Crustaceans including Myriapods and Insects, and Annelids or Worms.

A complete description of these specimens will be found in the Massachusetts Report of Ichnology by President Hitchcock in 1858 ; also in its supplement in 1865. A few of the most noted ones, however, deserve mention. As the visitor advances into the main room, on the right lie examples of mud cracked by drying, and called Nature's Hieroglyphics. They are from New Jersey and the section near Turner's Falls. Still further to the right are large slabs covered with rain drops. Suspended from the ceiling in the center of the room hangs a specimen of the foot and leg of the noted Palapteryx Ingens, found in the alluvial soil of New Zealand ; also the cast of an egg of the *Æpiornis Maximus*, dug from the soil of Madagascar. The original is in the Garden of Plants, Paris. Its dimensions are thirteen and one half inches in length, by thirty-three and one half inches in circumference, being equal to one hundred and forty-eight hen's eggs, or five thousand humming-bird's eggs.

The tracks of the Brontozoum Giganteum about the center of the room, upon table 15, are remarkable

for their large size, being eighteen inches in length, with an area of thirteen square inches, and a stride of thirty to sixty inches. They were probably made by a bird twelve feet high, and weighing from four hundred to eight hundred pounds. The slab was found in the southeast part of Northampton.

The *Gigantitherium Caudatum*, also near the center of the room, No. $\frac{9}{9}$ and $\frac{9}{10}$, rivals the former in size. The length of its foot is sixteen inches, and the area ten square inches. This specimen is also remarkable in that at certain intervals there are indentures made by a tail. The animal is supposed to have been a gigantic biped Batrachian. The rocks were found at Lily Pond, Turner's Falls, by Roswell Field.

The *Otozoum Moodii*, near the east end of the room, No. $\frac{5}{1}$ $\frac{3}{1}$ $\frac{4}{1}$, is also remarkable. The length of its hind foot is twenty inches, and the width from thirteen to fifteen inches. This animal was supposed to be a quadruped Batrachian, with unequal feet, and of about the weight of an ox.

The *Anomœpus Major*, at east end of the room, No. $\frac{1}{1}$ $\frac{1}{1}$, is a marsupial animal, and is remarkable for the striking resemblance of its hind foot to a bird's foot, and for a peculiar tail trace, which consists of a heart-shaped impression that is repeated at regular intervals, as seen in No. $\frac{20}{1}$.

Side case 41, at the east of the room, contains the fossil bones of the *Megadactylus Polyzelus*, found at the water shops of the National Armory at Springfield. These specimens are of special interest, since they are the only bony remains of an animal of about the size

of the hound, which existed at the same time with the animals that made these tracks. Tracks of this animal have never been found.

Side case 40 contains the tracks of living animals and the impression of a boy's foot, together with that of a bird, probably a crow. These were found in Hadley.

Side case 39 contains ripple marks on stone and rain drops on clay, mud and sandstone from the Connecticut valley, and lower Silurian sandstone on the shore of Lake Superior.

The first side room at the west end is filled with the latest and choicest collection, containing two hundred and three specimens from Gill, Mass. This collection is remarkable in that it contains many rare species of quadrupeds, birds and insects. Most of these are of unusual distinctness, and show a perfect impression of the papillæ. The insect tracks in the horizontal case are worthy of much attention from the student.

GILBERT MUSEUM OF INDIAN RELICS.

As one enters Appleton Cabinet he will find this collection in the third side room on the left. It contains nearly four thousand specimens of the stone implements of the North American Indian, and mainly those of the Connecticut valley. It is named from the late Hon. George H. Gilbert, of Ware, by whose liberal gifts of money it has been mostly secured.

The specimens exhibited here are arrow-heads (about two thousand, including the duplicates), gouges, hatchets, skin-dressing tools, hoes, chisels, pestles,

spear-heads, stone and earthen pots, pipes, maces, gorgets, sinkers, beads, photographs of Indian picture writings, skulls and skeletons, ornaments, tubular relics, with some articles belonging to Indians now living. Here are also specimens of the stone period of Europe.

In the vertical case at the left of the entrance are to be seen gorgets, beads, pots, maces, sinkers, and a few other articles.

On the west wall is a photograph of the famous Dighton Rock, and also the skeleton of an Indian female.

In the horizontal cases on the north side of the room are to be seen hatchets from our Western Indians, the famous "Discoidal Stones" of the West, and the Oval Stones (by some considered as hammers) of our valley, most nearly resembling them.

In the case upon the middle of the north side are to be seen two "lots" of arrows—one from Bristol, Ct., numbering seventy-three, and another from Deerfield, Mass., numbering seventy. These seem to have been either the products of the manufacturer or the armory of some Indian tribes. Several tubular relics are to be seen in this case. Here are also the pipes and skin-dressing tools.

In the next case to the right, on the back rows, are the hoes, and in the front part of the case the hatchets.

The case at the east end is almost entirely filled with gouges and chisels.

Upon the south wall, behind the door, arrow-

heads are arranged so as to show—the upper ones, the predominant forms of these implements, and the lower ones, the material of which they are constructed, as well as a great variety of their forms. Here is also seen the pipe of the famous Sioux savage, “Cut Nose.”

The horizontal case, directly behind the door, contains the pestles and the stone implements from Europe.

One should not fail to notice the largest and most complete soap-stone pot, No. 2,289, which stands between the cases upon the north side of the room ; also the stone mortar, No. 685, made of sandstone, probably used for pounding corn into meal, and found in Greenfield.

This collection was mainly secured to the College by gifts of money, as indicated on the marble slabs upon the east and the west walls of the room.

Most of the specimens gained otherwise were given by people whose names are indicated on a manuscript paper tablet below the western slab.

ADAMS ZOOLOGICAL MUSEUM.

The first donations to this collection were a legacy of Sylvester Hovey, formerly a Professor in the College ; gifts of specimens from students, alumni, and other friends of the College ; and the collection that belonged to Professor C. B. Adams. Additions are constantly being made by contributions from all parts of the world. The number of specimens at present

is not less than 100,000. The horizontal cases contain only Insects and Shells. The upright cases contain specimens of all the branches of the animal kingdom, arranged in scientific order, where size of specimen, space, etc., will permit.

Commencing in the northeast corner of the room with the upright cases, No. 1 contains the Protozoa, or first forms of life, including three classes: the Sponges, the Rhizopods, and the Infusoria, including most of the animalcules. Of especial interest in this case are the Siliceous Sponges, known as the Spun Glass Coral, or *Hyalonema Mirabilis*, and Venus' Flower-basket, or *Euplectilla Speciosa* from East India and Japan.

Passing to the west, Cases Nos. 2 and 3 are devoted to the sea-fans and stony Corals generally. The sea-fans are obtained largely from the West Indies and the Florida Keys.

Case 4 is occupied by the Radiates, and includes fresh-water polyps, jelly-fishes, crinoids, sea-urchins, etc. Both the star-fishes and sea-urchins were named by Professor Verrill, and a number of specimens have been obtained from him in exchange.

Case 5 is filled with Molluscs, containing specimens of the animals themselves in connection with their shells, and specimens too large to be admitted into the horizontal cases.

Case 6 is devoted to Articulata. Upon the lower shelves may be seen specimens of the nests of the hornet, yellow wasp, and Ceylonese spider. Upon the upper shelves are numerous specimens of tape-

worms, hair-snakes, centipedes, millipedes, scorpions, crabs, etc.

Cases 7 and 8 are devoted to a general collection of Fishes. Here are specimens of Myzontes, Fishes proper, Ganoids and Selachians. Upon the lower shelf of Case 7 may be seen a large Sturgeon, a number of dried South Carolina and West India fishes, etc. Upon the second shelf is a large number of dried and stuffed specimens of American fishes. The famous Gar Pike, on the third shelf, is from Lake Pontchartrain, near New Orleans. Upon the same shelf is a large number of Jamaica fishes, eels from the Indian Ocean, etc. The jars upon the upper shelf contain Jamaica fishes chiefly.

On the lower shelf of Case 8 is a large number of specimens of the sting ray, a small shark, etc. Among the specimens upon the second shelf are a shark and a ray-fish from the Indian Ocean. Upon the next shelf may be found the jaw of the true man-eating shark; here are also several specimens from Lake Champlain and the Connecticut valley.

Cases 9 and 10 are devoted to Amphibia and Reptiles. The boa-constrictors, upon the bottom shelf of Case 9, are from South Africa. Upon the third shelf of this case is a stuffed specimen of the South Carolina rattlesnake, with its skeleton by its side. The large collection of snakes upon the top shelf have been gathered from all parts of the globe.

The second shelf of Case 10 is well furnished with medium-sized snapping turtles and terrapins of various kinds; here are also a skull and part of the skel-

ton of the large green edible turtle. Upon the upper shelf are numerous specimens of lizards, including chameleons from all parts of the world.

Cases 11 and 12, together with the large Case at the west end of the room, and 14 and 15 upon the south wall, are devoted to the general class of Mammals or Quadrupeds. Among the specimens collected may be found typical heads and teeth of all the larger groups of mammals. Upon the second and third shelves of Case 2, and the upper shelf of Case 12, are models of the heads of men distinguished by varied qualities, by the side of the heads of various wild and domestic animals. These are designed to illustrate Comparative Zoology.

Upon the first three shelves of Case 12 is a collection of bones designed to illustrate Comparative Osteology. Upon the upper shelf are enlarged models of parts of the human body, which, with the manikin in the large Case, are used for illustration in the study of Anatomy.

Case 13, in the west end of the room, is devoted mainly to stuffed mammals and their skeletons. Most of the specimens, being properly labeled, need no especial enumeration. The skin and skeleton of a gorilla were presented to the College by Rev. William Walker, missionary to Western Africa. It is the most valuable single specimen in the Cabinet. The beautiful tiger-cat, lying on its side near the center of the case, is from Mexico. The Canada lynx, near the panther, is from Maine. The wild-cat, near by, was killed in Northampton. The fisher or black-cat, near the cen-

ter of the upper shelf, is from Ashland, Maine. The white fox is a present from Rev. C. C. Carpenter, missionary to Labrador. The stuffed skin of a walrus, upon the top of this case, was bought in New Bedford, and was brought there by a whale ship from the Northern Ocean.

Cases 14 and 15 contain the remaining specimens of the mammals, properly labeled. Of the series of squirrels, the gray and black, with their varieties, are from Niagara Falls, and the large flying-squirrel from Hudson's Bay.

The remaining nine upright Cases upon the south side are devoted to Birds, and contain representatives of all the large groups of existing birds. In the collection of birds' eggs, numbering six hundred specimens, may be found representatives of about two hundred and fifty species.

Case 25, in the east end of the room, near the stairs, is devoted to Ruminants, or cud-chewing animals. The largest stuffed specimen—the American Moose—is from Connecticut Lake, N. H. The largest skeleton is that of a moose, from Ashland, Maine. The deer, which is most common in this country, is from New York. The skull of an ox and the musk deer are from Java.

The large and varied collections of horns which are attached to the cases about the room, were mainly presented by Rev. Josiah Tyler, a missionary to South Africa. A large number of valuable specimens have already been presented to the Cabinet by this Alumnus.

The northern row of horizontal Cases contain

Professor C. B. Adams' collection of Insects, which were mostly arranged by himself. Sufficient guide will be found upon the labels in the cases.

The remaining horizontal Cases are filled with a collection of molluscs or shells, also presented by Professor Adams. There are about 8,000 species, but they are so systematically arranged that the visitor needs no other guide than can be found within the cases. The highest order of the molluscs may be found in the southwest corner of the room ; and the descending series will be traced in succession with the direction of the cases, until the lowest order is reached in the row next to the insects. Within this collection may be found many rare and valuable specimens. As will be seen by the labels, a great number were found in the West Indies, particularly Jamaica, by Professor Adams himself. Of this collection Professor Agassiz says : " I do not know in the whole country a conchological collection of equal value ;" and Dr. Gould : " As a scientific collection it is not equalled in some respects by any other collection in the world."

Within the iron railing, near the stairway, are a number of interesting specimens. Most prominent is a plaster cast of the skeleton of the American Megatherium. It was presented by Joshua Bates, Esq., of London. The original skeleton was found in Buenos Ayres, South America, and is now preserved in the Museum of the Royal College of Surgeons in London. Upon the floor are the cranium of a hunch-back whale, the lower jaw with the teeth of a young

sperm whale, and the ribs, vertebræ and jaw bones of a whale.

WOODS CABINET AND LAWRENCE OBSERVATORY.

The octagonal building upon the western knoll contains the Geological Collection. It has connected with it, upon the northwest, the Sweetser Lecture Room, upon the west the Dickinson Nineveh Gallery, and upon the east the Lawrence Observatory. The site is that of the old village church, which stood here from 1782 to 1828. The central building, together with the Observatory, was dedicated June 28, 1848. The Nineveh Gallery and Sweetser Lecture Room were added later. The main building is called the Woods Cabinet, in honor of the services of Hon. J. B. Woods, of Enfield, who was very active and successful in procuring funds for its erection. The first story of this main building is filled with the

WOODS GEOLOGICAL COLLECTION.

Within the vestibule of the building are several interesting specimens. The large Gneiss, lying on the floor at the right of the door, is from Shelburne Falls, Mass.; it is remarkable for its plicated strata. Upon the sides of the walls are specimens of the verde-antique marble, from Roxbury, Vt.

In the main room, the side cases under the gallery contain the general Geological collection of America. Beginning at the right of the entrance, and following

the walls, one will find this collection arranged in succession, from the highest to the lowest formation.

Case 1 contains the fossil bones belonging to the age of man. Casts of the bones of the *Schistopleurum*, Mastodon and Whale are to be seen in the upper part of the case. The lower part is devoted to shells.

Case 2 is filled with specimens illustrating the post-tertiary formation.

In Case 3 is a unique collection of concretions and clay stones found in New England.

In Case 4 are fine specimens of drift marking or ice marking.

Case 5 contains specimens illustrating the tertiary formation. They consist mostly of shells.

The collection in Case 6 consists of petrified wood and agates from the West Indies.

In Case 7 are cretaceous specimens and fossils.

Case 8 contains the famous collection of fossil fishes of the *Catopterus*.

Case 9 contains specimens of the Trassic formation, consisting mostly of fossil plants found at Easthampton. This locality is remarkable for these specimens.

Cases 11, 12, 13 and 14 are taken up with specimens of the Carboniferous formation. The most prominent of these are the coal plants.

Case 15 is devoted to the Devonian formation. It consists mainly of fossils of the old red formation, gathered largely in New York.

Cases 16 and 17 also illustrate the Devonian formation.

Cases 19, 20 and 21 contain specimens of the Silu-

rian formation. In case 20 may be seen the fossil *Orthoceras*.

Case 22 contains specimens illustrating the Laurentian formation.

THE FOREIGN GEOLOGICAL COLLECTION will be found in the upright and horizontal Cases in the center of the room, which contain specimens well illustrating the rock formation and fossils of other countries.

The immense cast, near the center of the room, is the head of a *Deinotherium*, the largest quadruped that ever lived. It was like an elephant in general structure, but is supposed to have been aquatic. A cast of its thigh bone lies near by.

Suspended from the ceiling is a cast of the head of a young *Mastodon*, larger than an elephant. Two wooden models of the tusks of the famous Newburg *Mastodon* are attached to the pillars, and upon a table near by is a part of one of the original tusks.

Between the pillars is a cast of the *Schistopleurum* of South America. Casts of the bones of this animal may be seen in Case 1.

Upon the northwest end of the western upright case hangs a slab, into which are sunk one hundred and sixty-two specimens of polished marbles. This slab was obtained in Rome by Professor Hovey.

The Gallery upon the north side contains the *Massachusetts Geological Collection*, made by President Hitchcock during his geological survey of the state (1830-1840), and is intended to fully illustrate all the

rock formation of the state, as well as the fossils. It numbers 3,200 specimens.

In the South Gallery is placed the *Connecticut Geological Collection*, made by Professor C. U. Shepard, during his geological survey of the state. It numbers eight hundred specimens.

Upon the railing of the Gallery are casts and valuable bones of extinct animals. Over the entrance may be seen a paddle of the Pliosaurus, six feet in length, found at Dorsetshire, England. On the west side may be seen a cast of the head of the Mososaurus, the largest reptile that ever lived. On the northwest side may be seen the Zeuglodon, found in the southern part of the United States.

THE SHEPARD COLLECTIONS IN THE WOODS CABINET.

These include two large fossil slabs in the lower hall, and the contents of the entire second story. The glass case at the top of the stairs in the corridor contains numerous large and rare fossil specimens, the mahogany cabinet a choice conchological collection, and the glazed cases (on the north side) a series of madrepores, corallines, etc. On entering the room, the first three cases to the left (consisting of rather more than one sixth of the space on this floor) are devoted to the Meteorites—a collection that has been in formation since 1830, and is now the fourth in magnitude and value, in existence. The three that outrank it, are national museums; viz., those of London, Vienna and Paris. It embraces specimens from

two hundred and forty-two distinct localities, of which one hundred and forty-eight are meteoric stones, and ninety-four, meteoric irons. The oldest known fall among them is that of Ensisheim, Alsace, France, dated November 7, 1492; the most recent, that of Iowa Co., Iowa, February 12, 1875. The total weight of the collection is about twelve hundred pounds. The heaviest iron, that of *Æriotopos*, Colorado, weighing four hundred and thirty-eight pounds, the smallest, that of Otsego, N. Y., half an ounce. The largest entire stone is that of New Concord, Ohio, weighing fifty-two pounds (May 1, 1860), the smallest, that from Hessle, near Upsala, Sweden, less than fifty grains (January 1, 1869). The whole number of meteoric specimens exceeds five hundred, of which all the smaller ones are preserved in the iron safe, near by. The collection embraces, besides, numerous models of meteorites, and an extensive series of doubtful meteorites; also, as supplementary to the subject, above one hundred "pseudo meteorites," or serpentine-nodules, from Regla, near Havana, Cuba, that strikingly resemble meteoric stones in shape and composition,—metallic iron and nickel being alone wanting to establish their full identity in chemical character.

Many of the iron-masses have been sawn, polished and etched with dilute acids, whereby their internal, crystalline structure has been developed.

To the collection of Meteorites succeeds that of Geology. This occupies, in a systematically arranged series, the twelve double cases of the entire floor. It

commences with the non-fossiliferous rocks, and proceeds through the Cambrian, Silurian (here rich in English specimens), and Devonian to the Carboniferous, where the visitor will meet an extended illustration of this formation by specimens both American and European, among which, those of the Saurian fishes from near Edinburg, are the most remarkable. Other examples of these rare fossils may be seen in the case at the head of the stairs, in the corridor, and in the gallery of the Woods Cabinet. Prof. Agassiz pronounced it one of the best collections of these gigantic fishes in existence. Next follows a few Permian fossils, when we reach a wide illustration of the Triassic in the footprints of the Connecticut valley, effected with considerable labor and expense, through a long course of years, with rare opportunities of collection. The specimen of the *Tridentifer ingens* is the most perfect track of this immense animal yet discovered; while nearly all the impressions are remarkable for clearness of outline, freshness of surface, and the perfectly natural condition in which the specimens are left. The same may be said of the *Ichthyolites* from this formation. The Jurassic and Liassic series is also good; but is far surpassed by the Cretaceous, here rich in the fossils of the Upper Chalk of England and France. The great feature of the geological collection, however, is that of the Tertiary and Quaternary Formations. About one half of the contents of the room belong to these formations,—growing out of rare advantages enjoyed by the collector during his long residence in South

Carolina. The collection consists of many thousand specimens, most of which can scarcely be excelled for their perfect preservation. They include an immense number of fish teeth, some of which are gigantic in size, besides the bones and teeth of land animals, as the horse, the tapir, the deer, the elephant, the megatherium, and the mastodon. Of the latter, are here preserved large portions of two entire skeletons, both disinterred by the Professor Shepards, senior and junior, one of the skeletons having been found on the beach of St. Helena island, South Carolina, below half-tide water and firmly imbedded in the Lois formation; the other among the phosphatic nodules, nine miles northeast of Charleston, in the same state.* Very curious reptilian coprolites, from a ferruginous clay of the quarternary, occurring near Georgetown, South Carolina, will be found arranged in the same case with the St. Helena mastodon.

The gallery of this room contains an equal number of cases with the lower floor; and holds an extensive series of rocks and fossils, arranged geographically, in which most of the States are represented, as well as England, France and Germany.

The whole number of geological specimens must exceed 12,000; and if properly mounted for exhibition and study, would require three times the space they now occupy.

*For the possession of the St. Helena specimen, this collection is indebted to the liberality of Capt. Charles S. Boutelle, of the Coast Survey; and for the other, to Mr. William L. Bradley, of Boston.

LAWRENCE OBSERVATORY.

The Observatory, situated upon the east side of Woods Cabinet, bears the name of Hon. Abbott Lawrence, of Boston, who contributed one thousand dollars to the College in the darkest days of her history. It consists of a transit room and a tower with a revolving dome. Within this dome is a refracting telescope, the gift of Hon. Rufus Bullock, of Boston. It has a focal length of nine feet, and an aperture of seventeen and one-fourth inches. In the transit room are a transit circle, a siderial clock, a chronograph, and other apparatus necessary for practical observations.

DICKINSON NINEVEH GALLERY.

The Nineveh Gallery, adjoining Woods Cabinet on the west, was built by Lieut. Enos Dickinson, Esq., of Amherst, in 1857. Upon the walls may be seen six sculptured slabs, from the palace of Sardanapalus, together with several fresco paintings taken from sculptures abounding in the ruins of Assyria. These slabs, together with the seals, cylinders and bricks from Nineveh and Babylon, and coins of gold, silver and copper, were procured by Dr. Henry Lobdell, missionary to Assyria. The cost of procuring the whole was about six hundred dollars. The money value of the collection is as many thousands.

SLABS. The sculptures are upon slabs of gypseous alabaster. The inscriptions, which are precisely identical, are in the best and earliest style of the Assyrian art and belong to a period as early as 930 B. C. They

are written in the cuneiform characters which was the monumental writing of the Assyrians, while an entirely different form was used for private documents.

No. 1 represents an eagle-headed divinity, probably a type of the Supreme Deity. He may be identified with the Nisroch of Scripture.

No. 2 is a winged figure, probably a demi-god.

No. 3 differs from No. 2 only in the ornament of the helmet and the embroidery of the robe.

No. 4 is Sardanapalus, who built the palace and whose deeds are recorded in the inscription. He is represented as giving thanks to the gods after the war.

No. 5 is another winged priest or divinity.

No. 6 is an eagle-headed divinity, differing from No. 1 only in a few points of dress.

The inscription upon these slabs, which is entire only upon Nos. 2 and 3, has been translated by Rev. William H. Ward of the class of '56, and also by Rev. Selah Merrill, of Andover. The following is selected from the translation by Mr. Ward :

“ This is the palace of Assurnazibal, servant of the Supreme God Assur, son of Tiglath-Ninib,
 son of Bel-ni-rari; strong warrior who marched here and there in the service of Assur his lord; who had no equal among the princes of the four regions; brave commander, fearing no opponents; strong, unrivalled leader; king, bringing under subjection the rebels against him; who governs many legions of men; mighty champion, trampling on the back of his stout enemies; crushing all his foes, the masses of the rebels; a king who marched here and there in the service of the great gods his lords, and

whose hands subdued all the provinces and who gained the mastery over all the forests; who subjected all their power, taking hostages, imposing laws over all those provinces."

The latter part of the inscription is taken up with an account of the building of the palace.

The FREScoes represent the following figures in order: a winged human-headed lion, Sennacherib at the siege of Lachish, a fish-god, a Sphynx, an Assyrian spearman, an Assyrian archer, an Assyrian slinger, a eunuch, a symbol of Deity, a fish-god, a winged horse, a gryphon, an Indian monkey, and a wild boar from India.

The gems, seals and cylinders from Nineveh and Babylon, together with one thousand coins, Greek, Roman, Cufic, Persian, Russian, Hindoo, etc., and eighty-four copper medals, struck by the Government of the United States, are in private custody for safe keeping. The seals and cylinders have been recently translated by Mr. R. S. Williams, of Utica, N. Y., and Judge Alexander Johnson of the same place. The following are specimens of their results:

1. Sassinnian Ensign, surmounted by a wreath.
4. Human-headed winged bull, or Pegasus, Nineveh, (or Sassinnian).
11. Egypto-Grecian warrior holding lotus flower.
12. Indian parabet, a bird sacred to Bacchus—Parthian.

WILLISTON HALL.

The brick building at the north end of Chapel Row is Williston Hall. It stands upon the site of old North College, which was burned in 1857. The expense of erecting this Hall—fifteen thousand dollars—was met by a voluntary offering from Hon. Samuel Williston, of Easthampton. It was completed in 1857, and dedicated on the 19th of May, 1858. The lower floor is devoted entirely to the department of Chemistry, the west end being a lecture room, and the east end a laboratory. Upon the second floor are the halls of Alexandria and Athenæ, the two literary societies of the College; the former occupies the western half, and the latter the eastern half. Each society has, in its rooms, a Library of about six hundred volumes. In the third story is the

ART GALLERY.

This room, which occupies the whole of the upper floor, is gained by the main entrance into the tower, upon the north side of the building. The Gallery is eighty feet in length by forty in breadth, and twenty in height. The ceiling was raised two feet by paneling, in order to admit the Ghiberti Doors, in the east end. The Elgin marble casts, from the frieze of the Parthenon at Athens, descriptive of the Pan-athenaic festivals, form the entire cornice of the hall. The walls were frescoed by Mr. McPherson, of Boston, and every design in connection with this work is pure Greek. The lower half of the walls is painted a

Pompeian red, as a background for the statuary. The contrivance of Alcoves is to increase the surface for pictures and the corners for statuary.

STATUARY.

No. 1.

Cast of a marble bust of *ÆSCHYLUS*, the celebrated tragic poet. He lived from 525 to 456 B. C. The original is in the Royal Museum at Berlin.

No. 2.

DANCING GIRL with a wreath ; from the British Museum.

No. 3.

EVENING, by Michael Angelo. This and No. 5, representing Morning, were made for the tomb of Lorenzo di Medicis, in the famous Medici Chapel in Florence.

No. 4.

HEBE, represented as cupbearer to the gods ; the work of Thorwaldsen. She was called by the Romans *Juventas*, goddess of youth. Ganymede was her successor. The original belongs to Mr. A. Baring, of London, and there is a repetition of it, by the artist, in the museum at Copenhagen.

No. 5.

MORNING ; by Michael Angelo. (See No. 3.)

No. 6.

PANEL from the Alhambra palace, Spain.

No. 7.

SHIELD OF ACHILLES, the principal hero of the Trojan War ; executed by Flaxman. The figures upon the shield were devised by Vulcan, at the request of Thetis, the mother of Achilles.

No. 8.

VASE ; from Copenhagen. The figures upon it are copied from Thorwaldsen's bas-reliefs illustrative of Homer's works. This one represents Priam pleading with Achilles for the body of Hector.

No. 9.

APOLLO AND THE MUSES ; by Thorwaldsen. This represents the Muses dancing upon Mt. Helicon, while Apollo plays upon the lyre. The original was purchased by Baron Von Schubart, for his Villa near Leghorn. A marble copy by the artist is in the museum at Copenhagen.

No. 10.

DANCING FAUN. The original is one of the famous antiques in the Tribune of the Uffizzi gallery in Florence. The head and both arms are modern, and were restorations of Michael Angelo.

No. 11.

THE FARNESE HERCULES. This Hercules derives its title from its connection with the Farnese family. It was found in the baths of Caracalla. An inscription on the rock declares it to be the work of Glycon, the Athenian. It was one of the first favorites of

antiquity, as shown by its frequent repetitions in bronze and marble, on gems and coins.

“The anatomical detail of the body and limbs is more distinct than in any other work of antiquity.”

Flaxman.

No. 12.

Base of a CANDELABRUM; from the British Museum.

No. 13.

JUNO, antique; from the Ludovisi Villa, Rome. Probably a copy of the work of Alcamenes, a pupil of Phidias.

No. 14.

Base of a CANDELABRUM; from the British Museum.

No. 15.

MARCUS AURELIUS; a Roman Emperor, who lived A. D. 161–180. Original in the British Museum.

No. 16.

APOLLO BELVIDERE. This statue was found towards the end of the 15th century, near Porto d'Anzo, and may have constituted one of the ornaments of the imperial villas at Antium. It was purchased by Pope Julian II., and by him placed in the Belvidere gardens of the Vatican at Rome, whence its name. The sculptor here represents the god at the moment when he has rid the earth of the monster Python; hence Pythius, the epithet of the god, and the Pythian games commemorative of the victory. In his left hand he holds a fragment of the bow, having just dispatched the fatal arrow.

Visconti says it is the work of Calamis, set up in Athens in honor of the god, for staying a plague which raged there.

Other critics suppose it represents the god as having just discharged his arrow in the conflict that proved fatal to the children of Niobe.

It is esteemed one of the noblest representations of the human form.

No. 17.

Ideal bust of BRUTUS, by Michael Angelo ; from Florence.

No. 18.

LUDOVISI MARS ; so called from its location in the Ludovisi Palace, at Rome. This celebrated statue was once assigned to Scopas ; but it is now considered to be a copy of a bronze by Lysippus, or at least of his school. The cupid at his feet indicates that he is resting after a conflict, and is under the influence of Venus.

No. 19.

Bust of JULIUS CÆSAR, the noted Roman warrior, jurist, and author.

No. 20.

Bust of PERICLES, the Athenian statesman and orator, who flourished 444 B. C. The original is in the Royal Museum at Berlin.

No. 21.

Bust of the YOUNG AUGUSTUS, the first Roman Emperor. He lived from 68 B. C. to 14 A. D., and

reigned forty-four years. The original is in the Museum of the Vatican at Rome.

No. 22.

CHILD OF NIOBE; from the famous Niobe Group at Florence. (See No. 52.)

No. 23.

DYING GLADIATOR; from the Capitoline Museum, Rome. This statue was found on the sea shore at Antium, and is the work of Agasias, an Ephesian. There is no probability that it represents a gladiator; it is more likely a portrait statue of some heroic victor dying upon his shield.

“The skill with which the artist has expressed the moment when the wounded man is about to expire, can never be too much admired. Raised on his right arm, the only member retaining the least power, a general relaxation is perceptible in all the muscles of the body, particularly those of the face, which combine the expression of agony with exhaustion.”

Flaxman.

No. 24.

BOY AT PRAYER. This is imagined to be the work of Bedas of Byzantium. It is said to have been given to Prince Eugene by Pope Clement XI.; it was afterwards in possession of Prince Wencelsaus of Lichtenstein, and was subsequently purchased by Frederic II., King of Prussia, who placed it in the Royal Cabinet in Berlin. The original is bronze, and was found in the Tiber.

No. 25.

BOY EXTRACTING A THORN; from the Uffizzi at Florence. Though the form is slight, it is supposed to represent a successful contestant in the races of the stadium, trying to remove a thorn with which he was wounded during the race.

No. 26.

SHEPHERD BOY, by Thorwaldsen. This statue was suggested to the artist by a charming attitude which the model for his Ganymede with the Eagle unconsciously assumed. A plaster model and a copy in marble is in his museum. The original is now in Wilcdruff, near Dresden. The statue has been repeated in marble a great number of times. The King of Prussia had it cast in Bronze, and another bronze copy was cast in Paris, in 1828. The dog was modelled from Thorwaldsen's favorite "Teverino."

No. 27.

MINERVA PUDICA. Pallas or Minerva was the goddess of wisdom and the protecting deity of Athens. This statue, one of the finest of this goddess, is in the Vatican at Rome.

No. 28.

DANCING GIRL; a Bacchante. This is the work of Thorwaldsen, while in Rome, in 1817. The original is in Esterhazy Gallery, Vienna. A plaster model is in the artist's museum.

No. 29.

DIANA AND THE STAG; from Paris. The divinity

is here represented as a huntress. The stag of C enone, stands at her side, which had been captured by Hercules. The representation is at the moment when she meets Hercules at the crossing of the river and rescues the prize. The statue has been in France since the reign of Henry IV.

No. 30.

JASON, leader of the Argonauts on their expedition in search of the "golden fleece." He is represented as sent for in such haste by his uncle that he has only time to put on one sandal. The statue was purchased by Louis XIV., and placed in the gallery at Versailles, and afterwards in the Louvre. Previously it was in the Villa Negroni. For a long time it was supposed to be a statue of Cincinnatus.

No. 31.

VULCAN, the Roman god of fire ; by Thorwaldsen. This is a model of a colossal statue in marble, made by the artist while in Rome, 1838. The sword and helmet of Mars, and the arrows and quiver of Cupid, forged by Vulcan, lie at his feet.

No. 32.

ATHLETE, with strigil ; from the Vatican Museum, Rome. Athletes were accustomed, after their exercises, to scrape off the dust and oil with a strigil. This statue is a copy of the original, by Lysippus, and was found in 1846, at Trastevere, near Rome.

No. 33.

GHIBERTI GATES ; so called from the artist,

Lorenzo Ghiberti, who worked upon them for twenty years, 1448-1468. The originals are in bronze and form one of the central door-ways to the Baptistry in Florence. The door-posts and lintels deserve especial notice for their beauty and perfection of finish. This work was greatly admired by Michael Angelo, and it is so perfectly executed that he copied many of the heads in the famous Sistine Chapel frescoes.

The panels represent events in the Old Testament-history from the creation down to the building of the temple of Solomon.

The uppermost panel on the left door contains "The Creation of Adam ;" "The Creation of Eve ;" "Eating of the Forbidden Fruit ;" and "The Expulsion from Paradise." The corresponding panel on the right door contains "The Offering of Sacrifice by Cain and Abel ;" "The Killing of Abel ;" and "Man's Labor and Cain's Expostulation with the Creator."

The second left hand panel contains "The Ark after the Subsiding of the Flood," and "Noah offering Sacrifice." The panel to the right contains "The Sacrifice of Isaac," with the servants resting at the foot of the mount, and the appearance of the three angels to Abraham.

The central panel on the left door contains the story of Jacob and Esau. The corresponding one on the right contains four subjects from the story of Joseph : the treachery of his brethren, their meeting in Egypt, the discovery of the cup in the sack, etc.

The panel on the left door, below these, represents

Moses receiving the law, and the multitude at the foot of the mountain. The corresponding panel to the right represents Joshua overcoming Jéricho, and the division of the tribes.

The two lower panels contain, respectively, David slaying Goliath, and the Meeting of the Queen of Sheba with Solomon.

Of the two bald heads projecting near the center of the gates, the one at the right is Ghiberti himself.

No. 34.

DYING YOUTH ; by Michael Angelo. It was originally intended for the mausoleum of Pope Julius II., but is now in the museum of the Louvre, at Paris. It is one of Michael Angelo's last works.

No. 35.

VENUS OF MILO. This statue was discovered in 1820, by the French consul in the island of Melos, and is now in the museum of the Louvre, Paris. It is regarded by many as the finest statue of antiquity.

No. 36.

CLYTIE ; from the British Museum. In ancient mythology she is represented as a nymph who pined away because her love was not reciprocated by Apollo, the sun god. By constantly gazing at the object of her love, she was at length turned into a sunflower, a favorite emblem of constancy.

No. 37.

Statue of a Greek CANEPHORA ; antique ; from the British Museum. It was customary at Athens for vir-

gins to bear materials for a sacrifice to the altar in a basket on their heads. Like the Caryatids, the Canephora served as architectural supports. The original of this statue was found in the Appian Way, amid the ruins of the Villa Strozzi.

No. 38.

Bust of the poet HOMER ; from the British Museum.

No. 39.

NYMPH PLAYING THE GAME OF TALI ; from the British Museum. The original was discovered in 1766, at the Villa Verospi, near the Salerian gate of Rome.

No. 40.

Bust of HERODOTUS, a Greek historian, who flourished about 500 B. C. The original is in the Royal Museum at Berlin.

No. 41.

THUCYDIDES, a noted Greek historian, who flourished between 470 and 400 B. C. The original is in the Royal Museum at Berlin.

No. 42.

PILASTER, from the Madeleine at Paris.

No. 43.

FLYING MERCURY, the messenger of the gods. A small bronze model of the same may be seen in Professor Mather's recitation room. It is the work of John of Bologna. The original may be found in Florence. The rod in his left hand, intertwined with serpents, is the caduceus which he received from

Apollo in return for his lyre. He is represented as being blown from the mouth of Æolus, the god of the winds.

No. 44.

BACCHUS ; antique. The same as the Greek Dionysus, the youthful, beautiful, but effeminate, god of wine. The original is in the British Museum.

No. 45.

PSYCHE, from the National Museum, Naples. This sadly mutilated, but exquisite fragment, was found at Capua, in Italy. Psyche was a nymph whom Cupid loved and carried into a secure retreat. The name signifies *soul*, and she is usually represented with the wings of a butterfly.

No. 46.

AJAX, a Grecian warrior in the siege of Troy, second only to Achilles. He was gigantic in size, and of great courage, but dull of intellect. This cast is from the head of the hero in the famous group in the Loggia at Florence. It was found in Hadrian's Villa, near Rome. Visconti has proved that the group represents Menelaus (instead of Ajax), carrying off the dead body of Patroclus ; but it has so long borne the name of Ajax, and accords so well with his character, that it need not be changed here.

No. 47.

FIGHTING GLADIATOR ; an heroic statue, by Agasias of Athens, from the museum of the Louvre, Paris. This justly celebrated work of Greek art

was found on the sea shore at Antium, near where the Apollo Belvidere was discovered. There is no probability that it represents a gladiator; for they never contended nude, and the figure is too noble for a slave. It is doubtless a portrait statue of some victor in the Grecian games.

No. 48.

JUNO; from the British Museum. Brought from Rome in 1774.

No. 49.

PLAN OF THE ACROPOLIS at Athens, as it is at present. Of late the hill, with its ruined treasures, has been carefully protected by the Grecian government.

No. 50.

PORTRAIT STATUE OF DEMOSTHENES. This greatly prized work of art is from the Vatican at Rome. In dignity of pose and energy of expression it is unsurpassed.

No. 51.

A bust of the statue of NIOBE. It belongs to the famous Niobe Group at Florence, one of the most celebrated of the ancient works of art. It is uncertain whether it is the work of Scopas or Praxiteles. It originally filled the pediment of the temple of Apollo Sosianus, at Rome, and was discovered in 1583. The Group is designed by the artist to represent the destruction of her fourteen children and of herself as a punishment for her assuming superiority to their mother, the goddess Latona, who had only two children. Photographs

of the entire group may be seen in the photograph alcoves upon the north side of the room.

No. 52.

GENIUS OF THE VATICAN ; antique. This beautiful torso, supposed to represent the Genius of Death, was found at Centocelli, on the road from Rome to Palaestrina. It is believed to have been the work of Praxiteles.

No. 53.

APOLLO SAUROKTONOS, or lizard-killer ; from the Vatican Museum, Rome. It was found among the ruins on the Palatine hill, in Rome, and is regarded as a copy of a statue by Praxiteles.

No. 54.

MATER DOLOROSA ; by Ritschel, of Berlin. (Modern.)

No. 55.

TORSO BELVIDERE. This splendid fragment, supposed to be a torso of the statue of Hercules, occupies a prominent position in the Vatican Museum at Rome, and has been greatly admired and studied by leading artists, for three centuries. It was found about the end of the fifteenth century, at the theatre of Pompey. An inscription on the base declares that Apollonius, son of Nestor, the Athenian, made it.

No. 56.

ÆSCULAPIUS, the "blameless physician" of the Homeric poems, and god of medicine among the Greeks ; the son of Apollo and the nymph Coronis.

This head, illustrating the divinity of Æsculapius, was found in 1828, in the island of Melos, and was part of a colossal statue of this deity, of which other fragments were discovered at the same time. Critics place its date about 300 B. C., at the highest period of Greek art. It is now in the British Museum.

No. 57.

JASON ; from the Louvre, Paris. (See No. 32.)

No. 58.

WINGED SPHYNX ; from the British Museum.

No. 59.

PERSEUS WITH THE HEAD OF MEDUSA ; by Canova. This is one of the three modern statues in the Vatican at Rome. This head of Medusa was presented to Minerva, who wore it upon her breast-plate. When Napoleon carried the Apollo to Paris, the Pope placed this statue on the vacant pedestal, and the people were so pleased with it that they called it the "Consolation," and never allowed it to be removed from the Vatican.

No. 60.

EGYPTIAN SCRIBE ; from the British Museum.

No. 61.

AMENOPHIS III.—Memnon. This distinguished monarch was born about 1400 B. C. He enlarged the temple at Karnak, and founded the palace at Luxar. Many statues of this ruler have been preserved, and quite a number are in the different Euro-

pean museums. This one was discovered by Belzoin, near the Colossus of Memnon at Thebes, and is a work of pure Egyptian art.

No. 62.

WINGED SPHYNX ; from the British Museum.

No. 63.

THE DYING ALEXANDER ; from Florence. This is a fragment of a colossal statue, expressing extreme pain. It is regarded as one of the finest remains of ancient art.

No. 64.

ANTIQUÉ VASE.

No. 65.

JUPITER, the king of gods, called, by the Greeks, Zeus. This bust, which was discovered at Otricoli about forty miles from Rome, was, perhaps, a copy from the statue of Zeus by Phidias, which was in Elis, Greece, and was the most famous statue of antiquity.

No. 66.

THE GRINDER. This antique is one of the gems in the Tribune in the Uffizzi palace at Florence. It represents a barbarian sharpening a knife, and, arrested in his work, looking up. The truthfulness of the posture and expression cannot be surpassed.

No. 67.

ROSETTA STONE ; from the British Museum. The original, which is of black basaltic granite, was found at Rosetta, in lower Egypt, in 1799, by

Bouchard, while digging in the Fort of St. Julian. It contains a trilingual inscription, the upper one in hieroglyphics, the middle one in demotic (common) characters, and the lower one in Greek. Through a knowledge of Greek, scholars were able, from the discovery of this stone, to construct the Greek alphabet.

No. 68.

WRESTLERS ; from Florence. This group was found in the same excavation with, and has been supposed to belong to, the family of Niobe. It is deemed "a fine example of anatomical study, of a difficult but harmonious composition." Among the Greeks, the wrestlers were naked and rubbed with dust and oil.

No. 69.

FLORA ; the Roman goddess of flowers. This antique was found in the Villa of Hadrian, and is now in the Capitoline Museum at Rome.

No. 70.

VENUS DE MEDICI, the goddess of love. As shown by her nudity and the dolphin at her side, she is represented as just rising from the foam (*ἀφρός*) of the sea ; whence her Greek name, Aphrodite. The figures upon the dolphin are Eros and Imeros. It is uncertain when it was found, but it was anciently in the Medici's Gardens at Rome, and was moved to Florence in the seventeenth century. The inscription on the base of the original states that Cleomenes, son of Apollodorus, the Athenian, made it. The arms are restorations, and should never have been added,

for the statue gains greatly in beauty and purity when they are left off. The work was so much a favorite of the Greeks and Romans, that a hundred ancient repetitions of this statue have been noticed by travelers.

No. 71.

ANTINOUS: a youth of extraordinary beauty, the favorite of the Emperor Hadrian. He was drowned in the Nile, whether accidentally or purposely to save the Emperor, is uncertain. After his death the Emperor was inconsolable. He erected temples and statues to him and deified him with worship, and leading artists multiplied his form to gratify the monarch. This statue was found at Hadrian's Villa, and is now in the Capitoline Museum.

No. 72.

SOPHOCLES, the most brilliant tragic poet of Athens. He lived from 495 to 406 B. C. This famous antique is in the Lateran Museum at Rome. It is greatly admired for the natural dignity of its posture and for its graceful drapery. At the poet's feet is a case of books (restored). The whole conception and execution are pure Greek.

No. 73.

MOSES: a colossal statue in sitting posture. The statue of which this is a cast was originally intended for the Mausoleum of Pope Julius II. and is one of the few works that were completed for him. The original is now in the Church of St. Peter in Chains, in Rome. It is the production of Michael Angelo,

who worked upon it three years and, when finished, kept it in his studio for forty years. The only mould ever made for this statue was to furnish a cast for the Crystal Palace Exhibition in London. The only other cast in this country is in the Antiquarian Museum at Worcester.

No. 74.

ARISTIDES, surnamed the "Just;" an Athenian who flourished in the early part of the fifth century, B. C. This antique was found at Herculaneum, and represents the Statesman at the moment when he attempted to arouse the Spartans to resist the Persians, who had taken Athens. It is now in the National Museum, Naples. This statue was especially admired by Canova.

No. 75.

MERCURY ARGIPHONTES (slayer of Argus); by Thorwaldsen while at Rome in 1819. The action was suggested to the artist by a natural, though uncommon attitude, taken by a porter seated upon a curb-stone in the Corso, Rome. Mercury is represented as upon the point of slaying his enemy. Having just put the Argus to sleep by playing upon the syrinx, he gently removes the instrument from his lips, and with his right hand draws his sword; fearing to wake his adversary, he holds the scabbard with his heel. This statue has been several times cut in marble. One of these, after the artist's death, was purchased by the Spanish government.

No. 76.

IDOLINO; from the Uffizzi gallery in Florence. The original of this beautiful antique is bronze, and was discovered at Pesaro in the fifteenth century.

No. 77.

DIANA OF GABII (the place where the statue was found), or Diana Robing. This pure Greek antique is now in the Museum of the Louvre, Paris.

No. 78.

VASE; from Copenhagen. The figures are from Thorwaldsen's bas-reliefs.

No. 79.

ARMS OF ACHILLES: a marble bas-relief by Thorwaldsen, 1831. It represents Minerva presenting to Ulysses the arms of Achilles. Ajax, who hoped to have them, turns away full of anger, and uttering imprecations. In the background the nereid Thetis, mother of Achilles, sits weeping beside the tomb of her son.

No. 80.

NIGHT; by Michael Angelo. (See No. 5).

No. 81.

Model of VENUS GENETRIX. The apple in her left hand is the prize for beauty which she received from Paris. More statues of her remain than of any other deity. This is one of the most completely draped statues of this goddess. The original is in the Museum of the Louvre, Paris, and was brought there from Versailles.

No. 82.

PANEL; from Alhambra palace in Spain.

No. 83.

DAY; by Michael Angelo.

No. 84.

EURIPIDES: a distinguished tragic poet of Greece, who lived from 480 to 406 B. C. The original is in the Royal Museum, Berlin.

No. 85.

AGES OF LOVE; by Thorwaldsen, 1824. The idea of this bas-relief was taken from a fresco found at Stabial. The representation is as follows: Psyche, seated beside a cage containing little Loves, deals them out to all who apply. A child innocently approaches to play with them, while the little girl is half afraid to caress them; another, older, kneels in adoration before the Love Psyche is giving her; behind her a young woman is passionately kissing the one she has received; another woman, representing succeeding disenchantment, holds the little god by the wings; further on, Love alights triumphant on the shoulders of a man who seems unable to bear so heavy a burden; and at the extreme left, he flies away laughing from an old man who stretches towards him his trembling hands. This composition has been reproduced a great number of times.

PHOTOGRAPHS.

The western end of the Hall is mainly devoted to alcoves for pictures. The collection numbers over eight hundred and sixty photographs, representing architecture, statuary and painting. Among these are the photographs taken by Alinari, of the same size as the original paintings; a very full collection from Venice; photographs of the several English Cathedrals; all of the statuary in Thorwaldsen's Museum, and a large number from Ponti's and Naya's collections in Venice; from Braun's, in Paris, and from Mansell's in London. Although the division of subjects is not complete, yet the visitor will find the representations of architecture mainly in the alcoves on the south side of the Hall, and of the statuary on the north side. The aggregate cost of the entire collection was \$2,000. The photographs in the easternmost alcove, upon the north side of the room, are a series of designs from Bague and Gerome, prepared in Paris. The open alcove, nearly opposite to this, on the south side of the room, contains photographs of the old masters, taken from original sketches. Aside from these, the visitor will find sufficient information upon the pictures themselves. The Goethe and Schiller series, however, found on either side of the Hall, at the west end, deserve mention. In the central alcoves upon the north side are photographs of the finest specimens of statuary in the European collections, and views of the most noted galleries. In the southwest corner of the room may be seen several full size photographs, by Alinari and Naya, of some of the most noted paintings of the old masters.

The large painting upon the west wall is a Magdalen by Guido. It was formerly in Charles Sumner's collection.

WALKER HALL.

Walker Hall stands upon the north side of the College grounds. It was built at an expense of over one hundred and twenty thousand dollars, after the plan offered by Mr. George Hathorne, of New York. The style of architecture is that known as the revised mediæval. The stone of which it is constructed is mainly that known as the Monson granite. It was presented by Mr William N. Flynt, from his quarry in Monson, with no other expense to the College than the cost of transportation. The laying of the corner stone was on Class Day, June 10, 1868, and the formal opening on the 20th of October, 1870. In return for the munificence of Dr. W. J. Walker, of Newport, R. I., in contributing to the building fund, it bears his name. It is intended as the Scientific building of the College. Upon the lower floor are two recitation rooms at either end with offices adjoining, the Treasurer's rooms and a vault. Upon the second floor are the President's office, the Trustee's room, the President's lecture room, and Professor Snell's lecture and recitation room, all upon the south side of the building, and upon the north side the

CABINET OF NATURAL PHILOSOPHY.

This Cabinet consisted originally of only a very limited number of second-hand instruments, which were purchased of Dr. Pierce, of Salem, soon after

the founding of the College. In 1831, two thousand dollars were expended in the purchase of apparatus in Paris. From 1831 to 1870 the only appropriation to this department was an average annual allowance of about sixty-five dollars. During this period, however, Professor Snell was improving the old articles, and devising and manufacturing new, until, in 1870, the apparatus had doubled in quantity and utility. Since the completion of Walker Hall, various valuable additions have been made, mainly to the departments of Electricity and Sound. As the articles in this collection are not labeled, it may be proper to call the visitor's attention to a few, and mention their uses.

The apparatus for *Mechanics* will be found in Cases 1, 2, 3 and 4. Of these, Case 1 contains the elements of machinery, such as levers, pulleys, gearing, etc. Case 2 contains machine models, such as the tread-wheel, capstan, crane, etc., and articles for showing the laws of friction, of the center of gravity, and of the pendulum; Case 3 contains articles for showing the laws of torsion and compound motion; and Case 4 contains the apparatus for experiments upon collision, centrifugal force, compound and rotary motion, and Atwood's Machine, occupying the whole height of the case, which is used for illustrating the laws of falling bodies.

Case 5 is devoted to *Hydrostatics*. Here are several articles used for illustrating the laws of hydrostatic pressure, including a bellows, a fountain, a press and a hydraulic ram, and also various devices by Professor Snell for illustrating wave motion.

Cases 6 and 7, separated by the bay window, contain the apparatus for *Pneumatics*. In Case 6 will be seen a fine air-pump, and a large number of articles in glass and brass for air-pump experiments. Among the articles in Case 7, are water-pumps, fountain apparatus, siphons, a condenser and a working model of the fire engine.

The *Electrical* and the *Magnetical* apparatus fill Cases 8, 9, 10. The Holtz machine, torsion balance, Geissler tubes and electrical jars of various forms and sizes will be found in Case 8. The frictional machine will be seen in case 9; also batteries, tubes and spheres for electrical light, and articles for vibration and rotation in electricity, forming a complete outfit for class experiments. In Case 10 may be seen a Ruhmkorff coil, magnetic beams, needles and compasses.

The apparatus for *Sound* will be found in Case 11 and in part in Case 12. In the former will be seen a small organ bellows and pipes of different kinds for illustrating sound waves and the musical scale, and a glass bell and Chladni plates for showing sound vibrations. The collection in Case 12 includes a monochord, rods, forks for showing the vibrations of sound by projection of light; and near the top a large article in the form of a tuning fork, for making visible to a class the nodal vibrations of a string.

Among the *Optical* apparatus, which extends through to Case 17, may be found: in Case 12, a zoetrope for illustrating the different kinds of polarization; in Case 13, apparatus for compounding two polarizations, stereoscopes, illustrations of perspective, etc.; in Case 14, Biot's and Soleil's polariscopes, microscopes, a

frame and lenses for the extemporaneous construction of telescopes and articles for perspective ; in Case 15, prisms variously mounted, lenses of all sorts, spectroscopes and a heliostat ; and in Case 16, a large number of mirrors and lenses for reflection and refraction of light, and a Port-lumière.

Case 17 contains the apparatus for *Heat* and *Meteorology*. Prominent among the articles are a sectional model and a working model of the steam engine. Here may also be seen various sorts of thermometers, hygrometers, a pygrometer, and articles to illustrate wind and vortices.

Upon the third floor of Walker Hall are Professor Shepard's lecture room and

THE SHEPARD MINERAL COLLECTIONS.

These are three in number ; viz., the Mineralogical, the Geological, and the Meteoric. They will be described separately. Their formation has been going on for nearly half a century. The collector, in the prosecution of the work at his private expense, has twelve times visited Europe, and traversed nearly all the mineral regions of this country. He has likewise maintained profitable relations with the most active mineralogists of the day, as well as with several of the great national museums in foreign lands. The result of these prolonged labors appears in these collections, not so much in the number of the specimens, as in their choiceness,—it being well understood that a single specimen may outweigh, in scientific value, hundreds of such as compose the ordinary mineral cabinet. The object here has been not only to illus-

trate the productions of the mineral world in such a manner as to favor an accurate conception of its varieties and their connections, but also most forcibly to impress the beholder with their rareness and beauty.

The Mineralogical portion is displayed in the third story of the Walker building. It consists of numerous independent collections. The largest and most important of these commences in the east room—the arrangement beginning with the first case to the left on entering the apartment, and following the wall-cases in regular succession around this room, the connected middle room, and completes itself in Case No. 60, of the west room.

The specimens in these sixty cases are mostly of unusual dimensions, such as are commonly known as museum specimens. A few weigh upward of one hundred pounds, several above twenty, while the general average is probably over two pounds.

The system of arrangement adopted is that known as the Natural History one,—the species forming twenty-two Orders. Important changes have been introduced in the nomenclature, which will be understood from the following statement: names ending in *ite* stand for true species, except such as have an elementary constitution, and a few others. Those ending in *ine* denote minerals whose specific character is not fully settled. Such varieties and synonyms as formerly ended with *ine* and *ite*, are here terminated in *in*.

These changes are suggested with a view to prevent the confusion that arises in regard to a host of names ending in *ite*, that simply refer to synonyms and vari-

eties. The present innovation, if adopted, will wholly remove such embarrassment,—the name itself announcing whether reference is had to an acknowledged species, to a doubtful one, or to a mere variety.

This change will lend itself very conveniently also to those alterations in the rank of minerals, that must arise from advanced knowledge. Trifling modifications of the terminal syllable will thus very obviously render apparent all such discoveries.

As a farther recommendation of what is here proposed, it may be mentioned that Professor Dana has already suggested the alteration of the terminal syllable of such rocks as end in *ite*, so as to give them the termination *yte*,—thus happily distinguishing them from our mineralogical species. Quartzite, for example, will be the name of the mineral species (now known as Quartz), and Quartzyte that of the rock, called Quartzite.

ORDER I. AIR.

Commencing upon the lower shelves of Case marked No. 1, we have nine glass bottles, to represent as many species of aerial minerals. To these succeed, in

ORDER II. WATER,

several bottles also, in which are kept examples of the liquid minerals, so far as they can be preserved without risk of freezing during the cold of winters.

ORDER III. HALITE. (Soluble.)

SECTION A. (Deliquescent.) *Nitrocalcite*, *Nitromagnesite*, *Nitrammonite*—the three found in clay-like aggregates. *Nitratinite*, *Nitrakalite*, *Molysite*, *Tach-*

ydrite, Carnallite, Kremersite, Salmiacite, Halite, in numerous specimens, among which are noticeable a sapphire-blue one, from Hallstadt, Austria, and one artificially wrought, from Caledonia, Spain; *Sylvite*, in large xls., from Stassfurt, Prussia; *Tauriscite*.

SECTION B. (Persistent.) *Tronalite, Stercorite, Oxammite, Copiapite, Coquimbite, Fibroferrite, Botryite*.

Case No. 1 contains *Melanterite, Pisanite, Morenosite, Gapite, Chalcanthite, Goslarite, Johannite, Picromerite, Aphthitalite, Taylorite, Bieberite, Kieserite, Bloedite, Polyhalite, Loweite, Glauberite*.

SECTION C. (Efflorescent.) *Tinkalite, Epsomite, Thenardite, Gaylussite, Kalinite, Voltaite, Solfatarite, Alunogenite, Pickeringite, Halotrichite, Mirabilite, Mascagnite, Phosphammite, Biphosphammite, Carbammite, Teschemakerite, Guanapite, Guanoxalite*.

Section D. (Pulverulent.) *Leucanterite, Erubescite*.

ORDER IV. GYPSITE.

Section A. Mostly in powders and crusts. *Epiglaubite, Brushite, Apatelite, Aluminite, Jarosite, Pissophanite, Pitticite, Diadochite, Lardrellite, Tengerite, Zircarbite*, (nov. sp.) *Hydrocalcite, Hydrozincite, Felsobanyite, Pharmacolite, Howlite, Ulexite, Hydroboracite, Stassfurtite*.

SECTION B. In scales, fibrous, xls. and massive. *Sassolinite, Cacoixinite, Arseniosiderite, Vivianite, Erythrite, Pharmacolite, Oxacalcite, Gypsite*, in fine xls. from Montmartre near Paris, Poland, Ohio, Bologna, Gotha, Thuringia and Hallstadt Austria.

Case No. 4. *Brucite*, in large and distinct xls., from Texas, Pa.; *Lanthanite*, from Canton, Ga.,

Anhydrite. This case also contains numerous Vases and Urns, wrought in Gypsite and in mixtures of gypsite and anhydrite, from Leghorn, Italy.

ORDER V. CALCITE.

Case No. 5. *Cryolite*, *Pachnolite*, *Hagemannito*, *Calcite* in superb crystallizations, from the celebrated localities of Greenland, Cumberland, Derbyshire and Cornwall England.

Cases Nos. 6, 7 and 8 contain a continuation of the species *Calcite*, where are found large and splendid groups of xls. from the above mentioned localities, as well as from Rossie, N. Y., the Hartz, Switzerland, and from Hungary; also, illustrations of all the massive varieties, and, in particular, of the tufaceous, the stalactitic and stalagmitic forms, the latter of great size and perfection, from Dubuque, Iowa. The main collection of marbles, which partly consist of mixtures of *Calcite* and *Dolomite* are arranged in Cases No. 65 and 66 in the entry.

Case No. 9. *Aragonite* in rich varieties of xls. from Herregrund Germany; Molina Spain; Alston Cumberland; also, fibrous (satin-spar) from the last mentioned locality; coralloidal (*flos-ferri*) from Eisen-erz, Styria; and stalactitic and stalagmitic from Dubuque, Iowa.

Dolomite. In large xls. from Traversella Piedmont; the Isle of Man; Alston Cumberland (variety pearl spar). Also the other varieties known as Breunnerin, Miemin, Brown Spar, Gurhofian, and the white, massive dolomite, commonly called marble. *Rhodochrosite*, *Hydromagnesite*, *Manganocalcite*, *An-*

kerite, *Hydrodolomite*, *Magnesite*, in coralloidal masses from Regla, Cuba, W. I.; *Polycarbite* (nov. sp.), *Alumnite*.

Cases 10 and 11. *Fluorite*, in magnificent groups, —several specimens weighing over fifty pounds, and presenting all the elegant colors for which this species is so remarkable. The chief localities are Cumberland, Northumberland, Durham, Cornwall and Derbyshire, England; Saxony, Bohemia, the Hartz and the Alps.

Fluellite, *Yttrocerite*, *Fluocerite*, *Allophanite*, *Gibbsite*, *Wavellite*, *Dufrenite*, *Hitchcockite*, *Barrandite*, *Pyroclasite*, *Sombrierite*, *Glaubapatite*, *Redondite*, *Apatite*, in large and beautiful green xls. from Hammond, N. Y., and in interesting massive varieties from numerous countries.

ORDER VI. BARITE.

Case 12. *Celestite*. Very perfect xls., in large groups, from Girgenti, Sicily. *Barite*, in matchless xls. (one weighing ninety pounds), from Dufton, Westmoreland; other localities, Cheshire, Conn.; Saxony, Hungary, and Missouri. *Witherite*, in very remarkable xls., from the Fallowfield mine, in Hexham, Northumberland; *Barytocalcite*, very perfectly crystallized, Bleagill Alston, Cumberland; *Bromlite*, *Strontianite*, *Stromnine*, *Calstronbarine*, *Emmonsine*, *Siderite*, from many localities and in all its varieties, from perfectly crystallized, to massive, compact and earthy.

Case No. 15. *Parisite*, *Childrenite*, *Xenotomite*, *Churchite*, *Monazite*, *Wagnerite*, *Triphylite*, in perfect

xls., with Spodumenite, from Huntington (formerly Norwich), Mass.; *Triplite*, *Smithsonite*, *Calaminite*, in large xls., from Franklin, N. J.; *Wöhlerite*, *Willemite* (Troostin), in very superb xls., associated with Franklinite, Franklin, N. J.; *Tephroite*, *Danalite*, *Romeinite*, *Scheelite*, *Eulytenite*.

ORDER VII. MALACHITE.

Case No. 16. *Annabergite*, *Chalcophyllite*, *Walpurgite*, *Symplesite*, *Libethenite*, *Scorodite*, *Beudantite*, *Pharmacosiderite*, *Torbenite*, *Autunite*, *Aphanesite*, *Atacamite*, *Thalassite*, *Tallingite*, *Volborthite*, *Cornwallite*, *Erinite*, *Euchroite*, *Olivenite*, *Adamite*, *Tagilite*, *Cyanotrichite*, *Brochantite*, *Langite*, *Uranochalcite*, *Niccarbite* (nov. sp.), *Zaratite*, *Malachite*, *Azurite*, *Pseudomalachite*, *Bayldonite*, *Dioplasite*.

ORDER VIII. KERATE.

Senarmontite, *Arsenolite*, *Valentinite*, *Bismutite*, *Selbine*, *Phosgenite*, *Matlockite*, *Cotunnite*, *Mendipite*, *Calomelinite*, *Plombiodite*, *Cerargyrite*, *Embolite*, *Bromyrite*, *Iodyrite*, *Coccinite*.

ORDER IX. CERUSSITE.

Vaquelinite, *Crocoisite*, a magnificent specimen from Beressof, Siberia; *Pyromorphite*, a very rich series from all the celebrated localities. *Mimetite*, *Plombgummite*, *Beudantite*, *Vanadinite*, *Puchnerite*, *Stolzite*, *Wulfenite*.

Case No. 17. *Cerussite*, *Leadhillite*, *Lanarkite*, *Caledonite*, *Linarite* very superb, *Anglesite*, *Susannite*.

SUB-ORDER I. OCHRE.

Melinite, *Humoferrite*, (nov. sp.) *Beauxite*, *Xanthitanite*, *Molybdite*, *Stibiconite*, *Cervitane*, *Smaltochrine* (nov.) *Mennigite*, *Uraconite*, *Gummite*, *Bismite*, *Tungstite*, *Tantalliconite*, *Columbiconite* (nov. sp.), *Pimelite*.

SUB-ORDER II. CLAY.

Kaolinite, *Halloysite*, *Lenzine*, *Saponite*, *Sepiolite*, *Aquacreptite*, *Gearsutite*, *Dillnite*, *Cimolite*, *Quincite*, *Allophanite*, *Hisingerite*, *Chloropulite*, *Gillingite*, *Wadite*, *Asbolite*.

ORDER X. SERPENTITE.

Genthite, *Deweylite*, *Ceroline*, *Chrysocollite*, *Dysyntribite*, *Pagodite*, *Serpentite*.

Case No. 18. *Williamsine*, *Antigonine*, *Marmoline*, *Picrosmine*, *Picrolite*, *Pyroidesine*, *Dermatine*, *Villarsine*, *Hydrophite* (*Jenkinsin*), *Pinite*, *Liebnerine*, *Fahlunine*, *Chlorophylline*, *Pseudoline*, *Oncosine*, *Pelagonine*, *Pyralloine*, *Rennselaerine*, *Chiastoline*, *Asbestite*.

Case No. 19. *Sussexite*, *Anthosiderine*, *Crocidolite*, *Bastite*, *Antillite*.

ORDER XI. TALCITE.

Talcite, *Pyrophyllite*, *Cymatolite*, *Aspidiolite*, *Delesite*, *Ripidolite*, *Penninite*.

Case No. 20. *Euchloite*, (nov. sp.) *Prochlorite*, *Corundophilite*, *Amesine* (nov.), *Thuringite*, *Melanoline*, *Selandoite*, *Chalcodeite*, *Vermiculite*, *Stilpnomelane*, *Syhedrite*, *Chlorophæite*, *Cookeite*, *Rubellanine*, *Felknerite*, *Damourite*, *Nacrine*.

Case No. 21. *Muscovite* in very numerous varieties, and from many localities, among which the specimens exhibiting landscapes, produced by included magnetite, from Chandler's Hollow, Del., are remarkable.

Case No. 22. *Muscovite*, *Biotite*, Peltonine, (nov.) Phlogopine.

Case No. 23. *Astrophyllite*, Adamsine, *Lepidolite*, *Cryophyllite*, *Lepidomelanite*, *Cronstedite*, *Pyrosmalite*, *Pyrosclerite*, *Margarite*, *Evphyllite*, *Chloritoidite*, *Seybertite*, *Voightite*.

ORDER XII. ZEOLITE.

Case No. 24. This and the following case embrace superb examples of the numerous species of this beautiful order of minerals. The most striking specimens come from the Ghaut mountains of India. *Stilbite*, *Heulandite*, *Apophyllite*, *Chabasite*, *Gmelinite*, *Harmotomite*, *Thomsonite*, *Mordenite*, *Scolezite*, *Mesolite*, *Pectolite*, *Natrolite*, *Carpholite*, *Prehenite*, *Brewsterite*, *Edingtonite*, *Gismondite*, *Datholite*, *Levynite*, *Analcite*, *Leucite*, *Phillipsite*, *Herschelite*.

ORDER XIII. SPAR.

Case No. 26. *Wollastonite*, *Okenite*, *Periclasite*, *Faujasite*, *Nephelinite*, *Cataplelite*, *Melilite*, *Sodalite*, *Lapilazulite*, *Nosite*, *Wernerite*, *Gehlenite*, *Meionite*, *Dipyrite*, *Eudialite*, *Lazulite*, in numerous unique specimens, from Graves mountain, Lincoln county, Ga.

Case No. 27. *Anorthite*, *Orthoclasite*, from many localities, in large and varied crystallizations, as well as massive.

Case No. 28. *Oligoclasite*, *Albite*, *Andesine*, *Labradorite*, *Spodumenite*, in gigantic and highly finished xls., from Huntington (formerly Norwich), Mass. *Epidotite*, *Zoisite*, *Babingtonite*, *Mosandrite*.

Case No. 29. *Amphibolite*, in very many and striking examples, showing the chief varieties of this protean species; *Cummingtonine*, *Arfwedsonine*, *Anthophylline*, *Crocidoline*.

Case No. 30. *Augite*, with its full series of xls. and massive varieties; *Roepperite*, *Wichtisine*, *Sordavaline*, *Tachyline*, *Knebelite*, *Jadeite*, *Rhodonite*, *Fowlerine*, *Petalite*.

ORDER XIV. GEM.

Case No. 31. *Chrysolite*, *Forsterite* (Boltonin), *Villarsite*, *Monticellite*, *Chondrodite*, *Opalite*, a fine series of the variety called Siliceous sinter, from the region of the Yellow Stone river; also, the variety *Hyalin*, the common and precious opals, and the Wood-Opal from California; *Obsidianite*, a large mass of Obsidian from Mexico.

Case No. 32. *Vesuvianite*, *Garnetite*, a very rich series of specimens, of many colors and forms; *Staurolite*.

Cases No. 33, 34, 35, 36, and the greater part of Case No. 37, are devoted to a single species of Quartzite. Case 34 has as immense geode from Southern Iowa, and a ponderous mass of the very curious Gashed Quartz from Lancashire, England.

Case 36 is remarkable for the splendid groups of rock-crystal, obtained above a century ago, from La Gardette, in Dauphiné; also, for a very superb group

of Amethyst from Brazil, and the half of an immense agate-ball lined with xls. of amethyst, from Oberstein on the Rhine. Very interesting slabs of Elastic Sandstone (the parent rock of the diamond), from Rutherford county, North Carolina, are found in No. 37; likewise, *Iolite* and *Axinite*.

Cases No. 38 and 39 contain a very choice series illustrative of the beautiful species, *Tourmalinite*, where may be seen notable specimens from Chesterfield, Goshen, Pelham and Warwick, Mass.; Haddam and Monroe, Conn.; Alstead and Sullivan, N. H.; and from Paris and Hebron, Me.

Case No. 40. *Andalusite*, *Fibrolite*, *Diasporite*, in matchless specimens, from the Chester emery-mine, Mass. *Kyanite*.

Case No. 41. *Berylite*. Few collections surpass this in its series belonging to the present species. Numerous localities are represented. The largest xl. (weighing nearly two hundred pounds) and several others are from Acworth, N. H. The aquamarines are from Daouria, on the confines of China, and the emeralds from the Urals.

Scarcely less precious are the contents of Case No. 42. *Cymophanite*, from Haddam, Conn.; *Topazite*, from Adun-Tschilon, Siberia; *Phenacite*, *Zirconite*, splendid xls., engaged in the ganque, from Miask, Siberia; *Sapphirite*, *Spinelite*, copiously illustrated, in very large xls., from the rich American localities, and in single xls. from Ceylon.

Case No. 43. *Corundumite*. Here will be seen the gigantic xls. of Ruby and Sapphire, from Franklin, Macon Co., N. C.; the former weighing three hun-

dred and twelve pounds, and valued at one thousand dollars. While its exterior is generally red, within, at the depth of an inch, it changes in several places to a sapphire-blue. The large xl. of pale, greyish sapphire was found in the same vicinity with the ruby. Its weight is eleven and three fourths pounds. The case contains very distinct xls. of sapphire from the Urals, from Chester, Mass., and from the region of the Franklin furnace, New Jersey; also ruby from the latter section, and common corundumite from Pelham, Mass., and many other localities.

Case No. 44. *Corundumite*, variety emery, from Turkey and from Chester; the latter largely associated with diasporite, margarite and corundophilite.

This case also contains glass models of the largest and most remarkable *Diamonds* known.

ORDER XV. ORE.

SECTION A. (Lustre resinous to semi-metallic.)

Case No. 45. *Thorite*, *Warwickite*, *Cerite*, *Zincite*, *Calcozincite*, (nov. sp.) *Titanite*, *Keilhauite*, *Tscheffkinite*, *Pyrochlorite*, *Microlite*, *Ilvaite*, *Schorlomite*, *Allanite*, *Gadolinite*, *Pyromelanite*, *Perovskite*, *Rutherfordine*, *Octahedrite*, *Pyrrhite*, *Brookite* (Arkansin), *Rutilite*, an unequalled series of xls. from Graves Mountain, Lincoln Co., Ga., the largest of which weighs over eleven pounds.

Case No. 45. *Polymignite*, *Evxenate*, *Aeschynite*, *Polycrasite*, *Fergusonite*, *Mengite*.

SECTION B. (Heavy Cassiterite group.) *Yttrotantalite*, *Samarskite*, *Columbite*, *Ferroilmenite*, *Heer-*

mannolite (nov. sp.), *Tantalite*, *Cassiterite*, *Cuprite*, *Tenorite*, *Massicotite*, *Wolframite*, *Uraninite*.

SECTION C. (Magnetite group.) *Chromite*, *Mennacinite*, (limenin Washingtonin.) Among many examples of this species, one very remarkable from Chester, Mass., will be seen. The largest xl. in this group is seven inches across. *Magnetite*, *Dimagnetine*.

Case No. 47. *Magnetite*. Native magnet or lodestone from several localities, as Shepard Mountain, Mo.; Magnet Cove, Ark.; and Morris Co., New Jersey. One hexagonal mass of eighty pounds from the latter region, is supposed to be pseudomorphous, after apatite. *Hematite*. Superb crystallizations from Elba, with very interesting masses of fibrous red hematite from Lancashire, England, and other varieties from many localities. *Martite*.

Case No. 48. *Franklinite* in large and very perfect xls. *Limonite*, a very interesting series from Salisbury, Conn. ; also *Turgite* (hydrohematin) from same locality.

Case No. 49. *Turgite*, *Goethite*, in fine xls. from Cornwall, England, and from Marquette, Lake Superior.

SECTION D. Pyrolusite group. *Pyrochroite*, *Pyrolusite*, *Mangnite*, in splendid specimens from the Hartz. *Crednerite*, *Hausmannite*, *Psilomelanite*, *Braunite*, *Wadite*.

ORDER XVI. METAL.

Case No. 50. *Mercury*, *Amalgam*, *Lead*, *Tetradymite*, *Joseite*, *Nagyagite*, *Tellurium*, *Sylvanite*, *Henry-*

ite, Schirmerite, Altaite, Calaverite, Schapbachite, Hessite, Petzite, Copper, Arquerite, Silver, Gold.

Case No. 51. Gilded model of the Welcome Gold Nugget of Australia, found June 11th, 1858, and which yielded two thousand and nineteen ounces pure gold. *Bismuth, Antimony, Allemonite, Arsenic, Iron* a nugget found in Wando river, S. C.

ORDER XVII. PYRITE.

Case No. 52. *Chalcopyrite, Cubanite, Millerite, Marcasite, Pyrite* in beautiful xls. from Elba, Piedmont and Cornwall.

Case No. 53. *Pentlandite, Stannite, Pyrrhotite. Dipyrrhotine, Bornite* crystallized and massive from Bristol, Conn. ; Ducktownine.

Case No. 54. *Berzelianite, Grünauite, Arsenopyrite, Leucopyrite, Lölingite, Gersdorffite, Rammelsbergite, Glaucodotite, Wolfachite, Ullmannite, Linnaeite, Cobaltite, Smaltite, Chathamite, Breithauptite, Skutterudite, Niccolite.*

ORDER XVIII. GLANCE.

Sternbergite, Molybdenite, Covellite, Stibnite.

Case No. 55. *Naumannite, Tiemannite, Argentite, Acanthite, Polybasite, Enargite, Clausthalite, Zorgite, Jamesonite, Plagionite, Brogniardite, Freieslebenite, Zinkenite, Stephanite, Bismuthinite, Emplectite, Aikenite, Berthierite, Geocrinite, Boulangerite, Bin-nite, Dufrenoy'site, Sartorite, Galenite*, in very perfect xls., from Rossie, N. Y., and from Cumberland, England.

Case No. 56. *Galenite, Chalcocite*, splendid crystallizations from Bristol, Conn. ; Harrisine, Bourn-

nite, in very fine xls. from Liskeard, Cornwall. *Stromeyerite*.

Case No. 57. *Tetrahedrite, Tennantite*.

ORDER XIX. BLENDE.

Orpimentite, Realgarite, Pyrostilpnite, Kermesite, Pyrargyrite, Polyargite, Proustite, Miargyrite, Cinnabarite, Alabandite, Hauerite, Greenockite.

Case No. 58. *Sphalerite*, rich series of crystallized specimens, mostly from Cumberland, England; *Rahtite*.

ORDER XX. SULPHUR.

Case No. 59. *Sulphur*, a splendid example from Java, together with numerous rich crystalizations from Sicily; *Sulphoselenite*.

ORDER XXI. RESIN.

Naphthalite, Scheererite, Hatchetite, Ozocerite, Elaterite, Fichtelite, Idrialite, Copalite, Ambrosite, Succinite, Resinite, Balsamite.

Case No. 60. *Mellite, Dysodilite, Dopplerite, Tasmanite, Asphaltite, Albertite, Torbanite, Piauzite*.

ORDER XXII. COAL.

Graphite, Coal, Anthracite.

Case No. 61. Here may be seen a variety of instruments employed in the investigation of the physical properties of minerals, such as Goniometers (common and reflecting); Balances (English manufacture by Robinson, and German by Oetling), apparatus for the study of the optical, magnetic and electric characters, for determining the specific gravity of minerals, steel

and agate mortars, hammers, chisels, files, forceps, blowpipes, microscopes, etc. Also, models of crystals in wood and glass, some of which are dissecting, and contrived to show the interior structure of xls.

Three smaller, narrow Cases, Nos. 62, 63 and 64, opposite the great window of the middle room, contain about one thousand specimens of small size, arranged according to the plan of the main collection. These are exceedingly select, and embrace a large number of crystals, gems and cut stones.

Cases No. 65 and 66, in the hall at the top of the stairs, contain a series of polished marbles, among which the "landscape marble," from near Bristol, England, and the "ruin marble," from Florence, Italy, are most worthy of notice.

The double Cases, Nos. 73, 74 and 75, also situated opposite the great window in the middle room, display about seven hundred of the choicest specimens of the mineral kingdom. These are also systematically arranged; and are placed here for especial inspection, on account of the excellence of the light. It is unnecessary to call attention to particular specimens in these and the contiguous narrow cases, since they scarcely contain an example not worthy of close inspection.

The two small half Cases, Nos. 67 and 68, placed on the sides of the large window, exhibit above two hundred very small specimens of rare minerals, including many of the gems, particularly of tourmalines, aquamarines, opals, topazes, rubies and sapphires. Rare and highly perfect xls., as well as cut stones, will be seen among them.

The half Cases 69 and 70 in the east room, and 71 and 72 in the west room, are devoted to still another collection of very small specimens (mostly crystals), in number about one thousand. These are placed directly contiguous to the glass which separates them from the observer, thus permitting an easy inspection of their properties.

On the sides of the eight windows of the east and west rooms, are placed sixteen half cases, filled with a series of six hundred and seventy-five wooden models, illustrative of crystals. They were made at Bonn, in Prussia, along with nine other similar sets; and were finished with the highest precision, all their angles having been verified by goniometrical measurement. The work of completing the ten sets occupied the maker two entire years.

COLLECTIONS ARRANGED IN THE MINERALOGICAL LECTURE ROOM.

The first of these meets the visitor as he enters the door on the left, and illustrates the physical properties of minerals, such as the variations among *massive minerals*, *Pseudomorphous crystals*, the *imitative shapes*, *fracture*, *lustre*, colors, including the *play of colors*, the *change of colors*, *opalescence*, *iridescence*, *dichroism*, the *delineation of colors* (dendrites). To these succeed the *streak*, the *transparency*, the *state of aggregation*, and the *hardness*.

Then follows a choice collection of about one thousand specimens, arranged to express the chemical composition of minerals, in which the constituents of each species are given in the Berzelian symbols.

The system of arrangement adopted is that of M. Adam, who distributes the species into the forty-two following families, viz.: Hydrogenides, Silicides, Borides, Carbonides, Titanides, Tantalides, Columbides, Tungstides, Molybdides, Vanadides, Chromides, Tellurides, Antimonides, Arsenides, Phosphorides, Nitrides, Selenides, Sulphurides, Iodides, Bromides, Chlorides, Fluorides, Magnesides, Aluminides, Uranides, Manganides, Ferrides, Niccolides, Cobaltides, Zincides, Cadmides, Stannides, Plumbides, Bismuthides, Cuprides, Mercurides, Argentides, Palladides, Iridides, Platinides, Osmides, Aurides.

Another collection, of very select specimens, all of the medium size, begins on the west side of the room by the window, and passing around by the north side, terminates on the east end of the room at the east window. This collection consists of about two thousand specimens, and is distributed according to the system followed in the main cabinet. Yet another and similar series, equally numerous, is arranged in the lower half of these cases, but behind wooden doors. Opposite each pair of doors are four moveable shelves or trays, in order to allow the contents of the collection to be placed upon the lecturer's table when needed. The arrangement here, also, is that of the natural history system. This collection for instruction is supplemented by still another, arranged in a case of twelve drawers, each two feet square, and which contains, one thousand small sized specimens.

There are other cases in this room containing numerous instruments of precision, utensils and

pure chemicals for the analysis and blow-pipe treatment of minerals, besides many drawers, in which are bestowed duplicates and unarranged minerals. It may here be stated, also, that one hundred and twenty-two large sized drawers exist beneath the large cases in the main cabinet, for a similar purpose, many of which are already occupied.

A commodious fire-proof safe communicates with the west room of the main cabinet, where are kept a considerable number of the most valuable specimens belonging to the mineral collection, as well as important papers and catalogues pertaining thereto.

B A R R E T T G Y M N A S I U M .

To the east of Walker Hall stands the Gymnasium. The building was planned by Mr. Charles E. Parkes, of Boston, and completed in 1860. Dr. Benjamin Barrett, of Northampton, whose name it bears, was the chief contributor to its erection, and also made subsequent improvements. At his death, in 1869, he left a legacy of five thousand dollars for its support. On the first floor are a private office, dressing rooms, and a main room containing bowling alleys and rowing weights; here may also be found a lifting machine, and apparatus for securing the physical statistics of the College. In the second story is the hall for the gymnastic exercises of the separate classes. This room is furnished with the usual heavy apparatus, such as trapeze, swinging rings, batule board, vaulting bar, rack bars, etc.

The class exercises are on Monday, Tuesday,

Thursday and Friday of each week, at about the following hours : Freshmen, 8 A. M. ; Sophomores, 10 A. M. ; Juniors, 4.30 P. M. ; Seniors, 5 P. M. A Gallery is provided for visitors, who are welcomed to witness these exercises.

COLLEGE CHURCH

Is situated upon the eastern brow of College Hill. This site was chosen in preference to many others that were urged, because of the charming view to the east and with regard to the area of the college campus in times to come. The corner stone was laid in the autumn of 1870, and the church was dedicated in the summer of 1873. The cost of building was seventy thousand dollars, of which Mr. W. F. Stearns, son of President Stearns, gave forty-seven thousand dollars. The pulpit was given by the church in Cambridgeport, of which the President was formerly pastor. The rose window on the south was given by the church in Bedford, his native town ; the east window was given by the late Deacon Eckley Stearns, of Woburn, Mass. ; and the north window was given by Gov. Onslow Stearns, of Concord, N. H. The cost of each was three hundred and fifty dollars. The architect was W. A. Potter, Esq., lately appointed Government supervising architect. The tower is twenty-four feet square at its base, and is composed of four stages, changing from a square to an octagon, and ornamented with an octagonal spire, the whole rising nearly one hundred and fifty feet. The chime of bells was presented by the late George Howe, Esq., of Boston,

partly in memory of the graduates of the College, who fell in battle during the late war. In the second story of the tower is a room also memorial of the fallen soldiers, intended to contain the cannon captured in the battle of Newbern, N. C., and other memorials of the war. After a general view of the exterior, which is most admired by those who study it longest, the visitor will find upon closer inspection that the brown stone trimmings, adorning the walls, are variously carved. Among these adornments may be found the date of the laying of the corner stone, the monogram of the college, representations of the fruits and flowers of this and other countries, an abbreviation of the name of Christ in Greek, and other symbols and mottos indicative of the purposes for which the building was erected. Beneath each of the rose windows is an arcade of five windows, between which are placed polished red Scotch granite shafts, with their capitals and bases variously carved and moulded. Upon the capitals of the shafts at the east end are symbolical representations of the four Evangelists. In the interior the entire frame work is shown, painted and decorated in accordance with the general character of the interior finish of the building. The furniture is of butternut, excepting the pulpit and organ frame. The unique pillar near the entrance deserves special notice. The seating capacity of the building is intended for the accommodation of five hundred and fifty persons.

West of the road, running in front of Chapel Row, are three buildings belonging to the College,—the

President's House, the Library and College Hall. Of these the President's House is southernmost. It was built in the years 1834 and 1835, at a cost of about nine thousand dollars.

COLLEGE HALL.

This is the plain brick building in the corner, between the roads to the south and to the west. It originally served as a church, but upon the completion of the new church edifice in the village, in 1867, it was purchased by the Trustees, and thoroughly remodeled and repaired. It is now used for the annual examinations of the several classes and for Commencement exercises. It also serves as a hall for lectures and concerts during the year.

LIBRARY.

The plain stone building between College Hall and the President's House contains the College Library. It was completed in 1853, the first stone building upon college grounds. It was planned by the same architect as Appleton Cabinet and Lawrence Observatory—Mr. Sykes. The funds for building were raised by private subscription. Fifteen thousand dollars were collected, of which ten thousand were set aside to defray the expense of building, and the remaining five thousand to the purchase of books.

There are now upon the shelves over thirty thousand volumes, to which are made yearly additions of over eight hundred volumes. Upon the lower floor are a working room for employees, a pamphlet room, a room for College archives, and various other apart-

ments filled with books. Upon the second floor is the public reading room, containing the desk from which to draw books. Upon the tables in this room are all the leading Magazines and a large number of books for general reference. The following portraits are hung upon the upper railing in this room: North side—Dr. Moore, first President of the College, hanging at the right as one enters, and Dr. Humphrey. West side—Dr. Hitchcock, Hon. Samuel Williston, and Professor Warner. South side—Mr. David Sears, founder of the Sears' Fund, directly over the door, and a copy of a portrait of Gallileo in Florence. East wall—Professor Tyler, Mr. Sears and Professor Fiske. Of the two portraits of Mr. Sears, the one upon the south side was painted in London; the one upon the west side, in this country.

The Library has, for its support, a permanent fund, yielding now an annual income of twenty-five hundred dollars, which is steadily increasing. This fund, established by Hon. David Sears, of Boston, is called the "Sears' Fund of Literature and Benevolence." It consists of real estate in Boston, which he deeded to the College, and of direct contributions of money at different times. The present accumulated principal is about thirty-three thousand dollars. This is constantly increasing, not only by the value of the real estate donated, but also by the yearly addition to the principal of one half of the income. There is, besides, the Adams' Benevolent Fund, which yields an annual income of two hundred and forty dollars. At present, the total amount of money annually invested in books is considerably over fifteen hundred dollars.

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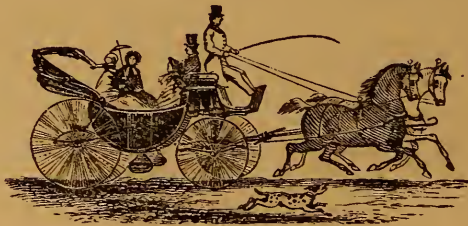
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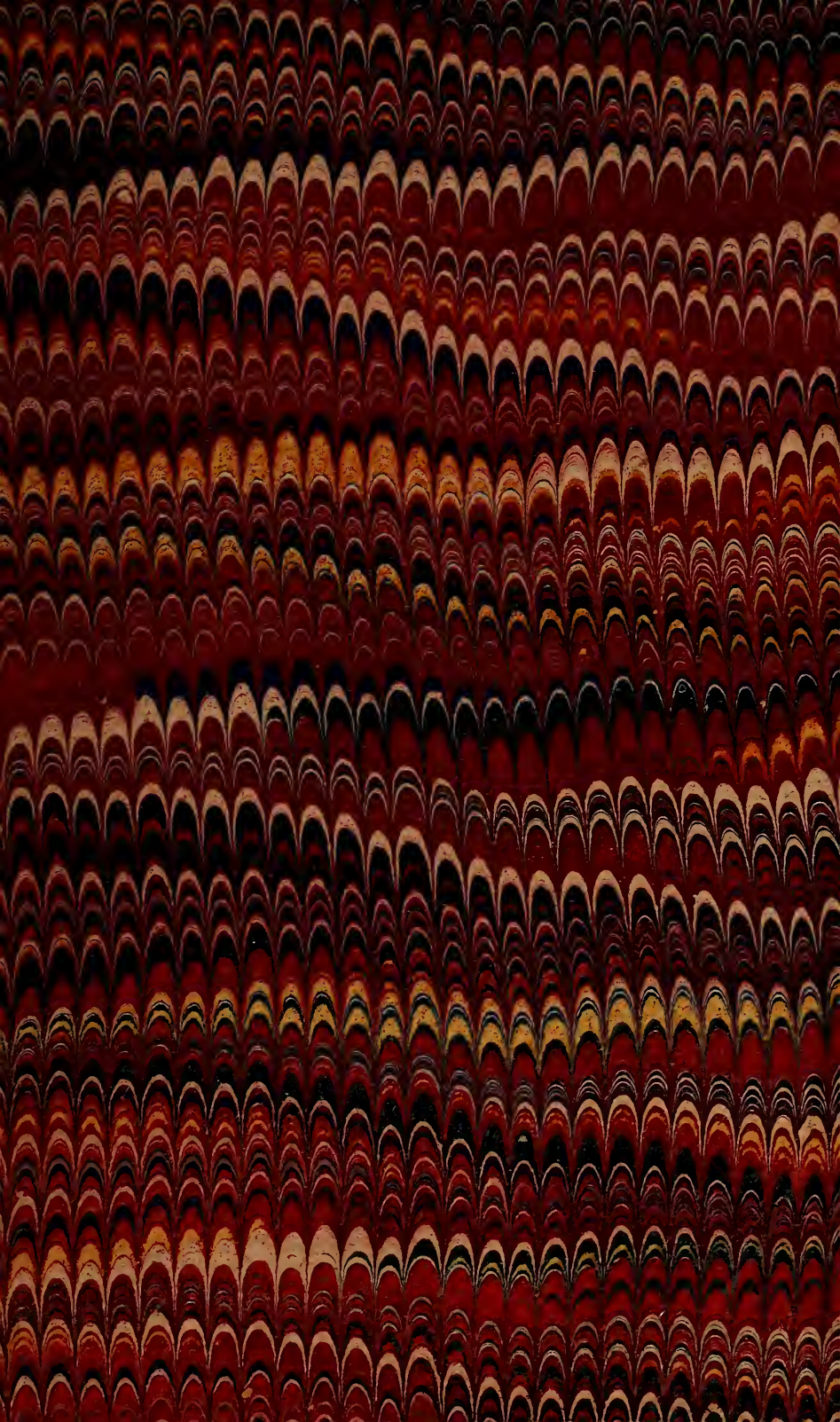
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