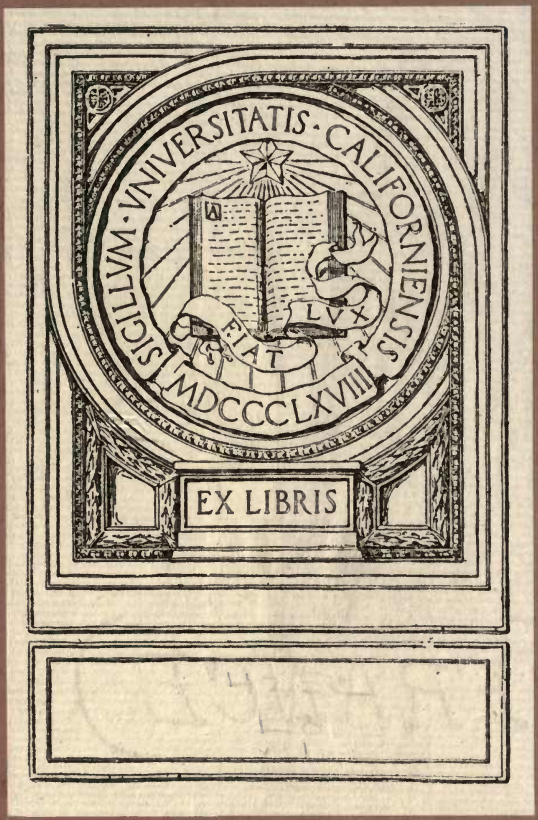
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JOURNAL

OF THE

ESSEX COUNTY

NATURAL HISTORY SOCIETY;

CONTAINING

VARIOUS COMMUNICATIONS

TO THE SOCIETY.

SALEM:

PRINTED FOR THE SOCIETY BY WM. IVES & CO.

1852.

CONTENTS.

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ESSEX COUNTY

NATURAL HISTORY SOCIETY.

VOL. I.—NO. I.

SALEM:
PRINTED FOR THE SOCIETY, BY
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M DCCC XXXVI.

AN

ADDRESS

DELIVERED BEFORE THE

ESSEX COUNTY NATURAL HISTORY SOCIETY,

ON ITS

SECOND ANNIVERSARY,

June 15, 1836.

BY JOHN LEWIS RUSSELL, A. M.,
PROFESSOR OF BOTANY AND VEGETABLE PHYSIOLOGY TO THE MASSACHUSETTS HORTICULTURAL SOCIETY, ETC.

SALEM OBSERVER PRESS.

ADDRESS.

Mr. President, and Members of the Essex County Natural History Society,—

The duty of appearing before you on this occasion, to deliver the first anniversary Address of our County Society for the promotion of the study of Natural History, I accept with pleasure. Interested in the same common object, I hail with delight the present prospect of success, and anticipate with increasing confidence our future results.

As in some proposed expedition, or private and solitary ramble in pursuit of the subjects of our study, we occasionally cast a look behind, rejoicing that we have passed the rough road,—the dusty and beaten high way—the weary hill, which intercepted our scene of enjoyment, and then gaze with admiration on the extended prospect, and smiling landscape before us—or quietly sitting down for a while, consider what we may yet gain and what new pleasure awaits, so in the present success and future prospects of this Society, we must congratulate ourselves, on what has been done and be stimulated to effect still more. Engaged with a sympathetic and fraternal feeling in the same studies, though in different departments,

according to different inclinations or taste, we have assembled on the second anniversary under auspicious and interesting circumstances.

It was during the year of 1833 that some unusual attention to the pursuit of Natural Science seemed to agitate the minds of several of our citizens. Aided by the kind suggestions and assistance of others in our neighborhood, who were well known as decided friends to our cause, a train of circumstances was laid, which resulted in the organization of the present Society, just before the close of that year, on the eighteenth day of December.

On the sixteenth day of April, 1834, the Society held a meeting in Topsfield, at which was a considerable attendance of the friends of Natural History, from the vicinity. Several plates of Audubon's magnificent work on the Birds of America, were exhibited, besides many prepared specimens. The season, the weather, the day were auspicious. It seemed as if Nature herself was smiling on our prospects, and inviting us to her study and acquaintance. The fields and meadows had assumed a livery of beauty, the feathered choristers of heaven were filling the air with harmony—the early vernal and delicate flowers of the lovely Hepatica, and pure Sanguinaria, were blooming under our feet, or assisted to adorn our tables, and add to our delight.

By the liberality of one of our Vice Presidents* the Society was generously presented with a loan of all the then published engravings, of our American Ornithologist,† for public exhibition, to aid its funds.

* William Oakes, Ipswich. † J. J. Audubon.

From the middle of May following, for a few weeks, they were opened to the public of this city and vicinity. Donations of value, in every department of study, were received. It was about this time that horticulture and floriculture, the junior and accompanying arts of natural scientific knowledge, were permitted to lend their aid. Fifteen weekly exhibitions of whatever was rare and beautiful from the gardens of the citizens, were held, during the rest of the season. Public curiosity and regard seemed awakened in our favor. On the opening of the next year, arrangements were made for the continuance of such floral displays. By the kindness of our floricultural friends, our flower stands were rendered highly attractive and splendidly conspicuous. Amid the various representatives of the kingdoms of Nature, were the choice productions of human ingenuity co-operating with her in their mutual employments. The gorgeous Dahlia, the ever charming, lovely Rose, the rich and variegated Tulip, and other prominent individuals of the Liliaceous family, were blended in unison with the simpler, yet elegant flower of our native fields. The splendid Magnolias of China vied with the fragrant and graceful co-species* of our own neighborhood. The delicious productions of Pomona, were contrasted with the more mild and humble offerings of Tellus and Ceres.

The commencement of the present year finds us in the spacious and commodious halls, which we now occupy, furnished with elegant and useful cabinets

* The most northern limits of the only species of the White Bay or Small Magnolia (*M. Glauca*) found in New England, are the swamps of Cape Ann.

and valuable specimens. During the last session of the Legislature, we have become an incorporated body.

Among several other specimens of the higher order of animated beings, we have in our possession that curious and anomalous inhabitant of New South Wales, the *Ornithorhynchus paradoxus.* BLUMENB.

Sixty specimens of birds, mostly native, with a corresponding suite of nests and eggs occupy their proper station.

Rare and elegant species of Testudines; foreign and native Reptilia; the commencement of a fine cabinet of Conchology, and another of Mineralogy; the rich foreign, with the more humble native species of the insect world, and the prepared treasures of the vegetable kingdom, may be found in their several compartments. Comparative anatomy has not been unoccupied in its curious researches; and the Library, consisting of an hundred volumes of elementary and higher appropriate reading, is furnished with a prospective view of usefulness.

Thus in the brief space of scarcely more than two years, a Society, extensive in numbers and embracing in its precincts a large and flourishing County, has risen from the united and zealous endeavors of a few individuals, to its present condition. Without a specimen of any kind, destitute of a single work on Natural Science, with no endowment or pecuniary aid at that time; and now, with an increasing list of members, our shelves and cabinets enriched with valuable acquisitions and a spur given to a more general taste for such studies. We owe much to the kindness of our friends for our rarer and valuable foreign

specimens, some of which are seldom to be found in the collections of older Societies. We hope still, to merit such tokens of their interest in our behalf and in the general cause of science. A casual glance at our cabinets, will however, convince the observer, that while foreign seas and climates have contributed to our acquired treasures, the no less interesting though more neglected department of Nature at home, have not been disregarded. This is as it should be. The primary design of a Society like our's is the intention to direct the mind of every lover of science and truth, to a study of those glorious objects of Creation, which are every where around and about him. How many are those, whose wayward and idle curiosity is unduly awakened to the merest insignificance of misspent human industry, and totally blind to the unsurpassed, unrivalled workmanship of Nature's plastic hand. How many too, with listless and indifferent eye, can pass over and heedlessly tread down the gorgeous flower of their native fields—and yet gaze with pretended admiration at some frail production of a more distant clime! What curiosity is awakened at the meanest shell, or the smallest fragment of animated nature from distant countries, while far more curious and wonderful objects are cast up by every returning wave on the neighboring seacoast, or may be gathered on the smooth and pebbly margin of many a broad and extended lake, or the sedgy border of some crystal pond! What inestimable value does a shapeless and rude fragment of some utensil of semibarbarous nations, a handful of dust from the site of some overthrown and almost forgotten city, the most useless

and veriest insignificant substance of ancient art and of ancient pride possess, while the never changing, imperishable, ever eloquent, constantly useful, and always instructive types and originals of Creation's first Existence are overlooked and despised! These tell of the majesty and excellence, the deep thrilling, instructive voice of Nature, to the reflecting and thinking mind; those—that individuals of our own species, once lived—and died—and passed away into comparative oblivion. These unfold to us leaf after leaf, of those constantly instructive pages, which are written on the heavens and engraven on the earth,—while those only assure us, that the same operations of the natural world are every where the same in mode and effect. These exhibit to our admiring eye, the inimitable perfection of Creative Power,—and those, only the extent of human industry and skill.

It is with pleasure then, that we perceive the efforts and studies of our Society principally directed to the natural productions of our own immediate vicinity, though by no means regardless of other and more distant. Perhaps few are aware, how wide is the field, not only of observation, but of actual discovery immediately around them. If the more obvious may be already familiar, the patient and curious eye, and the constant untiring observation, is rewarded in some unexpected manner. Apart from the pleasure and value of a general knowledge of any branch of science, which the labor and ingenuity, the research and talent, of others may have prepared for any one's more ready acquisition,—such is the amazing extent of inquiry, which can constantly employ the mind, such the mys-

teries of the laws of organic matter,—it were scarcely possible, that some new and hitherto unobserved truth should not be unfolded. Hasty and casual observation is led to suppose that little remains to be accomplished after the labors of some devoted and eminent student in a particular department of research; but it needs only a more familiar acquaintance with the subject to expose the error. With what fidelity and almost veneration have the grossest and most anomalous mistakes been cherished and maintained in the very opposition to reason and observation! Natural Science in common with every other branch of human knowledge is yet, too much indebted to the dulness and obstinacy, the theories rather than practical experiments of its advocates and disciples, for the most palpable errors. The pages of misnamed treatises on the subject, are too often burdened with idle speculations on idle themes. It becomes us then particularly, not to err on such grounds, preferring rather a single correct and personal observation to a multitude of fictitious, though recorded, opinions.

The pursuit of Natural History is in this point of view, entirely in the power and at the option of every one. Well would it be, were the first and oftentimes feeble efforts,—feeble, because unaided and unsupported by the sympathy of kindred spirits,—of many a curious observer of Nature rendered available and of utility to himself and others. But the existence of the present circumstances may be in a great measure attributed to the popular system of education and mode of thinking. The almost intuitive love for, and admiration in such studies, with the young, by some

sad and lamentable error is discouraged and frustrated. It requires a strong and unconquerable predilection, an independence of action, or fortuitous and prosperous circumstances, for one to become a Naturalist. The sneer of the unthinking, the "world's dread laugh," the fear of singularity has deadened and extinguished many a bright spark of genius and talent for such studies, which fostered and cherished, might have served to illume and enlighten and benefit a more or less extended sphere. One of the most prominent objects of this Society was to render an essential service to the cause of science by extending that sympathy to such enterprises, which they so much need, and to promote a more general attention to the importance of the subject, especially among the friends of education, throughout the County. It is hoped, that to a certain extent, its success has proved the wisdom of the scheme, and we could wish that the zeal and spirit manifested throughout the sphere of its operations might be multiplied and increased.

The common observation that a pursuit of Natural History is rendered difficult and tedious through the technicalities of science, is neither founded in truth nor is the result of observation and experience. The nomenclature to every branch of human knowledge is necessarily more or less difficult to acquire and understand. The Natural sciences are no more singular in this respect than other sciences or arts. A slight acquaintance with philology enables any one to acquire all that is needful in the perception and comprehension of scientific terms. Nor is even this necessary, though desirable. Nature is not read in books and systems,

but from her own productions. An ardent admirer of her operations, an observer of her phenomena, a student of her mysteries, in fine, a genuine naturalist,—one of practical observation, and of sound, solid knowledge may seldom or never have occasion to consult other than

> "books in the running brooks,
> "Sermons in stones and good in every thing."

The pleasing volume of the "Natural History of Selborne" has long held its character of general interest and value, and displays the results of attentive observation with slight materials of operation and apparently limited means of acquiring scientific truth. Still later, the deservedly popular work of the delightful "Journal of a Naturalist," confirms us in our assertion, that the technicalities of science, are neither absolutely necessary to its study, nor serious objections to its pursuit. Scarcely a subject is there to be found—from the gigantic oak of centuries' duration, and monarch of the hills, to the elegant and fugacious mushroom of a few hours existence—from the extensive operations of agriculture to the minute detail of its younger sister, horticulture ;—quadruped, bird, insect,—their admirable economy and unsurpassed beauty,—falling under the cognizance of a limited field of observation, which is not rendered in these fascinating pages the instance of some interesting consideration. Who in reading the simple and inartificial description of Audubon on the feathered denizens of our Western world, and has marked the enthusiasm, which infancy exhibited, and matured years have not served to diminish ; has been led to

suppose that other than practical, individual observation and a genuine love for his pursuits could have enabled him to present to the admiring world a specimen of his genius and industry. How many, who have read his "Biography of the Birds of America," cast a glance at or for a moment think of the accompanying and purely scientific descriptions. They forget in the admiration of the naturalist, the precision of his favorite science. Who, that peruses the no less artless and beautiful essays on the same subject in the works of Alexander Wilson, would fain persuade himself, that the pioneer of American Ornithology was an humble individual of ordinary talent and acquirements, and that by industry, perseverance, indomitable zeal, and sincere love of his early predilections, he claimed the meed of fame awarded him.

But while in this manner, endeavoring to justify and promote a general study of Natural History, by showing the facility of its pursuit; still we do not wish to depreciate the great value of system and order. Could we remove the supposed difficulty, which deters many from attempting to acquaint themselves with the subject, the result is not to be feared. That, is not only a truly beneficent plan of Providence, but in its extended operations constitutes a glorious feature in the human character, which induces a farther search and constantly increasing desire for knowledge, from the pleasure and benefit arising from that already acquired. On studies so extensive, I may almost say, illimitable, the mind never can have a moment for cessation to its improvement. Ten years of de-

voted study to the minute and microscopic infusorial animals, enabled Ehrenberg to discover the most wonderful and surprising features in the external and internal anatomy of their systems. Imperceptible to the unaided vision, yet peopling with myriads the liquid drop of water and inhabiting almost every form of matter, we were ignorant of the extent of their active being, until the microscope revealed both their existence and economy. With motions as rapid as thought, limbs of the most exquisite form and proportions anomalous to every other body, which we see around us, they possess all the necessary functions of animated beings and astonish us with the complicated harmony of their structure.* In the examination of a single insect, Lyonnet employed several years, and yet left for farther research, much to complete the history of that single individual species, in the larva of the *Cossus ligniperda.* Fabr: he counted above 4000 muscular bands, precisely adapted to the performance of the required effects. To support life and perform all the functions necessary to an insect not exceeding an inch in length M. Straus enumerated 872 organs, composed of tracheæ, muscles, nerves and scale-like plates: "a spectacle," says Cuvier, "altogether transporting by its delicacy and regularity. Even to the fine assortments of its colors, every thing seems as if made on purpose to please the eye of man, which now perhaps looked upon it for the first

* Ehrenberg has proved the existence of Monads, which are not larger than the 24,000th of an inch. He computes that 500,000,000 of these microscopic animals may be contained in the space of a single drop of water;—a number equalling the amount of human beings existing on the surface of the globe. *Roget's Bridgewater Treatise.* Vol. 1. *Introduction* p. 25.

time since the creation."* A short life, whose whole extent was only thirty-one years, enabled Bichat to give that impulse to animal physiology and anatomy, which is felt at the present day, and opened a wide field for extended and eminently useful investigations: while the prolonged life of the Father of Natural History, though diligently employed, served only to leave behind the rudiments of a "System of Nature" which would require ages to perfect. The patient researches of the illustrious Cuvier, on one single subject, have restored to form and symmetry the original inhabitants of a former world, whose mighty relics are scattered in profusion over the earth's surface, and given us ideas of the vastness of Creative Power and the astonishing results of human industry with mental application:—while the no less interesting studies of Brongniart are presenting to our mind's eye and actual observation, the gigantic flora of those ages, which bore in luxuriant exuberance the mighty prototypes of our now more humble and pigmy vegetable forms.† Half a century of constant experiment unbaffled and undismayed by repeated and severe misfortunes, enabled the Belgian horticulturist, the distinguished Van Mons, amidst the more imperative duties of his profession to establish important facts in vegetable

* Rapport sur l'Histoire Naturelle. Jardine's Naturalist's Library. *Entomology*—Vol. II. p. 72.

† "Some of the fossil ferns are so similar to those now growing on the surface of the earth, that no doubt is entertained, that they are generically the same; this is the case especially with the Equiseta.—Some of the fossil Selaginales are very similar to the Lycopodia of the present day, such as *Lycopodites falcatus*, which is an oolitic fossil. But the most numerous and remarkable Lycopodial remains, are those gigantic fossils called *Lepidodendra* and *Ulodendra*, some fragments of which measure nearly fifty feet in length!"—*Burnet's Introd. to Botany*, Vol. I. pp. 339-341.

physiology, the benefits of whose results not only Europe, but this country now enjoys.

The manifest enthusiasm and devotion, which we see exhibited in these instances are neither rare nor singular. And it may be safely asserted, that a similar, if not so intense attention, would be awakened in every one who willingly entered the field of study. The very results of such pursuits produce that desideratum, which at first was thought indispensable. Analysis, observation, experiment and actual demonstration, all essential to success, render the perception and adoption of system and nomenclature gradually easy of comprehension.

It were hardly necessary for me in this place and on this occasion to expatiate on the reasons for an attention to Natural Science, or point out the benefits arising from its pursuit. In a community like ours, in which an attention to Agriculture as well as to Commerce is so extensive, and the spirit of sound practice with judicious theory adopted, the natural advantages of some acquaintance with other, and not immediate, though still connected subjects, must be apparent. Permit me therefore to congratulate you on the sympathy, which we have received from the aid and mutual assistance of individuals, engaged and practical in such employments—employments the first, greatest and most important of civilized life—whose names are enrolled on our records and whose talents and devotion to the studies of their choice are known and acknowledged. We trust that their influence in co-operation with our own will be yet more widely felt, in giving a new impulse to the success and prosperity of Agricultu-

ral knowledge—that the laws which govern the materials, which are rendered subservient to the supply of our wants and every relative acquirement, which places the very elements in our power and promises a certainty of success may be understood and comprehended ; while the errors and prejudices which have heretofore retarded its progress shall be banished and destroyed.

We hail with unfeigned pleasure the prospects of the Society from a similar manifestation of interest in its welfare among the artists and mechanics of this city and county, confident that mutual benefits will accrue.

Ever forward in the cause of good, the ladies have engaged in our behalf with a spirit, which seems to augur well for our success. The names of several of our city, who are known as general patrons and students of Natural Science, we are gratified to say are already enrolled on our list of members. We would cordially and respectfully welcome others in following so laudable an example. In Botany, a study peculiarly appropriate to the developement of refined sentiments of innate purity and loveliness of character, we find many admirers. The herbarium of the Society is the result, in a considerable degree, of the kindness of one. Valuable and rare shells enrich the drawers of its Cabinet from the liberality of others. Several private collections in that elegant and delightful department Conchology, remarkable for extent and worth, in the possession of many in this city, are sufficient proofs that Natural History has lost nothing of its charms and merits, nor has been overlooked in our

community. Unable to possess all that knowledge with the molluscous tribes of the watery deep, which we could wish, the study and taste, which prompts to an intimate acquaintance with their singularly fabricated habitations speaks of the delight experienced in any contemplation of Nature. The topics for inquiry, which the fragile shell of some production of the waters may call forth, the elegance and symmetry of form and proportion, the richness of coloring, mocking even the rainbow's tints, the value to mankind as an article of luxury or use, the perfection and adaptation of means to the end—are but a few arguments in favor of so rational and so refined a taste. Circumstances of the greatest importance, facts of the most serious moment, may be indebted to this single branch of knowledge. The minutiæ of Nature are truths in themselves, each important in the great scheme. The adventurous exploits of the little and fearless voyager in its pellucid and pearly bark, engaged the attention of the earliest Naturalist, and to this day, though speeding with outstretched sail and pendent oars over the ocean's surface, its real economy and habits are by no means ascertained.

Thus the whole history of the lower animals and of organized matter is but a constant and tangible witness of our own ignorance. With a perception and foresight peculiar to each, the very operations, which years of the most patient industry and the concentrated efforts of ingenuity can only effect, have been from the first executed in perfection, unperceived. The pensile nests of several species of birds exhibit a facility of interweaving various and heterogeneous substances in

a manner almost inexplicable. The curious nest of the Bengal grosbeak, the actually sewed cradle of the tailor bird, of India, *(Sylvia sutoria,)* the beautiful intertwined and grassy nest of the tiny marsh wren of our neighboring swamps (*Troglodytes brevirostris.* NUTT.) the woven and strong pouch-like nest of the vivid and splendid golden robin, *(Icterus baltimore.* BONAP.*)* and the yet more singular texture of the orchard orioles *(Icterus spurius.* BONAP.*)* are striking instances. The workmanship of the loom is naught in comparison with the ingenuity of the cunning and active spider—and while for centuries the treasures of intellect and mind were committed to various substances of inferior value, for general diffusion, the ingenious wasp, was hourly fabricating its elegant nest, with the now universally used and almost indispensable article of paper, which has superseded all else.* With a precision unparalled and undeviating the bee (*Apis Mellifica.* L.) whose history is only coeval with man, solved at each repeated construction of its cell, the problem, which required the skill of a mathematician, aided by the infinitesimal calculus to prove. The tissue and internal structure of vegetables† outrival the curious and costly productions of art, and the gorgeous and magnificent vesture of the "lilies of the field," furnished in Holy Writ, a striking and persuasive argument in the support of divine truth.‡

* *Polistes Nidulans* of Cayenne, constructs a nest of genuine paste board, and several American species of Vespa and Crabro, use paper of their own fabrication, in the construction of their cells and nests.

† The lace tree of the West Indies, (*Lagetta lintearia*) furnishes from its inner bark a beautiful substitute for lace.

‡ Matthew vi. 28 29.

And this communion with Nature! what more conducive of good and greater source of pleasure and instruction? Is it not well to steal away from the too absorbing cares of the busy world, to lay aside for a few moments the assiduous devotion to its interests, to quench the fever of excitement and passion in the calm and grand repose of her studies? What the very end and pursuit of life, but that course, which affords present, solid and satisfactory good and promises future benefit? In a scene second only to that primeval condition of the progenitors of the human race, where magnificence, beauty, order, loveliness, harmony and peace are all displayed, we seem to be invited and allured by every object of sense and feature of excellence, to commune with higher, nobler, better things than those of earth. It is the intercourse of spirit with Spirit. The Creator is yet holding converse with His creatures through the medium of His works. In the first vernal motion of returning vital energy in the humblest moss, as in the majestic structure of the mightiest vegetable form, whose duration is coeval* with the present appearance of the earth,—in the gauze-like wings of the minutest fly, which dances in the bright sunbeam, with all the pleasure of simple existence, as in the noble economy of the gigantic quadruped,—in the comminuted particle of dust, as in the lofty mountains, which rise, in silent, solitary and barren grandeur over the plains, there is the same common voice of welcome and the

* Individuals of *Adansonia*, of the Natural order Bombaceæ, are the largest trees known; their age has been computed at from 5 to 6000 years, which though probably an erroneous calculation, yet they may be, as. Humboldt conjectures, some of the "oldest organic monuments of our planet."

same common language of instruction. In studies so extensive and pursuits so glorious, who can become an unprofitable learner! No place so solitary, no spot so desolate, no circumstance in life so devoid of interest, but could furnish a solemn and important lesson of truth.

Such then are the subjects of our mutual studies, such their extent and such their salutary influence. It remains for us in our endeavors as a Society to pursue them with that attention, which gives the conviction of our delight in them. May the happy efforts towards the advancement of a more general taste for such subjects, which are so far crowned with success, be yet increased, that collections from every department of the Natural world may add to the value of our labors, and our halls still afford an occasional resort for an enlightened community, where the grace and loveliness of Nature shall minister to the refinement and elegance of society.

Peace to the ashes, and deep respect to the memory of that venerable and learned man,* who has so lately departed from the scene of his favorite studies and extensive usefulness. Although devoted to the interests of Natural Philosophy, he was by no means unmindful or inattentive to those of Natural History. We remember, for how can we forget, his occasional presence in our halls and at our floral exhibitions; and many there are, who have enjoyed his liberality in the use of the rarer and splendid works from his Library, or listened with delight to his instructive

* Rev. John Prince, LL.D.

conversation. His life is an exemplification of the influence of such pursuits as our's, on the heart and mind.

In conclusion let me add, that much remains to be accomplished in every department of science under our immediate cognizance. The flora of this County contains many beautiful and elegant productions. A full and perfect herbarium is essential to our Cabinet. An attention to the cryptogamous plants will interest many, who hitherto may have overlooked them. Of diminutive size and of humble rank in the order of vegetable forms, their real beauty and inimitable perfections are imperceptible without minute study and examination. Assisted by the microscope we are astonished and delighted with their wonderful and unique economy. Composing a vast group of an extensive variety of forms, they are scattered over the earth's surface, with a profusion equal only to the benefits which they confer in the great operations of existence.

Those rarer phænogamous plants too, which the research of the respected President of this Society has heretofore discovered in our immediate vicinity, should prompt others to a similar spirit in each section of the county. The peculiar beauty and value of the dried specimens of another, who is also well known as an accomplished botanist, will serve as models of our own. Our Entomology demands particular attention. The members of the Society will confer a great service to the general cause, by transmitting at the end of each season, collections of every species of insect which falls under their observation.

In fine, let an enthusiasm and laudable taste for the contemplation of the natural world be cherished and cultivated by every member, and our united labors in so good and glorious a pursuit must and will insure the prosperity of the ESSEX COUNTY NATURAL HISTORY SOCIETY.

[NOTE.—There have been also two exhibitions of Fruits and Flowers at Bradford, under the direction of the Society,—one in September, 1834, the other in September, 1835;—both of them were very fully attended, and excited much interest in the cause of science.]

ERRATA.—On page 11th, 16th line, for misnamed read misnomered.
" " 18th " for idle themes read idler themes.

Commonwealth of Massachusetts.

In the year of our Lord one thousand eight hundred and thirty six.

AN ACT

To incorporate the Essex County Natural History Society.

BE *it enacted by the Senate and House of Representatives in General Court assembled and by the authority of the same*, That ANDREW NICHOLS, WILLIAM OAKES, and WILLIAM PRESCOTT, and their associates, are hereby made a Corporation by the name of the ESSEX COUNTY NATURAL HISTORY SOCIETY, for the purpose of promoting the Science of Natural History with all the powers and privileges and subject to all the liabilities contained in the forty fourth chapter of the Revised Statutes of this Commonwealth "passed on the fourth day of November in the year one thousand eight hundred and thirty five," and for the purpose aforesaid may hold real estate to the amount of ten thousand dollars, and personal estate, exclusive of the books, papers and articles in the cabinet of said Society to the amount of twenty thousand dollars.

House of Representatives Feb. 11, 1836—*Passed to be enacted.*

JULIUS ROCKWELL, *Speaker.*

In Senate, Feb. 12, 1836—*Passed to be enacted.*

HORACE MANN, *President.*

COUNCIL CHAMBER, 12th Feb. 1836.—Approved.

EDWARD EVERETT.

A true copy—attest.

JOHN P. BIGELOW, *Secretary.*

CONSTITUTION.

ARTICLE I.

THE Society shall be called the "ESSEX COUNTY NATURAL HISTORY SOCIETY. It shall consist of two classes of members, Resident and Corresponding; Resident Members, such as reside in the County of Essex; Corresponding Members, such as reside elsewhere.

ARTICLE II.

ANY person may become a Member of this Society by signing the Constitution and paying the annual assessment; or may become a life member,—exempt of all assessments, by the payment of twenty dollars.

ARTICLE III.

CORRESPONDING Members, shall be chosen by ballot, after having been nominated at a meeting previous to that on which the ballot is taken; the votes of two thirds of the members present shall be requisite for an election.

ARTICLE IV.

THE annual assessment of each member shall be two dollars; and no resident member, who shall be in arrears for one year, shall be entitled to vote or be eligible to any office in the Society.

ARTICLE V.

MEMBERS may be expelled from this Society by a vote of three fourths of the members present at the annual meeting.

ARTICLE VI.

THE Officers of this Society shall be a *President*, two *Vice Presidents*, *Secretary*, who shall also act as *Treasurer*, a *Librarian* and *Cabinet Keeper*.

It shall be the duty of the PRESIDENT, and in his absence of one of the VICE PRESIDENTS, to preside in all the meetings of the Society and Curators, to call meetings of the Curators and Special Meetings of the Society, by the advice of the Curators.

It shall be the duty of the SECRETARY to attend the meetings of the Society and Curators and record their proceedings; to keep on file all letters and papers respecting the Society and to manage the correspondence of the Society under the direction of the Curators; to keep copies of all letters written for the Society in a book provided for that purpose; to receive and pay all monies subject to the order of the Curators.

It shall be the duty of the LIBRARIAN and CABINET KEEPER to receive and have in his custody all specimens, books, papers, &c. of the Society, which he shall arrange in classes and register in a book with a proper description of each article, the donor's name, when the same shall be a present, time when received, also to acknowledge all donations whatsoever in such a way as the curators may direct.

ARTICLE VII.

THE President, Vice Presidents, Secretary and Cabinet Keeper, ex officio, with four others chosen by the Society shall be the CURATORS. They shall direct the Secretary and Cabinet Keeper in the performance of their respective duties; present to the Society such by-laws and regulations as shall be thought expedient, and manage the finance of the Society subject to the direction of the Society.

ARTICLE VIII.

THE Officers and Curators shall be chosen at the annual meeting by ballot.

ARTICLE IX.

THE Annual Meeting shall be on the third Wednesday in June.

ARTICLE X.

This Constitution may be altered by a vote of three-fourths of the members present at any regular meeting of the Society; the intended alterations being submitted at any two previous meetings.

BY-LAWS.

Chapter I. *Of Members.*

Resident members only shall be entitled to vote or be eligible to any office.

A resident member on removing from this County may become a corresponding member on giving notice thereof and paying all arrears; and a corresponding member who shall hereafter reside within this county shall become a resident member.

No resident member, who shall be in arrears for one year, shall be entitled to vote or be eligible to any office; and if any one so in arrears shall refuse or neglect to liquidate his dues within six months after being duly notified, he shall cease to be a member of the Society.

The yearly assessment is payable at the annual meeting in June.

Chapter II. *Of Officers and Curators.*

The President and in his absence one of the Vice Presidents, shall preside in all meetings and regulate the order thereof. He shall have a casting vote when there is an equal division amongst the members.

The Secretary shall be present at all meetings and record the proceedings; read all communications made to him

in his official capacity; notify all corresponding members of their election; also all officers when the same shall not be present at their election, and notify all meetings.

As TREASURER he shall receive all dues to the Society and pay all debts after they have been approved by the Curators: he shall keep an exact account of all receipts and expenditures, and report the same at the annual meeting.

The CURATORS shall hold meetings for the transaction of business as often as once a month, at such times and places as may be most convenient: four members shall constitute a quorum.

CHAPTER III. *Of Committees.*

THE following STANDING COMMITTEES, viz: on *Mammalia; Aves; Reptilia* and *Pisces; Mollusca* and *Radiata* (native;) *Mollusca* and *Radiata* (foreign;) *Articulata; Comparative Anatomy; Botany;* and *Mineralogy* and *Geology;*—shall be chosen at the annual meeting. It shall be the duty of these Committees to assist the Cabinet Keeper in the arranging and preserving the specimens of Natural History in their respective departments, and to report at the annual meeting in June the state of their respective collections;—they shall alone be authorized to select duplicate specimens and make exchanges.

CHAPTER IV. *Of the Cabinet.*

ALL donations shall have the donor's name affixed thereto.

No cabinet specimen in Natural History shall be removed from the rooms of the Society without the consent of a major part of the Curators.

All donations shall be referred to Committees to report thereon as soon as possible.

CHAPTER V. *Of the Library.*

THE Library to be under the control of the Curators.

No book to be purchased except by the written consent of a major part of the Curators.

The Curators, for sufficient reason, may withhold any book from circulation, such books being marked in the catalogue and also on the cover "not to circulate." The Librarian shall insert in a book provided for that purpose the names of the borrowers, the time when taken out and when returned.

Each member shall be entitled to take from the Library, one folio or one quarto, or two volumes of any lesser fold, at one time; separate volumes of plates, to accompany the text as a part of the same, may be delivered in addition.

No person shall lend any book belonging to the Society, excepting, to a member, entitled to take out, under a penalty of one dollar, for every offence.

If any book is damaged or lost, the person for whose use it was taken out, shall make good such damage or loss as the curators may determine.

The Curators may on special occasions, permit any person not a member of the Society to use the books belonging to the Library, under such restrictions as they may think proper.

The members of the Society residing in the city of Salem or in the towns of Beverly or Danvers, shall not detain any book longer than two weeks, under a penalty of twenty-five cents per week. Members resident in the more distant towns of the county, shall not detain any book longer than four weeks, under the same penalty.

If any member of the Society, not resident in the city of Salem or either of the towns of Beverly or Danvers, should wish to obtain the use of a book or books, then in the hands of some other member of the Society not resident in either of the aforesaid places, that member may receive such book or books from the other member, on condition that both parties notify the Librarian by letter (post paid.) Non-

compliance with this condition, shall subject the member, who received the book or books direct from the Library, to the usual fine. In all cases of loss or damage the original receiver shall be held responsible to the Curators; and should any demur or difficulty arise, the parties shall settle it between themselves, responsibility always attaching to the first receiver of the books.

On the Wednesday preceding the annual Meeting all books shall be called in, and the Curators shall examine the Library. They shall note all missing books, the state of the Library and report the same at the annual meeting.

Chapter VI. *Of Meetings.*

The ordinary Meetings of the Society shall be held on the third Wednesday of every month, at 3 o'clock, P. M.

Visitors may be introduced by any member.

The annual and all special meetings of the Society shall be notified by circulars, signed by the Secretary, and sent to each member, at least six days before said meeting.

OFFICERS OF THE SOCIETY.

Elected Dec. 18, 1833.

PRESIDENT.

ANDREW NICHOLS, of Danvers.

VICE-PRESIDENTS.

WM. OAKES, of Ipswich, GARDNER B. PERRY, of Bradford.

SECRETARY AND TREASURER.

JOHN M. IVES, Salem.

LIBRARIAN AND CABINET KEEPER.

JOHN LEWIS RUSSELL, Salem.

CURATORS.

WM. OAKES, Ipswich. THOMAS SPENCER, Salem.
JOHN C. LEE, Salem. CHARLES G. PAGE, Salem.

Elected June 17, 1835.

PRESIDENT.

ANDREW NICHOLS, of Danvers.

VICE-PRESIDENTS.

WILLIAM OAKES, Ipswich. GARDNER B. PERRY, Bradford.

SECRETARY AND TREASURER.

HENRY WHEATLAND, Salem.

LIBRARIAN AND CABINET KEEPER.

WILLIAM P. RICHARDSON, Salem.

CURATORS.

JOHN C. LEE, Salem. JOHN M. IVES, Salem.
WM. PRESCOTT, Lynn. CHAS. G. PAGE, Salem.

Elected June 15, 1836.

PRESIDENT.

ANDREW NICHOLS, Danvers.

VICE-PRESIDENTS.

WM. OAKES, Ipswich. GARDNER B. PERRY, Bradford.

SECRETARY and TREASURER

HENRY WHEATLAND, Salem.

LIBRARIAN and CABINET KEEPER

WILLIAM P. RICHARDSON, Salem.

CURATORS

JOHN C. LEE, Salem, JOHN M. IVES, Salem,
WM. PRESCOTT, Lynn, CHAS. G. PAGE, Salem.

CATALOGUE

OF

THE LIBRARY,

OF THE

ESSEX COUNTY NATURAL HISTORY SOCIETY.

---

1. Academy of Natural Sciences of Philadelphia, Journal of, 8vo, 6 vols. and part 1st of vol. 7th. Philadelphia, from 1817.

2. Audubon, J. J., Ornithological Biography, roy. 8vo, vols. 1 and 2. Philadelphia 1832, and Boston 1835.

3. Bakewell Robert, an introduction to Geology, (2d American from the 4th London edition, edited by B. Silliman,) 1 vol. 8vo. New Haven, 1833.

*4. Bigelow Jacob, Florula Bostoniensis, 1 vol. 8vo. Boston, 1824.

5. Boston Journal of Philosophy and the Arts, 3 vols 8vo. Boston, from 1823 to 1826.

6. Boston Society of Natural History, Transactions of, Nos. 1, 2 and 3, of part 1, 8vo. Boston.

7. Brewster's David, New Edinburgh Encyclopædia, 31 Nos. 4to. Philadelphia.

*8. Brown Thos., Zoologist's text book, 2 vols 16 mo. Glasgow, 1832.

9. Cabinet of Natural History and Rural Sports, 2 vols 4to. Philadelphia, from 1830 to 1832.

10. Cuvier G., Animal Kingdom, (translated and abridged by H. M'Murtrie) 1 vol. 8vo. New York, 1832.

*11. ——— Animal Kingdom, with supplementary additions by E. Griffith, Class Reptilia, 1 vol. 8vo. London, 1831.

*12. ——— Animal Kingdom, with supplementary additions by E. Griffith, Class Insecta, 2 vols. 8vo. London, 1832.

13. Dana J. F. & S. L., Outlines of the Mineralogy and Geology of Boston and its vicinity, 1 vol. 8vo. Boston, 1818.

14. De Candolle A. P., Theorie Elementaire de la Botanique, 1 vol. 8vo. Paris, 1819.

15. De la Beche H. J. Application of Geology to the useful purposes of life, (republished from his late work, by the N. Y. Lyc. Nat. His.) 8vo., pp. 22. New York, 1836.

16. Elliott Stephen, a Sketch of the Botany of South Carolina and Georgia, 2 vols. 8vo. Charleston, S. C. 1821.

* Books thus marked are not to circulate.

17. Essex Agricultural Society, Transactions of, vol. 1, and 5 Nos. of vol. 2. Salem, from 1818.

18. Fairholme George, a general view of the Geology of Scripture, 1 vol. 12 mo. Philadelphia, 1833.

19. Godman John D., American Natural History, 3 vols. 8vo. Philadelphia, 1831.

20. Hildreth C. T., case of Notencephale, 8vo. pp. 16. Boston, 1831.

21. Hitchcock Edward, Report of the Geology, Mineralogy, Botany and Zoology of Massachusetts, (1st ed.) 1 vol. 8vo. with plates. Amherst, 1833.

*22. The same (2d edition.) Amherst, 1835.

23. Humboldt Alex. de, De distributione Geographica Plantarum, 1 vol. 8vo. Paris, 1817.

24. Imperial Mineralogical Society of St. Petersburg, Transactions of, roy. 8vo. vol. 1, with plates. St. Petersburg, 1830.

25. Insects, Natural History of, (compiled from Swammerdam, Brookes, &c.) 1 vol. 8vo. Perth, 1792.

26. Jay John C., Private Catalogue of Shells, Aug. 1st, 1835, 12mo. pp. 55. New-York, 1835.

27. ———Another copy.

28. Kirby and Spence, Introduction to Entomology, 4 vols. 8vo. London, 1828.

29. L'Etablissement Geographique de Bruxelles, Lettre sur, 16mo. pp. 49. Bruxelles, 1836.

30. ——— Ouvrages Publiee, 16mo. pp. 20. Bruxelles, 1836.

31. Lindley John, Introduction to the Natural System of Botany (1st Am. ed. with an Appendix by J. Torrey) 1 vol. 8vo. New-York, 1831.

32. Lyceum of Natural History of New-York, Annals, vols. 1 and 2, and Nos. 1 and 2 of vol. 3. New-York, from 1817.

33. ——— Charter, Constitution and Bye-Laws, 8vo. pp. 24. New-York, 1835.

34. ——— duplicate of the same.

35. Lyell Charles, Principles of Geology, [4th ed.] 12mo. 4 vols. London, 1835.

36. Mawe J., Voyager's Companion and Shell-Collector's Pilot, &c. &c. 1 vol. 18mo. London, 1825.

37. Michaux F. A., North American Sylva, roy. 8vo. 3 vols. Paris, 1819.

38. Miscellany of Natural History, [vol. 1st, Parrots, by Sir J. D. Lander and Thos. Brown,] 1 vol. 12mo. Edinburgh, 1833.

39. Mohs Frederick, Treatise on Mineralogy, translated from the German by Wm. Hardinger, 3 vols. 12mo. Edinburgh, 1825.

40. Montague G., Ornithological Dictionary (Rennie's edition) 1 vol. 8vo. London, 1831.

41. Nuttall Thomas, Genera of North American Plants and Catalogue of Species to 1817, 12mo. 2 vols. Philadelphia, 1818.

42. ——— Ornithology of U. S. A. and Canada, part 1st, Land Birds, 12mo. 1 vol. Cambridge, 1832.

43. ——— Ornithology of U. S. A. and Canada, part 2d, Water Birds, 12mo. 1 vol. Boston, 1834.

*44. Practical Naturalist, Manual of, 1 vol. 16mo. Boston, 1831.

45. Pursh Frederick, Flora Americæ Septentrionalis, 8vo. 2 vols. London, 1814.

46. Riddell John L., a Synopsis of the Flora of the Western States, 8vo. pp. 116. Cincinnati, 1835.

*47. Robinson Sam'l, a Catalogue of American Minerals, with their localities, 1 vol. 8vo. Boston, 1825.

48. Russell John Lewis, a Discourse delivered before the Massachusetts Horticultural Society, Sept 17, 1835, 8vo. pp. 36. Boston 1835.

49. Say Thos., Explanation of terms used in Entomology, 8vo. 1 vol. Philadelphia.

50. Shepard C. U. Treatise on Mineralogy, 2d part consisting of descriptions of the species, &c. 12 mo. 2 vols. New Haven, 1835.

51. Silliman Benj., The American Journal of Science, 8vo. 30 vols. New Haven, from 1819.

52. Smith, J. V. C., Natural History of the fishes of Massachusetts, 1 vol. 12 mo. Boston, 1833.

53. Swainson Wm., a Preliminary Discourse on the study of Natural History, (No 59. of Lard. Cab. Cyc.) 1 vol. 12mo. London, 1834.

54. ——— A Treatise on the Geography and classification of animals, (No. 66, of Lard. Cab. Cyc.) 1 vol. 12mo. London, 1835.

55. Torrey John, Compendium of the Flora of the Northern and Middle States, 1 vol. 12mo. New York, 1826.

56. ——— Duplicate of the same.

57. Upham C. W., a Discourse at the funeral of the Rev John Prince, on the 9th of June 1836, 8vo. pp. 31. Salem, 1836.

58. Wildenow C. L., species Plantarum, 12mo. 24 vols. Berolini, 1797.

* 59. Wilson, Alex., American Ornithology, 3 vols. roy. 8vo. with 1 vol of plates, 4to. New York and Philadelphia, 1829.

60. Wright J. and Hall James, a catalogue of Plants growing without cultivation in the vicinity of Troy, 8vo. pp. 42. Troy, N. Y. 1836.

61. Zoological Society, Gardens and Menageries of, 8vo. 2 vols. Chiswick, 1831.

DONORS TO THE LIBRARY.

The numbers against the names correspond with those in the catalogue.

J. C. Lee, 3, 7, 8, 12, 31, 39, 47, 50.
William Oakes, of Ipswich, 51 from vol 11 to 20 inclusive.
Miss S. Burley, 35.
C. Cramer, of New-York city, 24, 26, 29, 30, 33, 60.
Wm. P. Richardson, 57.
B. H. Ives, 49.
John Lewis Russell, 18, 46, 48.
Mrs. A. Dunlap, 15, 27, 34.
Hilliard, Gray & Co. Boston, 42, 43.
Thomas Spencer, 40.
Henry Whipple, 25.
A. L. Peirson, 20.
Massachusetts Legislature, 21, 22.

DONATIONS

TO

THE CABINETS

OF THE

ESSEX COUNTY NATURAL HISTORY SOCIETY,

From January 1st, 1834, to September 1st, 1836.

1834.

Jan.	Skulls of Fiber Zibethicus, Mustela lutreola, and Sciurus Carolinensis.	Samuel P Fowler, Danvers.
	Rana pipiens and skulls of Larus sp. and Colymbus sp. Sorex brevicaudus.	John M. Ives.
April.	Starling, from the Falkland Islands.	Thomas Spencer.
	Falco leverianus, female & eggs—Testudo Scabra.	Abel Nichols, Danvers.
	Skeleton of Fringilla Canariensis.	John S. Appleton, Gloucester.
	Malformed claw of Astacus marinus.	John M. Ives.
	Venus mercenaria.	Andrew Nichols, Danvers.
	Helix,	Samuel P. Fowler, Danvers.
July.	Spotted Jasper, from Saugus, Mass.	Wm. Prescott, Lynn.
	Anadonta, from S. Carolina, Cypraeae, Murices, Strombi, &c.	Mrs. A. Dunlap.
	Minerals from Brunswick and Augusta, Me., & Newbury, Mass. several species of native shells.	John Lewis Russell.
	Egg of Casuarius vulgaris.	Benj. Shreve.
	Condylura cristata, var.? Mus musculus.	John Lewis Russell.
Aug.	Hirundo pelasgia--Pupae and Larvae of several Lepidoptera.	Charles G. Page.
	Falco sparvinus, adult male.	Geo. H. Devereux.
	Skull and spine of Felis cata.	Joseph Farnum, jr.
	Skeleton of Scolopax Wilsonii.	John S. Appleton, Gloucester.
	Nest of Icterus Baltimore.—Box of Native Insects.	Henry Wheatland.
	Vespertilio murinus.	Geo. Silsbee.
	Box of Coleopterous Insects—Cocoons of Bombyx mori.	Abel Nichols, Danvers.
	Vespertilio Noveboracensis.	Wm. B. Johnson.
	Do. Murinus	B. Hale Ives.

1834.

Aug.	Tantalus rubra. Rhamphastos erythrorynchus.	Stephen Driver, jr.
	Exuviæ of Gryllus sp.	Miss H. Perkins.
	Native fishes,	Geo. A. Perkins.
	Cyprinus sp.	John M. Ives.
	Falco columbarius, young male.	William Rose.
Sept.	Pagurus longicarpus-----Native shells—-Nest of Troglodytes palustris.	John Lewis Russell.
	Monoculus Polyphemus—Skull of Ovis aries var. polycerata--Skull and claws of Strix nyctea and nebulosa.	Joseph Farnum, jr.
	Shells, several sp. from Thames river, England,	Henry Wheatland.
	Sylvia Canadensis	William Peele.
	Vespertilio Noveboracensis	Miss Prince.
	Shells from Ouisconsin river and South Carolina	Mrs. Dunlap.
	Falco haliaetus, adult male	Samuel Gardner.
	Falco sparverius	Nathaniel West, 3d.
	Falco leucocephalus, young	James Brown.
	Alcedo alcyon, female	William Rose.
	Foreign shells	Mrs. Benja. Shreeve.
	Solen sp. Paludinia decisa, Cyprea caput-serpentis, &c. &c.	Mrs. J. Chadwick.
	Nest of Card-making Wasp from Cayenne	Miss P. A. Winn.
	Quartz crystals	Jas. D. Gillis.
	Spicular Iron Ore, from Elba	B. W. Crowninshield.
	Volcanic Nitres and Sulphurs, from the Mediterranean—Native Insects	Charles G. Page.
	Palmated Sponge, from Ipswich Beach, Mass.	John M. Ives.
Oct.	Minerals, from Franconia, N. H.	Horatio Robinson.
	Native Minerals, and Vertebra of a Whale	Joseph Farnum, jr.
	Turdus Wilsonii	John Henfield, jr.
	Fiber zibethicus	William Rose.
	Madrepora sp.	Miss H. S. Haskell.
	Bog Iron ore, and Lacerta sp.	Daniel P. King, Danvers.
	Insects	George A. Perkins.
	Tetraodon sp.	Francis H. Tufts.
	Exocetus volitans, and Coluber sp.	Rev. John Prince.
	Emys sp.	Henry Perley.
	Coumarouma odorata	Miss P. A. Winn.
	Fulica atra and Native Insects	Henry Wheatland.
	Foreign Minerals and Shells	John M. Ives

1834.		
Aug.	Skull of Ardea Herodias	Joseph Farnum, jr.
	Balanus sp. from S. American coast	John Lewis Russell.
	Scolopendra morsitans	George P. Farrington.
	Nest of Icterus Baltimore	Elias E. Porter, Danvers.
	Mustela lutreola	——— Shatswell.
	Crystallized Quartz	Francis Cummins.
	Capsules of Capsicum baccatum, and skin of Dasypus tricinctus	Charles H. Fabens.
	Sturnus prædatorius	Moses Horne, jr. Topsfield.
	Mergus Merganser	James Balch.
	Syngnathus typhle—Native Insects	B. Hale Ives.
	Exocetus exiliens, &c.	J. Fisk Allen.
	Lepus cuniculus, male and female	Francis H. Tufts.
	Copal, containing insects	Andrew Leach, Beverly.
	Capsule of Bertholletia excelsa	Mrs. John Chadwick.
Nov.	Pods of Tamarindus Indica	Mrs. Newcombe.
	Box of Native Lepidoptera	Abel Nichols, Danvers.
	Sciurus Carolinensis	Joseph Farnum.
	Strix nyctea	William Oakes, Ipswich.
	Bowlders, from St. Petersburg	Charles Cramer, N. Y. city.
Dec.	Strix nyctea	James Brown, Danvers.
	Skull of Corvus corone	Charles G. Page.
	Testudo radiata	Mrs. Arrington.
	Falco leucocephalus, (young)	Joseph Grover, Concord, N. H.
1835.		
Jan.	Strix Virginiana and cinerea	Erastus Ware, Marblehead.
Feb.	Cervus paludosus, young female	Benj. Creamer.
Mar.	Eggs of 15 species of native birds	Samuel P. Fowler, Danvers.
April.	Antlers of Cervus Virginianus	Henry Wheatland.
	Do. do. and Fringilla purpurea	William P. Richardson.
	Stalactites, from Girgenti, Sicily	William Fettyplace.
	Native Minerals—23 specimens	F. W. Paine, Worcester.
	Seeds and Bird-skins, from Sandwich and Society Islands	John B. Williams.
	Minerals and seeds of Mangifera Indica	Mrs. J. Chadwick.
	Fulica Americana	George Prince.
	Native Minerals and Sylvia pinus	Andrew Nichols, Danvers.
	Reptiles, from Para, S. A.	Tho's P. Pingree.
	Shells, from Fegee Islands	John W. Rogers.
	Minerals	John C. Lee.
	Prepared heads of 17 species of Birds	John M. Ives.
	Reptiles and Bird-skins, from Para	Benj. Cox, jr.
	Unbroken fibre of Musa sp. from which Manilla hemp is obtained—Specimen of cotton, with seed enclosed	Jona. P. Felt.

1835.

May.	Notonectæ	George Osgood, Danvers.
	Several species of Paradisea	F. W. Paine, Worcester.
	Nux Moschata, Caryophyllus aromaticus—Draco lineatus, &c. in spirit	William P. Endicott.
	Fossil impressions of Ferns	Wm. P. Richardson.
	Coluber constrictor and Gymnotus sp.	Pickering Dodge, Lynn.
	Petrifactions, &c. from the collection of the late Dr. Holyoke—and Native Minerals	Andrew Nichols, Danvers.
	Earth, from Epsom	Abel Nichols, do.
	Box of Insects, from Manilla	J. Willard Peele, Manilla.
	Foreign shells, 12 species—Tusk of Halicore Indicus—and leaves and fruit of Jatropha elastica	John Warden.
	Foreign shells, 96 species	Miss E. Hodges.
	Sphinges and Mantides, from Madagascar	Jacob Kittredge.
	Scolopax flavipes, Alauda magna, &c.	Nath'l West 3d.
	Native Minerals—Turdus aurocapillus—Vireo olivaceus, &c.	Andrew Nichols, Danvers.
	Skin of Felis onca	T. Perkins Pingree.
	" of Canis (vulpes) fulvus	Samuel Honeycomb.
	Fossil Coral, from the Gypsum formation, Baltimore	Charles G. Page.
June.	Foreign Shells	Nath'l L. Page.
	Reptiles from Para, S. A.	James Creamer.
	Molar tooth and femur of Loxoodonta Africanus, and skin of Boa constrictor	Robert Brookhouse.
	Chama Hippopus and Rhomb spar	Henry G. Bridges.
	Skin of Kangurus labiatus	Philip Hammond.
	Box of Chinese Insects	Samuel Barton.
	Lead Ore, from mines near Galena	Miss M. J. Scobie.
	Skin of Arctomys monax, and Iron pyrites	Theodore Morgan.
	Sepia officinalis	Francis H. Tufts.
	Minerals, from Worcester county	William H. Brooks.
	Calosoma calidum & Saturnia Io	Geo. A. Perkins.
	Attacus luna	Miss Sarah Cook.
	Bog Iron Ore, from Gloucester	John S. Appleton, Gloucester.
	Tail of Elephas Indicus	B. K. Churchill.
	Claw of Astacus marinus, which weighed 39 lbs.	Moses H. Shaw, Gloucester.
	Calosoma scrutator, 2 specimens	W. C. Wiggin, Danvers.
	Emys scabra, 2 specimens	B. Hale Ives.
	Egg of Struthio camelus	Chas. M. Richardson.
	Native Minerals	Wm. Stearns.

1835.

June.	Condylura cristata	Charles Dodge.
	Stalactite	——— Lander.
	Mica, from New-Brunswick	Charles G. Page.
	Tremolite, from Lubec, Me.	S. & L. Brcoks.
	Calosoma calidum	Col. Dodge, Wenham.
	Sphinx sp. and Testudo serpentina	John M. Ives.
	Helices, from England	John Full.
	Nest of Sylvia aestiva	Wm. P. Richardson.
	Minerals	Charles Cramer, N. Y. city.
July.	Fruit of Juglans alba, from Penn., Fasciculus of Western Vernal Plants, Minerals, and 28 species of Uniones from Ohio	John L. Russell.
	Skull of Mephitis Americana	Theodore Morgan.
	" of Felis onca	Jos. Farnum, jr.
	Pteromys volucella	Henry Wheatland.
	Mactra grandis, from Chelsea Beach	Joseph Moriarty, Boston.
	Fruit of Psidium Catteleyanum and Cactus sp.	Theodore Morgan, jr. Maranham.
	Malformed hen's egg	Samuel Curwen.
	Pagurus sp.	Miss Eliza Perley.
	Shells and corals from Phillips' Beach—Reptiles from Para—Beak of Xiphias sp., and Molar tooth of Loxodonta Africanus	Charles G. Page.
	Nest and eggs of Fringilla palustris	E. N. Wead.
	Pupa and imago of Cicada pruinosa	William Ives.
	Scolopendra morsitans, young	John Wheatland.
	Minerals, from Saugus	John C. Lee.
	Native Minerals	Thomas Prince.
	" "	Andrew Nichols, Danvers.
	Foreign Shells, 4 species—and Testudo radiata	Miss M. A. King.
	Ichneumon sp.	John Howard.
	Syngnathus typhle	Wm. B. Dodge.
	Coluber vernalis	John M. Ives.
	Falco borealis, young	——— Rand.
Aug.	Vespertilio Noveboracensis	Joshua Safford.
	Native Insects (rare)	T. W. Harris, Cambridge.
	Testudo tabulata, from Brazil	George D. Phippen.
	Minerals, from Chelmsford, Mass	Wm. H. Osborne.
	Cottus quadricornus	J. W. Stearns, jr.
	Anas Gambiensis	Geo. M'Duffie.
	Crotalus horridus & corvus corone	Francis Spinney, Lynnfield.
	Molar tooth of Loxodonta Africanus	Nicholas Boylston.
	Head of Testudo sp. from S. America	Thomas Dewing.

1835.		
Aug.	Minerals, from Franconia and White Hills, N. H.	T. P. Shepard.
	Chelonura serpentina and native minerals	Abel Nichols, Danvers.
	Shark's jaw,	Luther Upton.
	Capsules of Bertholletia excelsa	Robert Hill.
	Skin of Penguin's neck	Mrs. Johonnot.
	Suite of Shells, from Island of Java	John C. Lee.
Sept.	Turkey tracks in Sandstone, from Montague, Mass.	Pickering Dodge.
	Sphinx sp. from Para	William Rose.
	Coluber sp.	Joseph Brown.
	Minerals, from Franconia and vicinity	Francis Cummins.
	Madrepora and Minerals	Miss S. Silver.
	Petrifactions, from Cattskill Mts. N. Y.	George A. Perkins.
	Native Insects, Skulls of Canis (Vulpes) fulvus, Cervus Virginianus, Canis familiaris (b. Terrarius) &c.	Henry Wheatland.
Oct.	Uniones, several species	Mrs. Dunlap.
	Unio, from Fox river, Michigan Territory	Mrs. Elkins.
	Fulica Americana	——— Upton, Danvers.
	Podiceps rubricollis	Wm. Cheever.
	Eggs of Ardea nycticorax	Francis Cummins.
	Ornithorhyncus paradoxus, and Falco sp. from New South Wales	Wm. Driver.
Nov.	Charadrius melodus	John M. Ives.
	Skull of Buceros sp. from Sumatra	Charles Procter.
Dec.	" " Equus caballus, female	Wm. Osborne.
1836.		
Jan.	Nest of Hirundo edilis, Fruit of Citrus paradisus, Shells, & Chelonia mydas, var. from Java	Richard Wheatland.
	Hyria, two species, Turbo, Cancer, &c.	Geo. H. Brown, Beverly.
Feb.	Skull of Loxia cardinalis, male	S. P. Fowler, Danvers.
	Palate bone of Drum fish	Nath'l Weston.
	Skin of Felis tigrina, from S. America	Daniel Shepard.
	Jaw of Delphinus delphis	Joseph Farnum, jr.
Mar.	European (chiefly Russian) Insects	T. Wm. Harris, Cambridge.
	Skull of Sus babyroussa, from Island of Timor	John G. Waters.
	Bradypus didactylus, Chelys Matamata and 12 species of Simiae and Lemures, from S. America	Benj. Upton, jr.

1836.

Mar.	Fish, several species from Indian Ocean	John Webb.
	Native Minerals	Wm. Prescott, Lynn.
	Antler of Cervus Alces	Geo. H. Devereux.
April.	Strix Virginianus and egg of do.	——— Pope, Danvers.
	Mass of Magnetic Iron, from the New York fire	Wm. Brown.
	Skulls of Phoca vitulina and Arctomys monax	S. P. Fowler, Danvers.
	Jaws of Squalus sp.	J. H. Eagleston, Baltimore.
	" " " " and Delphinus delphis	Mrs. J. Chadwick.
	Exocetus sp. and Jaws of Delphinus delphis	Chas. Farrington.
	Molar tooth of Elephas Indicus, from Ceylon	Robert W. King.
	Strix nyctea	Palmer Tufts, Danvers.
	Sepia and Exocetus, from Indian Ocean, Agates, Petrifactions, & Sticks of Laurus Cinnamomum	Joshua Kinsman.
	Nest and eggs of Fringilla melodia	Andrew Nichols, Danvers.
	Carbonate of Lime, from Sing Sing, N. Y.	Geo. A. Perkins.
	Collection of Shells from E. Indies	James B. Briggs.
	Skin of Boa Constrictor from Ceylon, and Capsules of Medicago sp. from Patagonia	Wm. P. Richardson.
May.	Molar tooth of Loxodonta Africanus	John Lewis Russell.
	Galena and Sulphuret of Copper, from Galena, Mi.	Increase S. Smith, Hingham.
June.	Minerals	Geo. H. Brown, Beverly.
	Eggs of Struthio camelus and Comb of Apis Mellifica	H. K. Oliver.
	Stalactite from St. Michael's Cave, Gibraltar	John Tucker.
	Fruits of Banksia serrata and Hakea sp. from Sidney, New South Wales	Chas. F. Richardson.
	Coluber Sipedon	Osgood Parker.
	Fruit of species of Palm from Brazil and Hyla versicolor	John Lewis Russell.
	Attacus luna	Thomas Cole.
	Libinia canaliculata	Charles G. Page.
	Native Crustacea	Wm. Prescott, Lynn.
	Insects and Reptiles, skins of Strix sp. Ardea sp. and Dasyurus pencillatus; Foot of Kangurus labiatus, Pressed Plants, Fruits of Banksia serrata, &c. from Swan river, Western Australia,	John B. Williams.

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June.	Specimen and eggs of Emys picta	George A. Perkins.
	Box of South American Insects	Mrs. Thorndike Deland.
	Echinus sp. from Maranham	Luther Upton.
	Eggs of Coluber constrictor	Jas. Stone.
	Specimens of Calosoma scrutator	W. C. Wiggin, Danvers.
	Julus sp. and Minerals	Theodore Morgan.
	Maenura lyra, from New South Wales	Miss Sarah Mugford.
	Fasciculus of Pressed Plants	Miss N. Gay.
July.	Cistuda clausa, from Reading, Mass.	Geo. B. Foster.
	" " " Barnstable co. Mass.	William Mack.
	Minerals and Petrifactions from Ceylon and Franconia	Robert W. King.
	Lacerta sp.	John H. Parnell.
	Eggs of Emys scabra	H. Wheatland.
	Limeston containing shells	Thomas Hunt, jr. Danvers.
	Petromyzon fluviatilis	Luke Towne, Topsfield.
	Helices	Mrs. J. Brazer.
	Foreign Shells, several species	Mrs. J. B. Briggs.
	Native Fish	E. H. Payson.
	Vespertilio sp., and several species of Insects & Reptiles from Java	R. G. Wheatland.
Aug.	Derbyshire Spar	Mrs. E. Lander.
	Skin of Squalus tigrinus, from Swan river, Western Australia	John B. Williams.
	Serpentine, from Lynnfield, Mass	Andrew Nichols, Danvers.
	Eggs of Coluber constrictor	Wm. Osborn.

JOURNAL

OF THE

ESSEX COUNTY NATURAL HISTORY SOCIETY.

Vol. I. JUNE, 1839. No. 2.

PREFATORY REMARKS.

It may be expected on the commencement of a 2d number of our Journal, that some brief account be given of the state and progress of the "Essex County Natural History Society," since the issue of the first, containing its anniversary address, etc. At that time, (June 15, 1836,) the Society was considered in a prosperous condition. Its intentions since, as ever, have been to promote the Natural History of the County.

Our County Geology and Mineralogy have, thus, been examined and specimens collected. A valuable group of native birds has been provided for its Ornithology. The Conchology of our ocean shores has been regarded. Nor has our Botany been overlooked. Beautifully dried Plants, both of the Phanerogamous and Cryptogamous orders, and also prepared fruits and seeds will be found in their proper compartments. Attention to the Mammalia, Reptilia and Fishes, as also to Comparative Anatomy has been on the increase. Some rare and valuable works have been added to the Library. Rich donations, have been made by Correspondents, in foreign specimens. The Floral Exhibitions have maintained their usual and proper posi-

tion. The Society's Hall have been ever open to the enquiring and curious; and it is still the wish of the Curators and others, that the public may feel itself interested in a free and liberal invitation to a participation of its advantages.

The second number is now offered in the spirit and intention of the Society's plan. The articles will be found devoid of as much of the technicalities of science as is compatible with tolerable descriptions. Hoping to interest others as we have been interested in the Natural History of our County, these simple efforts and gleanings of our experience and labors are respectfully submitted.

Salem, Mass., May 1, 1839.

FAMILIAR NOTICE OF SOME OF THE SHELLS FOUND IN THE LIMITS OF ESSEX COUNTY, MASSACHUSETTS: WITH REFERENCE TO DESCRIPTIONS AND FIGURES. BY JOHN LEWIS RUSSELL.

THE object of the present paper is to give a simple account of a few shells found in this immediate vicinity, avoiding as much as is possible, the objection of scientific and technical description. No specimen has been noticed, which has not been found within the county. I have taken this precaution, that one of the primary intentions of the Society should be fulfilled, viz. to procure the Natural History of Essex County.

Scattered throughout a multitude of various scientific publications, and oftentimes unaccompanied by figures, the descriptions of our native shells, escape the observation of the private student, whose access to libraries, or whose privileges in the use of Cabinets are limited. In thus collecting, as it were, these scattered descriptions, I do not presume on originality, but only aim at usefulness. To this end, I have gathered wherever such information came in my way, or was at my disposal, interspersing private observations as they occurred to my mind.

With a few exceptions, the species are marine ; the land and fresh water shells, may perhaps constitute another paper at a future time.

PECTINARIA. BELGICA. *Lam.* BELGIC PECTINARIA.
Brown's Zoologist's Text Book. pl. 92. fig. 20.
Conchologist's " pl. 19. fig. 20.

A curious shell, made up of small particles of sand loosely agglutinated, and shaped like the foreign Dentalium. Care should be taken in collecting it as it is very fragile.

Found in the stomach of the haddock, off Nahant.

Cabinet of the Society.

OBSERVATION. May be found in great abundance at very low tides at Lynn and neighboring beaches ; the animal is very curious, and to be captured the shell should be very suddenly removed from the sand, or its inhabitant easily escapes. A singular fringed head, and numerous spiny bands or joints may be noticed on the body.

SPIRORBIS, *Latin A Spiral Orb.*
NAUTILOIDES, *resembling a Nautilus.*

A pretty and minute shell found in profusion on sea weed, (Algae,) ivory white, curled. In order to preserve specimens for the Cabinet, it is better to select a piece of the sea-weed, that the shells may remain uninjured.

Brown's Zoologist's Text Book, Pl. 92. fig. 15.
" Conchologist's " Pl. 19. fig. 15.
Cabinet of the Society.

The following shells belong to the class of Molluscous animals called CIRRHIPEDA, i. e. having *feathered feet.* They are attached to other bodies, and sessile or fixed in one spot. They may be found in the class X of *Lamarck* and under his 1st order.

BALANUS, Greek, *an acorn.*
MISER, Latin, *small, insignificant.*

A small, sharp angled white shell, composed of many valves, and very abundant on the rocks, pebbles, and other objects on the sea shore.

Cabinet of the Society.

BALANUS OVULARIS. *Lamarck.*
Egg shaped or oval sea acorn.

A larger and prettier species than the foregoing, with striated valves. Found on the piles and stones of the bridge, near Legg's Hill, last summer, by Jos. True, sometimes attached to the living shells of the common muscle.

Figured in Griffith's Cuvier's Animal Kingdom *Mollusca,* p. 136., pl. 7., fig. 1.

Cabinet of the Society.

Kept alive in sea water, (as it may be for several days) it will open and close the valves of its mouth, and protrude its feathered feet in search of food, presenting an interesting spectacle.

BALANUS GENICULATUS. *Conrad.* Latin *genu, a knee.*
Kneed sea acorn.

A large fine species, found on the Lynn beaches, attached to other shells, particularly to those of the Horse muscle : white

with prominent longitudinal ribs, and two angular elevations on each.

Journal of the Academy of Natural Sciences of Philadelphia, Vol. VI., p. 265, pl. xi., fig. 16.

Cabinet of the Society.

ORDER II. PEDUNCULATA, i. e. having *foot stalks* to the shells. *Lam.*

ANATIFA. Latin, *anas*, a *goose*, and *fero*, *to bear*, (from an old notion that the barnacle goose was produced from this shell. Vide. Drummond's Letters to a Young Naturalist, p. 148, fig. 12.)

LAEVIS, Latin, *smooth*. Smooth anatifa.

SYN. LEPAS ANATIFERA. L.

PENTALEPAS LAEVIS. *Blainville.*

Multivalve, furnished with a cartilaginous stalk or stem, by which it is affixed to the bottoms of vessels and to floating timber. Edges of the valves covered with an orange membrane. Number of the valves five.

Griffith's Cuv. *Mollus.* pl. 2, fig. 1. Bosc. coquilles, pl. 46, fig. 1. Blainville's Manuel, pl. 84, fig. 3. Brown's Zool. Text Book, p. 92, fig. 5.

Cabinet of the Society.

TEREDO. Greek, *a woodboring worm.*

NAVALIS. Latin, *belonging to a ship. Ship worm.*

Found in the sheathing of vessels from foreign seas. Sometimes of extraordinary size: the tube attached to the shell, and which is formed of calcareous deposit to line the drilled hole, being two feet long.

Griffith's Cuv. *Mollusca*, p. 122, pl. 8, fig. 2. Brown's Conchol. Text Book. pl. 18, figs. 18 to 22.

Very fine specimens in the collection of the East India Marine Society.

PHOLAS. Greek, *a burrow*, (*in allusion to its habits.*)
CRISPATA. Latin, *crisped or curled.*
The curled shelled Pholas or Piddock.

A fine delicate shell, with a singular spoon-shaped tooth, beneath the beak of the shell and within ; furnished with smaller pieces or valves, varying with the particular species.

Rare on the beaches of Essex Co., and found generally in fragments, or single valves.

Brown's Zool. Text Book, pl. 92, fig. 17. Blainville's Manuel pl. 79, fig. 7.

Brown's Conchol. Text Book, pl. 19, fig. 17.

PHOLAS LAMELLATA. *Turton. Small plaited Piddock.*

This species, of which some doubt is entertained of its identity with the British specimens as figured by Turton, was found at Phillips' beach, Lynn, during the past summer. It resembles the young of Pholas crispata, but differs from it in having only one accessory piece, a medio-dorsal. Bores into the clay and also into decayed wood : its burrow being eight inches long, the shell occupying the middle, and the animal extending above and below, so as to completely occupy the space. Its valves are of great delicacy, and when removed from its burrow, the attempt of the animal to withdraw itself into the shell often ruptures them. About an inch long, pure white and beautiful.

Turton's British Bivalves.

Presented to the Society's Cabinet by Jos. True, to whom I am indebted for the above observations.

The following are BIVALVES, i. e. having but *two* shells, and belonging to the Class XI. of *Lamark*, viz. CONCHIFERA, i. e. having shells, (there being Molluscous animals without shells,) and to his 1st order BIMUSCULOSA, i. e. having two muscular impressions on each valve. The usual habitation of this group of animals is in mud or sand, though sometimes coming out of it, at pleasure.

SOLEN. Greek, *a tube.*
ENSIS. Latin, *a sword. Scimitar shaped.*
The Sword Solen or Sabre Solen.

Linear, shaped like the scabbard of a sword, white within, brownish or green without, of various lengths ; sometimes eight inches long. An interesting species. Lynn beaches and common on the coast. Fine specimens at Plum Island, sometimes called " Long Clam," on the South Shore.

Brown's Zool. Text Book, pl. 91, fig. 11. do. Conchol. Text Book, pl. 18, fig. 11.

Cabinet of the Society.

SOLENCURTUS. *Blainville. Solen* and *curtus short.*
COSTATUS. *Say.* Latin, *ribbed.*
SYN. SOLEN COSTATUS. *Say.* Journ. Phil. Acad. Nat. Sc. vol. 2, p. 315.

A delicate and very beautiful shell, very abundant on the sandy shores of Essex County, especially at Lynn. Teeth, three in each valve, a strong white rib passes from the beak to the base, whence its specific name. Color, brownish without, pearly violet within.

Say's American Conchology, plate 18.

GLYCIMERIS, Greek.
SILIQUA. Latin, *pod-shaped. Pod Glycimeris.*

Shell thick, widely gaping at each extremity, covered with a black epidermis, toothless and callous near the hinge.

A shell of little beauty, living in deep water, and eaten by the larger fish. A specimen with the animal, with several others of valves only, taken from the stomach of a cod fish, were presented to the Cabinet of the Society, by Dr. W. P. Richardson.

Brown's Zool. Text Book, pl. xci, fig. 7. Do. Conchol. Text Book, pl. 18, fig. 7.

MYA. Greek, *a muscle.*
MERCENARIA. Latin, *for sale. Merchantable.*
Common Clam. Soft Shell Clam.

This shell fish, so well known as an article of food, and abundant on our shores, is not wholly devoid of interest as a conchol-

ogical specimen. Its ciliated foot furnished with two apertures (called mouths) bear no unapt resemblance to a small zoophyte. This is protruded from the burrow of the animal on the approach of the tide, and receives with the wave the minute objects which constitute its food. A variety of tints may be discovered in the valves, from a deep blue, to a yellowish and even pure white. The latter color obtains when the shell is found in clay.

Journ. Acad. Nat. Sc. Phil., vol. ii. p. 313. Blainville's Manuel, pl. 77, fig. 1. Bosc. Coquilles, pl. 41, fig. 2.

ANATINA. Greek.

LEANA. *Lea's Anatina.*

A small, whitish shell, with rounded ends, the anterior rather shorter than the posterior, elliptical, fragile, resembling a small Mya, but differing in the teeth, "having two spoon shaped teeth instead of one;" each tooth in each valve precisely alike, the ligament inserted between. Named in honor of I. Lea of Philadelphia, by Mr. Conrad, its discoverer.

Lynn beaches and the shores of Essex County.

Journ. Acad. Nat. Sc. Phil., vol. vi., p. 263, pl. xi., fig. 11.

Cabinet of the Society.

MACTRA. Latin, *a kneading trough.*

GIGANTEA. Latin, *gigantic, large.*

SYN. MACTRA SOLIDISSIMA *Say.*

Shell thick, very large; covered with a pale yellow epidermis, which becomes more or less destroyed, as the shell grows older. The prettiest specimens are the young, and these according to Du Ravenel have been mistaken for a distinct southern species. M. Similis, (see his observations in "Catalogue of recent shells," Charleston, S. C. 1834.)

Known in some places as the "Hen Clam," and considered excellent food. The valves are often used in dairies for skimming milk. Found after a severe storm, and taken from the sand only at low tides. Nahant and other sandy beaches. Encyclopædie Methodique, pl. 259, fig. 1. Journ. Acad. Nat. Sc. Phil., vol. vi., page 257.

MACTRA GIGANTEA *varietya.*

A small, (young?) specimen I have lately met with, on the Lynn beaches, whose valves were variegated with a few angular lines of black; probably accidental and subject to obliteration on age.

Variety b. Glaucous green with three or four broad oblique transverse bands. From stomach of fish.

Cabinet of Society.

MACTRA ARCTATA. *Conrad.* Latin, *bent*, (posterior margin curved.)

A pretty and rather common species, especially on the beaches of Cape Ann; residing in small burrows in the sand, to which it may be traced by a slight furrow, made by the edges of the shell in moving. Color white or very slightly yellow. I have seen fine specimens from Plum Island.

Journ. Acad. Nat. Sc. Phil., vol vi., p. 257, pl. xi, fig. 1.

Cabinet of Society.

MACTRA TELLINOIDES. *Conrad.* *Tellina*, and Greek, *similar to Tellina-like Mactra.*

Shell ovate, thin and very fragile, with raised lines (striæ;) resembling a tellina from a slight fold on the smaller side. Abundant on the muddy shores of South River, and elsewhere in this neighborhood.

Journ. Acad. Nat. Sc. Phil., vol vi., pl. xi, fig. 4.

Cabinet of Society.

SOLEMYA. *Solen* and *Mya*, (*signifying that the shell is allied to Solen and Mya.*)

VELUM. Latin, *a veil.*

The veiled Solemya.

Shell very thin and fragile, the epidermis extending beyond the valves in a singular manner, furnishing a not unapt resemblance to a veil or drapery. Very rare; to be found after a long storm, and then generally broken. A desirable acquisition to the Cabinet.

A very fine specimen in possession of Wm. Oakes of Ipswhich, was obtained by him from the beach of that part of Essex County.

SANGUINOLARIA. Latin, *blood*, (*allusion to color of some species.*)
FUSCA. *Conrad.* Latin, *dusky.*
Dusky Sanguinolaria.

A common and rather pretty bivalve, occurring on the muddy shores of our estuaries.

May be collected at Winter Island, South River, and elsewhere in this neighborhood.

Cabinet of the Society.

PANDORA. Greek, *no obvious meaning.*
TRILINEATA. *Say.* Latin, *three lined.*
Three lined Pandora.

A rare, beautiful and pearly shell, occasionally found on our beaches ; and seldom perfect. Four single valves only have come under my observation, and these much worn, and all right valves, being distinguished easily by their more convex figure.

About an inch long; posterior margin, very round, anterior beaked.

Described in Journ. Acad. Nat. Sc. Phil., vol. ii. p. 261, and figured in Says' American Conchology, pl. ii.

Cabinet of the Society.

My Cabinet.

SAXICAVA. *Bellevue.* Latin, *saxum, a stone*, and *cavus, a hollow.*
DISTORTA. *Say.* Latin, *crooked.*
Distorted Saxicava.

The name of Saxicava was given to denote the habits of this animal to hollow out stones for its dwelling ; an instinct, I believe not observable in the present species. The teeth, which are prominent in some specimens, are seen only when young, and become obliterated as the shell arrives arrives at maturity, and the crooked appearance of the valves also disappears. A curious rather than pretty shell, and probably overlooked, except

by minute observers. Found occasionally at Lynn. Length about half an inch.

Described by Say, in Journ. Acad. Nat. Sc. Phil., vol. ii., p. 318.

Cabinet of the Society.

Obs. I have found it more abundant on the shores of Maine than in this vicinity.

PETRICOLA. Latin, *Inhabiting rocks.*

FORNICATA. Latin, *fornix, a furnace.*

Arch ribbed stone borer.

Shell transversely lengthened out, posterior side very short; anterior gaping a little. Across the valves are numerous lines; those nearest the posterior, furnished with ribs or arches, (costæ.) Teeth two, on each valve; one of which is nearly divided to its base, giving the appearance with the other of there being three. Color white; texture delicate, nearly smooth within; excepting the deep grooves towards the posterior end.

Described very minutely by Say, in Journ. Acad. Nat. Sc. Phil., vol. ii., page 219.

SYN. PETRICOLA PHOLADIFORMIS, *Lamarck*, and figured, as such in Say's Am. Conch., pl. 60, fig. 1. A poor figure in Brown's Zool. Text Book, pl. xc. fig. 17.

Very abundant on the sandy beaches of Essex County, and boring in great quantities into the hard blue clay, at low water mark, on Phillips' beach, Lynn.

This beautiful native Mollusk will present to the attentive observer of Nature, an interesting subject for study. Two living specimens, one in my possession, and the other in possession of a friend, lived for several weeks in apparent health, by the occasional change of sea-water. With a little sand on the bottom of the vessel in which it was placed; my specimen, would elevate or depress itself by the muscular action of its body, extended from the edges of the valves. The other was not furnished with sand. Two curious tubes similar to those of the *Pholades*, were extended from the beaked end, the aperture of which served for the imbibition and rejection of water, a constant current of which was kept up when these tubes were beneath the

surface. But when the tubes were elevated above the surface, an occasional jet only was observable.

The orifice at the tubes exhibited a beautiful structure. A series of ciliæ (hair-like bodies) delicately fringed on both sides, consisting of four larger, alternating with an equal number of smaller, seemed intended for the creation of a current of water, similar to that observed in the Infusoria. The same number of short and obtuse points, without any fringe were inserted on the margin of the tube used for rejection of improper substances, the economy of which does not appear.

TELLINA. (*A well known genus of great beauty.*)
POLITA. Latin, *smooth, polished.*
Polished Tellina.

A very small, smooth, and sometimes rose-tinted shell, appearing concentrically striated under a magnifier. Found on sandy beaches, among broken fragments of other shells, in some furrow or basin made by the tide. Lynn, Nahant.

Journ. Acad. Nat. Sc. Phil., vol. ii, page 276.

Cabinet of the Society.

TELLINA TENERA. *Say.* Latin, *fragile.*
Fragile Tellina.

A very delicate species similar to the preceeding in general appearance; the hinge teeth two, the larger emarginate.

Found on beaches in Essex County.

Journ. Acad. Nat. Sc. Phil., vol. ii. page 303.

My Cabinet.

TELLINA SORDIDA. *Couthouy.* Latin, *sordid, mean.*

A new, rare, and inelegant species, discovered by Capt. Jos. P. Couthouy, and described by him in the Boston Journ. Nat. Hist., vol. ii., page 59.

"Shell oval, somewhat compressed, bluish white without, milky white within."

Boston Journ. Nat. Hist., vol. ii. plate III., fig. 11.

Taken from the stomach of a haddock, off Half-way rock, by Dr. W. P. Richardson, July, 1838, and presented by him to the Cabinet of the Society.

ASTARTE. *Sowerby*, (*a classical allusion to the Syrian Venus.*)
CASTANEA. Latin, *resembling a chesnut.*
Chesnut Astarte or Sea Chesnut.

SYN. CRASSINA. *Lamarck.* VENUS CASTANEA. *Say.* Journ. Acad. Nat. Sc. Phil., vol. ii., page 273.

Shell suborbicular, closed entirely, hinge teeth strong, distinct, two on each valve, ligament exterior.

A thick almost round shell, dark brown epidermis, smooth; within, pure white, crenated on the edge. Rare. Beaches of Essex Co.

My Cabinet and that of the Society.

Say's Am. Conchol., pl. 1, (a beautiful figure.)

Obs. Two varieties of this shell seem to have been ascertained in this vicinity. I have a specimen from Cape Cod, (Provincetown) with a more arquated beak, and distinctly elevated acute ribs, not a little resembling *Venus crassatella*. Blainville, pl. 75., fig. 7.

The second variety seems to be indicated in the catalogue by Thomas A. Greene, appended to Hitchcock's Geol. Report, thus "Astarte, a distinct species with margins entire." Perhaps his and mine own may prove identical.

SYN? Astarte castanea vary B. *Totten.* Silliman's Journ., vol. 28, p. 348. plate, fig. 2.

CYPRINA. (*nearly related to Venus : a classical allusion.*)
ISLANDICA. *Lamarck.*
Islandic Cyprina.

Shell, thick suborbicular, heavy, covered with a light brown epidermis; abundant at Nahant, and thrown on the beaches by violent storms. A casual observer might mistake it for a variety of Quahog. The epidermis at once distinguishes it. Used for food and not inelegant in appearance.

Lister's Conchology Table, 272, fig. 108.

Blainville's Manuel, pl. 70. *bis.* fig. 5.

Brown's Zool. Text. Book, pl. 89, fig. 22. Ibid. Conchol. Text Book, pl. XVI., fig. 22.

Cabinet of the Society.

VENUS. (*Allusion to the beauty of many species.*)
MERCENARIA. *Saleable, merchantable.*
Quahog. Hard clam.

A well known shell fish, more esteemed at the South, (New York and New Jersey) than with us. Probably introduced into our estuaries by the Indians; from the purple edges of the valves of which, they procure their wampum. This color is often exceedingly rich, and sometimes entirely wanting.

VENUS GEMMA. *Totten.* Latin, *gemma, a gem.*

A very small and beautiful species of a bluish purple, inner margin crenated, common size 1-10th of an inch long.

Totten in Silliman's Journ., vol xxvi., p. 367, plate, fig. 2.

Found among sand and fragments of other shells in the mill pond, near the Eastern Rail Road, Salem.

My Cabinet.

CARDIUM. Latin, *a heart.*
PINNATULUM. *Conrad.* Latin, *slightly winged.*

A small yellowish white and delicate shell with about 26 ribs, slightly muricated.

Found occasionally on Lynn and Ipswich beaches.

Journ. Acad Nat. Sc. Phil., vol. VI., page 260, pl. XI., fig. 8.

My Cabinet.

NUCULA. Latin, *a small nut,* (*from a resemblance of some species.*) LIMATULA. *Say.*

Shell elongated, green without, pearly white within, margin entire, teeth prominent and numerous. Rare. Found by J. Chadwick, among the Mytilus edulis—by J. True among the Ostrea virginica. I have a specimen formerly belonging to Prof. Peck, taken from the gullet of a duck.

Say's Am. Conchol., plate 12.

Cabinet of the Society.

NUCULA TENUISULCATA. *Couthouy.* Latin, *finely furrowed.*

A curious rostrated or beaked species, slightly gaping at the extremity of the anterior portion. Minutely described in the

Boston Journ. Nat. Hist., vol. ii., p. 64. I beg leave to dispute its rarity, as the Society has in its possession very many specimens, taken from the stomach of haddock, in the summer of 1838.

Boston Journ. Nat. Hist., vol. ii., pl. iii. fig. 8.

N. B. Strongly resembles *Nucula concentrica.* Say's Am. Conchol., pl. xii., but which however is fossil.

NUCULA MYALIS. *Couthouy.* Latin, *like a mya.*
Mya-like Nucula.

A species of little beauty, first described by Couthouy, in Boston Journ. Nat. Hist., vol. II., p. 62, pl. cxi, fig. 7. "Shell ovate, slightly gaping at both extremities, with numerous ridges of growth—teeth 20 to 22. Color, dull, yellowish white within; epidermis dark olive." When this is worn off, the shell resembles a young Mya or clam. A glance at the teeth, near the beak, at once distinguishes it.

Lynn beach. Cabinet of Dr. Wm. Prescott.

UNIO. *A Pearl,*
COMPLANATUS. *Lea.* Latin, *flattened.*
SYN. UNIO PURPUREUS.
Purple Unio.

Common in all the ponds of Essex Co., and occasionally of much beauty; though more or less eroded on the beaks.

Cabinet of the Society.

Nicholson's Encyclopædia, 3d Am. Ed., 1819, vol. IV, plate.

Very fine specimens of varieties have been collected by Dr. Prescott, from Flax pond, Lynn, which would vie with any from the Western States; one, in particular, should be mentioned of a most superb salmon, and were color of nacre alone sufficient for specific distinction, it should be called Auratus, which I perceive is a species of Raffinesque, and regarded as a synonym by Conrad. Another is curious in having one valve purplish, and its corresponding valve orange. Others with pure white nacre, are of great beauty.

UNIO RADIATUS. *Say.* Latin, *rayed.* (*Alluding to the green markings on the epidermis.*)

Another very beautiful native species, elegantly striped with transverse rays of dark green, some broader than others: upon a lighter green epidermis; within bluish pearl.

Flax Pond, Lynn, Dr. Prescott.

Cabinet of Dr. Prescott and of the Society.

UNIO NASUTUS (*Say.*) Latin, *beaked,* (*alluding to its elongated and sharp form.*)

A fine, delicate shell; compressed, fuscous without, within bluish white, teeth crenate: more or less distinctly radiated.

Described in Nicholson's Encyclop., 3d Am. Ed. Phil., 1819. vol. IV., article "Conchology," with an accompanying figure.

Obs. The specimens from the Hudson's River, N. Y. are usually bluish within or slightly tending to purple, but specimens from our own ponds are very beautifully and deeply purple, and very dusky without. Mr. Conrad, in a little work published in 1834, mentions the fact that this species is purple, as occuring in the Schuylkill, Pa., and also in Chester River, Md.

Found in Flax Pond, Lynn, by Dr. Prescott.

His Cabinet and Cabinet of the Society.

ANADONTA. Greek. *Destitute of teeth.*

CATARACTA. Latin, *belonging to streams.*

Common in ponds and still ditches in this vicinity. Light green, very fragile and beautiful, six or more inches in length. Sometimes found in the Reservoir of the Aqueduct, at Tapley's Brook.

Nicholson's Encyclopædia, vol. iv. plate.

ANADONTA.

IMPLICATA. *Say.* (*No obvious meaning.*)

Shell thin, elongated, somewhat beaked, very dark brown without, pearly within; common in ponds of Essex County.

The following belong to the second order of Lamarck, viz. UNIMUSCULOSA, i. e. having but *one muscular impression* on each valve.

MODIOLA. Latin, *a little measure.*
PAPUANA. *Lamarck.* "*Horse Muscle.*"

A Genus invented by Lamarck, to denote some trifling distinction between this shell and Mytilus to which it is closely allied. A better distinction is made by the celebrated anatomist Poli, on account of some peculiar organization of the animal, and called by him *Callitriche.* Very common on our beaches and washed ashore by the gigantic Alga, "Laminaria," (kelp) which, being attached to the shell, tears it from its bed, by the action of the waves. Specimens are oftentimes of great size, and of considerable beauty.

Say's Am. Conchol., plate xlv. Blainville's Manuel, pl. lxiv. fig. 3. (*A poor figure.*)

Cabinet of the Society.

MODIOLA PLICATULA. *Lamarck.* A Latin diminutive, *little plicated.*

The common longitudinally grooved Muscle, beautifully pearly within, and on the removal of the epidermis, having the same pearly lustre without. Fixed by a silken cordage (byssus) to piles, piers and wharves, and adhering to each other in similar situations. Almost incredible stories are told in the British publications of the strength and tenacity of these shells, in preserving from destruction structures of wood and stone, from the violent action of the waves by means of the byssus.

Cabinet of the Society.

MYTILUS. Latin. *A kind of Muscle.*
EDULIS. Latin. *Eatable. Edible Muscle.*

The common black or dark purple shell fish, so abundant on our muddy shores, and considered a delicate article of food in England, more than in this country ; against which a prejudice, founded in part on facts, exists. At certain seasons of the year, the animal feeds on the spawn of "The Five Finger," (Asterias) which renders it dangerous or at least suspicious ; instances of

severe indisposition being recorded from partaking, under such circumstances. Rather a pretty shell.

Brown's Zool. Text Book, pl. lxxxviii., fig. 16. Ibid, Conchol. Text Book, pl. xv., fig. 16.

Cabinet of the Society.

MYTILUS PELLUCIDUS. Latin. *Pellucid, transparent.*
Pellucid Muscle.

Described as a species, but in reality a variety of the preceding. Very beautiful and very various. Sometimes clear amber: or with a few delicate lines, or purple with violet stripes, or white with blue stripes. Found with Mytilus edulis.

Figured in "Letters to a Young Naturalist," p. 226, fig. 26. *b.*

Pennant's British Zoology, vol. v. plate 66.

Cabinet of the Society.

PECTEN. Latin. *A comb, (some have longitudinal ribs like comb teeth.)*

MAGELLANICUS. *Lamarck. (Supposed to have belonged to straits of Magellan.)*
Magellan Pecten.

A very fine and large Pecten, abundant at Eastport, Maine, a native on that shore. Epidermis, light brown, within dingy white.

Occasionally found on our shores. A single valve very much worn, I picked up near Winter Island, several years ago, and another, in possession of J. True, was gathered by him on the Lynn Beach.

Cabinet of the Society.

ANOMIA. Greek. *Anomalous.*
EPHIPPIUM, *L. Horse foot Anomia.*

Shell thin, paper-like, grey, one valve convex, the other plane, at the upper edge of which is a circular hole: (curious)

Occasionally met with on the beaches of Essex Co.

Blainville's Manuel, plate lix., fig. 3.

Bosc. Coquilles, vol. ii, plate xxx., fig. 1.

Letters to a Young Naturalist, p. 223, fig. xxiv. *b.*

My Cabinet.

TEREBRATULA. Latin, *the little peircer.* (*Alluding to its supposed habits.*)

SEPTENTRIONALIS. *Couthouy.* Latin. *Western.*

Western Terebratula.

Shell oval, valves unequal, one very much beaked and perforated, the other flat, both delicately ribbed, immaculate.

A single specimen of this elegant little shell, was procured from the stomach of a haddock, off Half-way Rock, Aug., 1838.

Also found on Lynn Beaches.

Boston Journ. Nat. Hist., vol. ii., pl., iii., fig. 18.

Cabinet of Dr. Prescott and of the Society.

The following belong to the Class XII. or MOLLUSCA, i. e. soft bodied animals, *with or without shelly coverings*, and are comprised within the 2d order, GASTEROPODA, *i. e.* having a foot immediately attached to the belly.

CHITON. Greek, *a coat of mail.*

FULMINATUS. *Couthouy.* Latin, *flamy.*

Zigzag or flamy Chiton.

The curious Multivalve scaly shells to which the present is referred, are familiar to every collector of foreign species. Others of native habitat have been long known, while several new species besides, have been lately discovered and described by Capt. Couthouy. Unlike the specimens from foreign seas, ours are small, yet beautiful. The beauty of C. fulminatus, it needs a close examination to develope ; but like many of the minute shells, is exquisitely marked.

Valves granulated in quincunx order, dotted with white, and having zigzag markings, on a red ground.

Found in the stomach of haddock, in Mass. bay, during the summer of 1838, by H. Wheatland ; also found on Lynn beach, by Dr. Wm. Prescott.

Described at length by Couthouy, in Boston Journ. Nat. Hist., vol. ii., page 80, pl. iii., fig. 19.

Cabinet of the Society.

PATELLA. Latin, *a little basin.* } (*Both in allusion to its*
ALVEUS. *Conrad.* Latin, *a trough.* } *figure.*)
SYN. PATELLOIDEA. (*Gaimard.*) See "Couthouy's Remarks on two species of Patelloidea." Boston Journ. Nat. Hist. Vol. ii., p. 171, &c.

A delicate, semitransparent, small shell, beautifully diversified in markings, spotted with white, scarcely exceeding one fourth of an inch in length.

Abundant on the sandy shores of the vicinity, especially near Orne's Point, North Salem, and contiguous to the Marine Railway, South Salem.

Journ. Acad. Nat. Sc. Phil., vol. vi., page 267, plate xi., fig. 20.

Cabinet of Boston Society of Nat. Hist., No. 777.

Cabinet of the Society.

PATELLA AMŒNA. *Say.* Latin, *pleasant, delightful,* (*significant of its beauty.*)

SYN. PATELLOIDEA. *Gaimard.*

A larger, thicker and more showy species than the preceding, and not so common. Within, variously marked with brown and white, sometimes with a deep margin of pure white.

Obtained by searching at low tide among the rocks, to which it will be found closely adhering.

Lynn beaches and other rocky shores on the coast of New England.

Described by Say, in Journ. Acad. Nat. Sc., Phil., vol. ii., p. 223.

Cabinet of the Society.

CREPIDULA. Latin, *a little slipper.*
FORNICATA. Latin, *an arch.*
Arched or convex Crepidula.

A Genus nearly related to Patella, yet quite distinct. Adherent to various marine substances, this shell seldom quits its residence; a striking similarity in habits to the preceeding.

The present species bears no unapt resemblance to a boat, with a small half deck; being more convex than most others.

Beautiful varieties may be obtained by careful search. Those thrown upon our beaches present little interest, being bleached in the sun. A favorable locality is on the flats and rocks, near Beverly bridge.

The fibres and sometimes the entire leaves, (fronds) of species of sea weed (Algæ) are often seen upon these shells. The Laminaria or kelp is not an unfrequent companion. This being produced from its seed-like bodies upon the shells, and growing in a calm sea throughout the summer months, is of no probable disadvantage; but no sooner do the autumnal storms commence, than the little shell fish is ungenerously torn from its situation, by the agitation of its unwieldy parasitic neighbor, to be cast upon the shore. Rolled pebbles of a large size are also lifted from the bottom, by the simple and perfectly natural agency of this marine vegetable.

Common on the beaches of Essex Co.

Cabinet of the Society.

CREPIDULA PLANA. *Say.* Latin, *flat.*
Flat slipper Shell.

A very pretty, pearly vitreous species; about an inch in length; found sometimes perfect, but more commonly much worn. Diaphragm or *deck* occupying half the length of the shell. Shell generally flat, but sometimes tortuous or reflexed, according as it has resided on a plane or curved substance.

Lynn beaches, rare.

Described in Journ. Acad. Nat. Sc. Phil., vol. ii., p. 226.

Say's Am. Conchol., pl. xliv.

My Cabinet and that of the Society.

ANCYLUS. Latin, *a buckler.*
RIVULARIS. *Say.* Latin, *belonging to streams.*
River Ancylus.

Shell very small, exceedingly thin and yellowish, sometimes white within when old and dead; resembling a minute Patella. Found under the leaves of the Yellow Water Lily, (Nuphar advena L.) in ditches, ponds, and sluggish streams.

Journ. Acad. Nat. Sc. Phil., vol i., p. 125.

My Cabinet.

VELUTINA. *Blainville.* SYN. GALERICULUM. *Brown.*
RUPICOLA. Latin, *living on rocks.*
Rock Velutina.

A very delicate shell, first discovered by Dr. Charles Pickering, (formerly of this city,) on the shores of this vicinity, affixed to rocks.

Fragile, almost transparent, covered with a brown epidermis; aperture very large, left side slightly reflexed into *an apparent columella :* whorls, two first small, body whorl large.

Is not this Oxynoe glabra; *Couthouy?* Of four specimens in my possession, no two are exactly similar. One is covered with the epidermis, and was taken from an haddock's stomach, from 15 fathoms of water. The three others collected at Phillips' beach by J. True, though evidently the same species, yet vary in themselves. The smallest, a little more than 0.02 inch long, has no perceptible reflexion, is covered with an epidermis, and has a dozen or more raised longitudinal striæ, which by comparison with the next specimen, seem confined to the epidermis ; its margin more reflexed; the last smooth, with minute striæ, light rose color. This gradation in the form of the left margin would seem to agree with Blainville's description of Velutina, which although "*Sans collumelle,*" yet presents, "*le droit se reunissant au gauche, par un depot calcaire, lamelleux.*"

These shells are worthy of being searched for, and would constitute no mean addition to any collection. A very fine specimen of extra size is in possession of Wm. Oakes, gathered by him on Ipswich beach.

Described and figured in Journ. Acad. Nat. Sc. Phil., vol vi., p. 266, pl. xi., figs. 17, 18, by T. A. Conrad.

See also Blainville's Malacologie, Art: *Velutina*, p. 469, and for Couthouy's *Oxynoe Glabra*, see Boston Journ. Nat. Hist., vol. ii., p. 90. Gould's Report, &c., April, 1838, Catal: New Shells.

The *Marine Shells* only, of the order TRACHELIPODA, are described, as follows.

NATICA. Referring *to its cockle or boat shape.*
HEROS. *Say.* Latin, *large.*
Say's large Natica.

A familiar and well known shell, sometimes called "cockle," and abundant on the muddy shores of our estuaries, and not uncommon on the beaches among kelp. Very little can be said in favor of its appearance, being of a dirty bluish color exteriorly, and within of a brownish hue, furnished with a large horny operculum. Sometimes of great size. Burrows, under the mud throwing it up, into little prominent heaps. One of those Mollusca, which bore other shell fish to extract their food.

Journ. Acad. Nat. Sc. Phil., vol. ii., p. 243.

Society's Cabinet.

NATICA. TRISERIATA. Latin. *Three banded.*
Three zoned Natica.

A smaller and very pretty species, with three more or less distinct interrupted bands of dark brown; found near the City Mills, among the Zostera, and on the shores of the basin. Also upon the beaches of the vicinity.

Cabinet of the Society.

NATICA CONSOLIDATA. *Couthouy.*
Thickened Natica.

A new species, native and abundant in this vicinity, but only taken from fish in deep water; it has been hitherto overlooked. About the size of the preceeding, more solid, of a dingy white; umbilicus nearly closed by the callus. Seems to be a common and favorite food of the haddock. Many specimens were collected for the Society by Dr. William P. Richardson, during the summer of 1838.

Boston Journ. Nat. Hist., vol. ii., p. 89, pl. iii, fig. 14.

Cabinet of Society.

MELAMPUS *Montf.*
BIDENTATUS. Latin. *Two toothed.*
Two toothed Melampus.

Shell thin, delicate, of a dingy brown, almost egg-shaped, aperture long, narrow, two prominent teeth on the *labium;*

sometimes prettily banded. Common on salt marshes, and may be found crawling up the stems of grass. Also washed on shore with Patella alveus, on the sands of Orne's Point, North Salem.

Journ. Acad Nat. Sc. Phil., vol. ii., p, 245.

Cabinet of the Society.

LACUNA. Latin, *a furrow.*

PERTUSA. *Conrad.* Latin, *cracked, or having a hole.*

Shell resembling Turbo or Paludina, having a spire of five whorls, sutures impressed. Columella deeply furrowed, with a profound umbilicus. Found on the beaches of Essex Co.—Described and figured in Journ. Acad. Nat. Sc., vol. vi., p. 266, pl. xi., fig. 19.

Cabinet of the Society.

NASSA. Latin, *Nassa, a bow Net ?*

OBSOLETA. Say. *No obvious signification.*

Whoever has observed the muddy bottoms of our docks and shores at low tide, must have noticed innumerable black shells, slowly crawling, or stationary. These individuals, thus humble in their localities, and devoid of elegance in their habits, constitute the species before us. On nearer inspection and better acquaintance they present a tolerable aspect, not wholly wanting in beauty. The aperture is of a deep blue purple, and beneath, the epidermis is a lighter blue tint. Numerous cancellate spots cover the spires. A species so familiar needs but a passing notice.

Described by Say, in Journ. Acad. Nat. Sc. Phil., vol. ii., p. 232.

Society's Cabinet.

NASSA TRIVITTATA. Latin, *three fillets.*

Three banded Nassa.

A much prettier species which I have found only in a dead condition, upon our sandy beaches. Pale yellow or white, granulated, with three reddish bands.

Lynn and Nahant beaches—common.

Journ. Acad. Nat. Sc. Phil., vol. ii., p. 231.

Cabinet of the Society.

TRICHOPTERIS. *Sowerby.* Greek, *triche ; hair, bristle.*
COSTELLATUS. Latin, *ribbed.*

Shell ovate, whorls six ; lowest larger and longer, having five or six prominent ribs, with alternate striæ, (markings.) Interior brownish. Epidermis, yellowish white : occasionally hairs or bristles occur at the edge of each successive growth, giving the shell a hairy appearance, and suggesting its generic name. Might be mistaken for Purpura, but very distinct.

Described by Couthouy, in Boston Journ. Nat. Hist., vol. ii., pl. iii., fig. 2.

Jay's Catalogue of Shells, p. 86, pl. i.. figs. 19 and 20.

Taken off Half way rock and Nahant.

Cabinet of Society.

BUCCINUM. Latin, *a trumpet.*
UNDATUM. Latin, *wavy or waved.*
The Wavy or Undulated Buccinum.

A fine large univalve, seldom seen in perfection on our beaches, although very fine on the shores of Maine. Shell three or four inches long, ovate conical, ventricose, obliquely furrowed and transversely striated. Aperture of a fine yellow : edge of aperture white.

Brown's Zool. Text Book, p. 392, pl. lxxxiv., fig. 14.
" Conchol. " " pl. xi. fig. 14.

Blainville's Manuel, pl. xxii., fig. 4.

Letters to a Young Naturalist, p. 216, (excellent.)

Beaches in Essex County,

Cabinet of Mrs. Dunlap, Cabinet of Society and my Cabinet.

PURPURA. Latin, *affording a purple color.*
LAPILLUS. Latin, *stone.*
The Stone Purpura or Dog whelk.
SYN. BUCCINUM LAPILLUS. *L.*

The most common white cockle upon the rocky shores of our coast, frequently used by marine anglers for bait, in catching sea perch, (Crenilabrus bergall) varies in color from pure white to brown, yellow and reddish, sometimes black—banded, often beautiful.

This little shell furnishes the identical color rendered so famous as the Tyrian dye. Linen, accidentally spotted by it, has retained its indelible impression unchanged by any application to remove it. Equally common on the English coast as on ours. See Drummond's Letters to a Young Naturalist, p. 233.

Cabinet of the Society.

PURPURA IMBRICATA. *Lam.* Latin, *imbricate or scaly.*

An evident variety of the preceding, and found in all stages of asperity or smoothness, in still waters, and even on our wave beaten coast. The imbricate or scale like processes upon the whorls, give them a curious and pleasing appearance.

Among Ulva and Zostera (sea weeds) near the City Mills.

Cabinet of the Society.

FUSUS. Latin, *a spindle,* (*alluding to their usual form.*)

DECEMCOSTATUS. *Say.* Latin, *having ten ribs.*

Ten ribbed Fusus.

Fragments only, of this fine native shell are usually found upon our beaches ; and occasionally a perfect specimen, but bleached and dead. Very beautiful and perfect specimens I have received from Dr. Ray, of Eastport, Me., where it occurs in native locality.

Shell two and a half inches long ; whorls five or six, *with ten very prominent transverse ribs on the body whorl,* a character which readily distinguishes the species : minuter transverse and longitudinal striæ between the ribs. Aperture about half the entire length. Interior pure white, with brown markings on the lip, (sometimes grooved) corresponding with the ribs. Epidermis cinereous. Lynn beaches.

My Cabinet—Cabinet of the Society.

FUSUS CORNEUS. *Say.* Latin, *horn like.*

Horn colored Fusus.

Another fine species, usually found in more perfection than the preceding. Shell more elongated ; volutions seven or eight, sutures profound. Perceptibly striated transversely, covered with a light green epidermis which when perfect gives a fine aspect to the shell. Beak much produced. Aperture more than half the entire length ; pure white within.

In the young, frequently taken from the stomach of fish, and about half an inch long, the transverse striæ are much more perceptible.

Say's Am. Conchol., plate xxix.

My Cabinet.

FUSUS CINEREUS. *Say,* Latin, *ashen.*

Ash-colored Fusus.

Shell, short fusiform, cinereous without, reddish brown within; whorls five or six with thick longitudinal ribs, about eleven of which are on the body whorl ; beak short and a little reflected—outer lip somewhat crenate. Length about two inches. Common in our estuaries, especially in this vicinity, about the City Mills.

Described by Say, in Journ. Acad. Nat. Sc. Phil., vol. ii., p. 236, and in his Am. Conchol., pl. xxix.

Cabinet of the Society.

FUSUS HARPULARIUS. *Couth.* Latin, *resembling a harp.*

Shell, small, oblong, turreted, whorls about eight, with numerous oblique ribs ; canal short, inclined to the left.

Described in Boston Journ. Nat Hist., vol. ii., p. 106, pl. i., fig. 10.

Found in abundance on Lynn beaches, by Dr. Prescott]

His Cabinet and Cabinet of Society.

TURRITELLA. Latin, *diminutive. A little turret.*

EROSA. *Couth.* Latin, *eaten or eroded.*

Shells turretted, whorls about ten, gradually tapering to a point ; transverse furrows on each whorl three to five. Upper whorls *much eroded.* Color reddish brown or lilac ; with an epidermis.

An exceedingly pretty little shell, first described by Captain Couthouy, who found it in the maws of fishes caught in our bay. Specimens taken in the same manner off Half-way rock, last summer, by Dr. Wm. P. Richardson, were presented to the Society. A species of Pagurus, (Hermit crab) seems to select this shell for its favorite retreat.

Boston Journ. Nat. Hist., vol. ii., p. 103, pl. iii., fig. 1.

Cabinet of the Society.

TURBO. Latin, *a wreath or whorl.*

PALLIATUS. *Say.* Latin, *having a cloak.* (*No obvious signification.*)

Shell, almost oval, spire very obtuse ; length about one third of an inch.

A most common and exceedingly pretty little native univalve, profusely abundant on the Fucus and rock weed of the shores in the neighborhood. With a little attention, several interesting varieties may be gathered, sometimes golden yellow, sometimes orange, brown, green, dark olive with broad black bands ; cinerous with narrow brown lines, and occasionally these lines, (always transverse) are in pairs.

Description of the animal : Tentacula two, filiform ; eyes black, conspicuous at the base of the tentacula. Tentacula and foot pale reddish yellow.

Journ. Acad Nat. Sc. Phil., vol. ii., p. 240.

Society's Cabinet.

TURBO VESTITA. *Say.* Latin, *having a garment.* (*Probably alluding to its dirty pigment.*)

In constant contiguity with the preceding and equally interesting. Shell conic ; whorls six ; spine elongated ; suture between the whorls, deep. This shell is sometimes elegantly reticulated, with whitish spots on a greenish ground.

Every where on the rock weed (*Fucus nodosus*) of our shores.

Journ, Acad, Nat. Sc. Phil., vol. ii., p. 241.

Cabinet of the Society.

TURBO OBLIGATUS. *Say.*

Found with the two preceeding, but in my own experience much rarer. Whorls five, with prominent transverse wrinkles, and slight longitudinal striæ. Labrum considerably thickened ; edge of the labium paler than the interior of the aperture.—Length about a third of an inch.

Description of the animal : Tentacula black on the upper side, and white on the under side ; reddish or crimson at base, near the eye which is black ; foot cinereous above and white beneath. In a specimen collected in Oct. 14, 1838, were numerous eggs. Shores of Massachusetts bay.

Journ, Acad. Nat. Sc, Phil,, vol. ii., p. 241.

Cabinet of Society.

TURBO INFLATUS. *Totten.* Latin, *swelled.*
Totten's swollen Turbo.

A very delicate and pretty species, not so common as the preceding, but found by a careful investigation. Color, "brownish yellow or horn color: operculum round, horny, multispirate."

Length about a third of an inch.

Discovered and described by Lieutenant Totten, in Silliman's Journal, vol. xxvi., p. 368, fig. 5 of plate.

Found near City Mills, by J. True.

My Cabinet.

TURBO MINUTUS, *Totten,* Latin, *minute, small.*
Little Turbo.

Shell very small, conic, thin, whorls six. Color yellowish or brown, within whitish. Length an eighth of an inch. May be found in profusion adhering to the Confervæ in the ditches on salt marshes.

Totten, in Silliman's Journ., vol. xxvi., p. 369, fig. 6 of plate.

My Cabinet and Cabinet of Society.

TURBO INCARNATUS. *Couthouy.* Latin, *flesh colored.*
SYN. MARGARITA. *Sowerby.*

An exceedingly beautiful species, taken from stomachs of cod and other large fish, by Capt. Couthouy, and described by him with the following cospecies. Shell thin, dark red, interior perlaceous, resplendent.

A single specimen exists in the Society's Cabinet, collected on Phillips' beach, five years since, and others have been subsequently found at the same place, by J. True.

For minute description, see Boston Journ. Nat. Hist., vol. ii., p. 98, pl. iii., fig. 13.

Cabinet of Society.

TURBO CINEREUS. *Couthouy.* Latin, *ashen.*

Shell thin, grey colored, whorls five, with numerous transverse elevated striæ; umbilicus deep.

Couthouy in Boston Journ. Nat. Hist., vol. ii., p. 99, pl. iii., fig. 9.

Beaches of Essex County; rare; taken from fish in deep water. Found with the living animal on Phillips' beach, by J. True. Cabinet of the Society.

TURBO OBSCURUS. *Couthouy.* Latin, *dull, obscure.*

A pretty new species, more or less pearly under the epidermis; thin; a single line on each whorl; aperture nearly circular; operculum horny.

Described by Couthouy, in Boston Journ. Nat. Hist., vol. ii., p. 100, pl. iii., fig. 12.

Nahant and Lynn beaches.

My Cabinet—Cabinet of Society.

ADDENDA.

CANCELLARIA BUCCINOIDES. *Couthouy.*

Boston Journ. Nat. Hist., vol. ii., p. 105, pl. iii., fig. 3.

Shell oval; whorls five. Cross barred with striæ and points. Columella with three oblique striæ. Color white; resembles somewhat, Nassa.

Stomach of fish at Half-way rock, and also on Lynn beaches. Cabinet of the Society and of Dr. Prescott.

ROSTELLARIA OCCIDENTALIS. *Guerin; Mag.*
Western Rostellaria.

Fragments of this fine shell at Phillips' beach.

I possess a tolerable specimen, which I collected at Saco, Me., in the summer of 1834.

PYRAMIS. *Brown.*
STRIATULUS. *Couth.* Latin, *slightly striated.*

Shell elongated, pyramidal; whorls about nine; aperture ovate; color, bluish white. Rare. Lynn beaches.

Boston Journ. Nat. Hist., vol. ii., p. 101, pl. i., fig. 6.

Cabinet of Dr. Prescott.

MODIOLA DISCREPANS. *Montague.*

A small, thin, delicate shell, with twelve or more crenated elevated lines on the posterior part of the valves, an elevated single line passing from the apex of the shell obliquely to base of valve ; and otherwise minutely striated with a pale yellowish epidermis, and white perlaceous within ; pretty.

Lynn and Nahant.

My Cabinet and Cabinet of Society.

Gould's Report and Catalogue, 1838.

THRACIA CONRADII.

Single valves of this shell are found on Lynn beaches.

Cabinet of Dr, Prescott and of the Society.

BULLA TRITICEA. Latin, *wheat,* (*like a grain of wheat.*)

A very delicate, small, native species, found occasionally on our beaches. Shell cylindric, covered with brownish or rusty epidermis, and longitudinally and transversely striated ; columella white, and reflected on the body of the shell.

Lynn beaches.

Described by Couthouy, in Boston Journ. Nat. Hist., vol. ii., p. 88, pl. ii., fig. 8.

Presented to the Society's Cabinet, by Dr. Prescott.

SCALARIA. Latin, *a stair case.*

SUBULATA. *Couth.* Latin, *awl shaped.*

Awl shaped wentle trap or stair case shell.

A beautiful little native species of this fine genus so well known to collectors. Shell tapering to a sharp point ; whorls nine ; longitudinal ribs ten on the body whorl ; pure white and deflected a little from the base of the ribs on the next whorl. Color brownish between the ribs and transversely striated.

Described in Boston Journ. Nat. Hist., vol. ii., p, 94, pl. iii., fig. 4.

Lynn beaches.

Cabinet of Dr. Prescott and of the Society.

SOLEMYA BOREALIS. *Totten.*
Northern or Boreal Solemya.

Shell oblong, fragile : hinge without teeth. Valves radiated transversely. Epidermis, dark brown, extending beyond the edge, where it is paler and torn. Color within, greyish blue.

Resembles Solemya Velum. *Say.* See Journ. Acad Nat. Sc. Phil. vol. ii. p. 317. ; and description on page 53 of this paper.

See Totten, in Silliman's Journ. vol. xxvi. p. 368. fig. 1.

Found on Lynn beach, by Dr. Prescott, (a fine specimen.)

NOTICE OF THE OCCURRENCE OF SPECIMENS OF VESPERTILIO PRUINOSUS. *Say.* HOARY BAT. BY H. WHEATLAND.

Description. EARS large and short ; aperture of the nostrils widely separated. Canine teeth large and prominent ; on the upper jaw, one distinct cutting tooth on each side, conical in shape and placed very near the canine ; under jaw, six incisors. The under side of the anterior margin of the brachial membrane covered with fur of a yellowish white color ; the upper side of the interfemoral membrane is likewise covered with fur, but of a ferruginous grey color ; the fur of the back, long, black brown at base, then pale brownish yellow, then blackish and then white, thus giving to its general appearance a variegated hue, in which the white however predominates : colors beneath similar to those on the back.

Long's Expedition to the Rocky Mountains, vol. i., p. 167.

Godman's American Natural History, vol. i., p. 68, pl. iv., fig. 3.

Harlan's Fauna Americana, page 21.

Harlan in American Journal of Geology, page 219.

Gray in Jardine's Magazine of Zoology and Botany, vol ii., p. 498, classes the present species in his Tribe iii. and Genus Scotophilus of Leach.

This beautiful and somewhat uncommon species of our American Mammalia, has been discovered as resident in this vicinity. Three specimens have been presented to the Society's collection.

The first was captured September 14th, 1838, while hanging from a grape vine contiguous to the residence of Mr. Nath. Pope, (near the crossings of the Andover and Newburyport turnpikes) Danvers. Its dimensions were as follows. Extent of wings 16 inches. Length from vent to mouth 3 inches. Total length from tip of nose to extremity of caudal membrane 5 1-2 inches. Breadth of forehead between the ears three fourths of an inch.

The second specimen was captured by the sons of Mr. John Preston, about a mile north of the Village meeting house, Danvers, on the first of October, 1838 ; confined in the Society's rooms, it survived several days.

The third was taken on the 22d of November, 1838, by Mr. Rufus Tapley, Danvers, near the last mentioned place.

Say, in Long's Expedition to the Rocky Mountains, has given the first description of this species of Bat ; and we are indebted to him for nearly all that has been written on its habits and characteristic marks. He mentions it as being common in the vicinity of Engineer Cantonment, where the expedition wintered ; also of its being observed near Council Bluffs, by Mr. Nuttall ; and that the late Professor Barton, presented a specimen of this bat, that had been captured in Philadelphia, to the Philadelphia Museum. It is probably common in the Western States, but with us it must be considered as remarkable and rare. About thirty years since, a specimen was observed by Mr. Abel Nichols, of Danvers, in this vicinity.

The present species may be considered an important addition to the Natural History of Essex County, and, in this point of view, I trust, it will prove interesting.

A SKETCH OF THE GEOLOGY AND MINERALOGY OF THE SOUTHERN PART OF ESSEX COUNTY, IN MASSACHUSETTS. COMMUNICATED TO THE ESSEX COUNTY NATURAL HISTORY SOCIETY, APRIL 24, 1839. By Wm. Prescott.

The following sketch embraces the city of Salem and the towns of Beverly, Danvers, Marblehead, Lynn, Nahant,* Saugus and Lynnfield. The principal rocks, are Sienite, Greenstone, Porphyry, Silicious Breccia and Brecciated Porphyry, Chlorite Slate, Argillaceous Slate, Silicious Slate, Magnesian or Verd d'Antique Marble, and Varioloid Wacke. Sienite and Greenstone are by far the most abundant rocks.

Granite.

No bed or deposit of granite occurs in this section of Essex County. A few scattering bowlders only are found in Lynn and Saugus, which increase in size and frequency as you proceed north, through Danvers and Lynnfield, towards the beds of Granite in Boxford. These bowlders of granite are of a very dark color from the black mica which they contain, and in the north part of Danvers, frequently occur several feet in diameter.

Bowlders and masses of a light colored granite are frequently seen cast upon the shore, on the east side of Nahant, and on Lynn beaches.

Gneiss.

The rocks at the north west part of Danvers are more or less stratified, evidently the termination of the Gneiss and Mica slate formations. This structure may be seen as far as Newburyport turnpike, and occurs rarely south east of that road.

* Notwithstanding Nahant constitutes a part of the town of Lynn, yet, isolated, as it is, from the main land, stretching several miles into Massachusetts Bay; and being in many respects peculiar in its geological features, it will in the following sketch, be made a locality for distinct reference. For particular localities, the reader is referred to Lewis' map of Lynn and Saugus.

Argillaceous Slate,

Occurs at the south east extremity of the promontory of Nahant, associated with flinty slate and argillaceous limestone. Its color is black, ash color, and occasionally striped with green and gray.

Sienite.

An extensive bed of sienite extends in a north east and southwest direction across the south part of Danvers, the south part of Lynnfield, the north part of Lynn, and the north part of Saugus to the town of Chelsea. This range is bounded by Tapley's brook on the south east, and by Proctor's brook on the north ; and is from one to three miles in width, forming in many places, high hills of solid rock, and craggy cliffs. Bowlders of sienite from this locality are easily distinguished from those originating from any other. No bowlders of this sienite are to be found to the north of Proctor's Brook, the northern boundary of the bed. In Danvers it is extensively quarried and wrought into mill stones, and into all those architectural articles for which granite is useful. It yields a considerable income to the citizens of Danvers, and has become very celebrated in making mill stones of a very superior quality.

Another range of sienite, but of different quality, extends from Flax pond in Lynn, to the ocean at Swampscut, (also in Lynn.) This sienite is traversed by numerous trap veins, the feldspar is of a red color, and the proportion of hornblende much less than in the Danvers sienite. This variety of sienite extends on the sea coast from King's beach, Lynn, to the line of Marblehead.

A bed of sienite occurs at Beverly, extending in a north east direction from the north end of Beverly bridge, towards the town of Essex. This bed is but a few rods in width ; greenstone trap prevailing on both sides of the road, leading from Beverly to Gloucester, on the south east ; also on the west side of the most eastern branch of the North River, on the north west. This Sienite is also traversed by numerous dykes or veins of trap, which have been injected into it ; some of which are several feet in thickness. In excavating for the Eastern Rail Road, sixty or eighty rods north of Beverly Bridge, these trap dykes are exposed to the depth of twenty or thirty feet ; several of which are

so completely disintegrated as to be converted into a perfectly friable earth, or soil, of a dark brown color. This gives to these veins a singular appearance and renders them worthy the attention and inspection of the Geologist.

The north eastern section of Nahant, is also composed of sienite. The west part of Nahant, called Bass Point, is composed of a different species of sienite, the hornblende and feldspar being in nearly equal proportions.

At the south east part of Little Nahant, occurs a singular rock, composed of hornblende, and a dark reddish brown feldspar, and may be classed as a variety of sienite.

In general sienite passes into greenstone, and often by insensible shades, and greenstone may be seen protruding above the surface, near the base of all the hills of sienite, and often cropping out at considerable elevations. The same occurs among all the porphyry hills in Lynn and Saugus.

Although bowlders of the Danvers sienite are never seen north of the bed, yet at the south, they occur scattered over the greenstone ridges of Salem and Marblehead, and over the porphyry ridges of Lynn and Saugus. Many are found on Nahant and a *large* number occurs on Little Nahant. These bowlders resemble the Danvers sienite, and differ from any found in the vicinity.

A rock, somewhat different from any other in its composition, but which may be classed with the sienite rocks, occurs in the west part of Topsfield, and the east part of Middleton, near their junction with the north part of Danvers. This rock is composed of red feldspar, quartz and green chlorite ; the chlorite taking the place of hornblende. In passing north through Danvers, you meet with small bowlders of this rock, several miles before reaching the north line of the town, and as you advance north they increase in size and frequency ; until (within a mile or a mile and a half of the ledge) the stone walls are chiefly composed of it. This ledge or parent rock, you will find in place on both sides of Nichols' Brook, in the corner of Middleton and Topsfield. The general aspect of this rock, from the red feldspar, which is the most abundant ingredient, will very readily distinguish it from any other in this section of the county.

In some portions of it, the feldspar is compact, and the mass appears almost homogeneous.

Greenstone.

Greenstone trap is the most abundant rock in this section. It prevails in Marblehead, Salem, all that part of Danvers north and east of Proctor's Brook, the whole of Beverly, with the exception of the bed of sienite before described, and the east part of Lynn. Greenstone may be seen also, protruding above the surface, near the base of all the hills of porphyry, in Lynn and Saugus, and also, at the base of the hills and ledges of sienite in Danvers, Lynn, Saugus and Beverly. Greenstone, occurs on the west side of Nahant, including Black Rock, and also on the east part of Little Nahant.

Dykes of a fine grained compact greenstone or trap, from one inch to forty feet in diameter, traverse the slate and sienite in every section of Nahant and Beverly, as well as the coarser variety of greenstone in Salem and Marblehead.

The greenstone, in this region, presents a considerable diversity of aspect, depending on the general structure, or on the size, proportion and mixture of its constituent parts. In some of the more common varieties, the two ingredients are in distinct grains of considerable size, like those of granite, aud sometimes the grains are so minute, and so intimately and uniformly mingled, that the mass appears altogether homogeneous.

The chief part of the greenstone, especially in Salem and Marblehead, is injected by numerous veins of sienite, or rather of quartz and feldspar, the hornblende generally being nearly or quite wanting. These veins, which traverse the greenstone in every direction, are, in many places so numerous as to give the rock quite a brecciated appearance. This appearance is very conspicuous at the south end of Beverly bridge ; along the seashore at Marblehead, and various other places, where the rocks have been exposed by blasting for the Eastern Rail Road, and for other purposes.

Many of the trap dykes are rendered porphyritic, which, by contrasting the crystals of white feldspar, with the black hornblende of the trap, becomes quite beautiful when polished.

Greenstone porphyry, and compact feldspar porphyry passing

into greenstone porphyry, some of which contains crystals, of a beautiful variety of green feldspar, occurs at Nahant and several places in Lynn, as will be more fully explained under the head of porphyry.

Porphyry.

The only range of porphyry, extends from the village of Wood End in Lynn to Chelsea, through Lynn and Saugus. This range is bounded on the north, by the range of sienite before described, and on the south, by tide water, varying in breadth from one to two miles, forming a range of barren hills and craggy cliffs. The base of this porphyry is compact feldspar, its colors various, but generally some shade of red or brown; but grey, purple and black are not uncommon. Some portion of it is destitute of crystals, so from this circumstance and its peculiar hardness and fracture, it has generally been considered as a variety of hornstone.

The eminence called *Lover's Leap* in Lynn, and a spur of Pine Hill, half a mile west of Lover's Leap, are composed of a solid mass of this species of compact feldspar or hornstone. It also occurs in beds throughout the whole range of porphyry. The most important localities of this variety of hornstone, are Red Rock, at the west end of King's beach, Wood End, vicinity of High Rock, vicinity of India Rubber Manufactory, Lover's Leap, south east spur of Pine Hill, Lynn, besides several places in Saugus.

Several of the trap veins traversing the trap rocks in the various localities of this formation, are rendered porphyritic by containing distinct crystals of feldspar. There are several of these veins or dykes on Nahant, Marblehead and Beverly, which contain crystals from half an inch to two inches in diameter, some of which are *hemitrope*. This forms the black porphyry of the ancients.

The compact feldspar porphyry receives a good polish and will become valuable whenever the wealth and demands of the country shall be sufficient to defray the expenses of quarrying and working it. A peculiar variety of greenstone porphyry occurs on Bayley's hill, on the west end of Nahant. The imbedded crystals are green feldspar, some of which are beautiful.

Compact feldspar porphyry passing into greenstone porphyry occurs at Nahant, and about 80 rods south of the *Dye Factory*, Lynn.

Silicious Breccia and Brecciated Porphyry.

An interruption exists in the porphyry range, before described, by a bed of breccia, which extends quite across it, on the east side of Saugus river. This bed is about half a mile in width from its eastern boundary to the river on the west, and not far from one mile in extent from the sienite on the north, to tide water on the south.

It has the appearance of being thrown up, in great confusion, forming precipitous cliffs and narrow ravines. A considerable portion of this formation is a conglomerate rock of the grey-wacke series.

The celebrated *Pirate's Glen*, is situated in this region. This bed of Breccia embraces also, *Willis' Hill*, (or *Tower Hill*,) on which is situated the Lynn Alms House. An eminence on the west side of Saugus river, about half a mile north west of Childs' Mills, has its southern portion made up of porphyry, and the northern of the same species of breccia, which appears to be composed of fragments of porphyry, compact feldspar, hornstone, jasper, serpentine, &c. The greatest part appears to be brecciated porphyry, but large portions of it are composed of fragments of the other rocks, but quite destitute of fragments of porphyry, forming a pure silicious breccia. Specimens of this variety can be obtained, that are very beautiful.

Brecciated porphyry occurs also at Red Rock, Lynn. And it is a fact worthy of remark, that distinct and isolated fragments of compact feldspar, exist in nearly all the porphyry throughout the whole range ; but in some places they abound much more than in others.

Puddingstone.

A few bowlders and masses are occasionally found, thrown upon the eastern shore of Nahant.

"Amygdaloidal Trap."*

In Saugus, on the west side of the river, between Childs' mills and Saugus factory, is a round isolated hill, from seventy five to one hundred feet in height, in which occurs a rock of moderate hardness, green color, and argillaceous odour when breathed on, containing imbedded in its substance, innumerable white spheroidal nodules of quartz, feldspar, and carbonate of lime, from the size of a pin's head to that of a rifle bullet; but few however exceed the size of an ordinary pea. This is the *varioloid wacke* of Professor Hitchcock.

About half a mile south by west of the former locality, occurs another of the same rock, but the imbedded nodules are not so numerous as in the former, and some portions of the rock in both localities, are entirely destitute of these imbedded nodules. At the latter locality are several bowlders, of a different variety of the same rock, of a rich chocolate color. The parent bed from whence they proceeded has not been discovered. The imbedded nodules are similar to those in the green variety, and of the same white color. In some portions of one of these bowlders, however, the imbedded substance was of a greenish color, and not so distinctly nodular.

A little south of the first locality, (the round hill) and in the vicinity of the last, occur numerous bowlders of a conglomerate variety of this rock, consisting of fragments of rounded masses of different varieties, some of which are of the amygdaloidal variety, others not; some a darker, others a lighter green; some more, while others are less compact. Some portion of this conglomerate forms a beautiful breccia, and is probably of the grey-wacke series.

Magnesian, Serpentine or Verd d'Antique Marble.

A valuable and interesting bed of Magnesian Marble occurs in Lynnfield, and a quarry has been opened near the centre of the town. It is said to extend from three to five miles in a north east and south west direction, but in no place, except at the quarry, has it been found sufficiently soft to be worked with ease.

* Varioloid wacke of Prof. Hitchcock, but Dr. Jackson considers it as Amygdaloidal Trap.

When first quarried it can be cut with a saw or turned in a lathe, but in this state it will not receive so good a polish. After being exposed to the atmosphere it becomes dry, much harder, receives a good polish, and is a good substitute for marble where stones of a dark color are preferred.

Near the surface, it is so much divided by veins of asbestos and other foreign substances, as to be of little value, except for the manufacture of Epsom Salts ; but at the depth of fifteen or twenty feet, slabs sufficiently large can be obtained, to answer all ordinary purposes.

This bed, in all probability, is the dividing line between the gneiss formation on the north west and the sienite on the south east.

From 100 parts of this rock, Dr. C. T. Jackson obtained by analysis :

Silica,	37
Magnesia,	42
Oxide of Iron,	2
Water,	15
Loss,	4
	100

Dr. Jackson says, that from 100 grains of the rock, united with sulphuric acid, may be prepared 127 grains of dry Sulphate of Magnesia, or 198 grains of crystallized Epsom Salts.

This will give, by decomposition with the carbonate of soda or potassa, 98 grains of the common carbonate of magnesia of the shops.

In Roxbury, works have been erected where Epsom Salts are now extensively manufactured from this rock.

Simple Minerals.

Class I. Order III. Genus III. Lime.

Species 1. *Fluate of Lime.* A few specimens at Nahant, one or two small crystals of Derbyshire spar, also at Nahant.

Species 2. *Carbonate of Lime. Calcareous Spar.*

Var. 1. The crystallized and laminated, occur at Nahant, and at New Cove, Lynn, some brilliant specimens have been obtained; but it generally occurs in thin veins, in the trap rocks at the above, and at some other places on the sea coast.

Var. 2. Fibrous carbonate of lime—one locality of this variety has been found on the east side of Nahant, at Saunders' Ledge.

Species 3. *Magnesian Carbonate of Lime.*

Var. 1. Rhomb spar occurs at the south eastern part of Nahant, in a vein in the slate.

Var. 2. Dolomite or granular Magnesian limestone occurs, associated with the argillaceous and flinty slate, on the south eastern part of Nahant, between *East Point* and *Castle Rock.*

Species 4. *Silicious Borate of Lime,* (*Datholite.*)

A mineral occurs incrusting the trap rocks at Saunders' Ledge, Nahant, which appears to be datholite; but as it has not been analyzed, I am unable to speak with confidence.

Genus IV. Magnesia.

Species 1. *Carbonate of Magnesia.*

Carbonate of Magnesia occurs at Lynnfield, in veins, in the magnesian marble of that place.

Class II.

Species 13. *Quartz.*

Var. 1. Greasy quartz, occurs in veins in various parts of Lynn and Nahant, but New Cove is the most celebrated locality.

Var. 2. Bowlders of *common* and greasy quartz, are to be found in Danvers, and the numbers increase as you approach the northern limits of the town.

Var. 3. A few pebbles of *yellow quartz* are to be found on the borders of Nahant.

Var. 4. *Radiated and drusy quartz,* occurs in veins in the slate, on the south eastern part of Nahant; also on the west side of *Bass Rock,*

Var. 5. Crystallized quartz may be found in many places, but very few specimens worthy a place in a cabinet.

A very interesting variety of crystallized quartz, however, occurs in a vein in the trap rocks, near Crystal Beach, Nahant. Many of the crystals are tinged with the green chlorite, which is diffused in the trap.

The width of the vein is from three to eight inches, and the crystals being attached to the sides at right angles, are variously interlaced with each other; making it difficult to procure good specimens.

The crystals are covered with a coating of drusy quartz, and many of them appear to have been once broken, the two extremities more or less displaced, and reunited, forming an offset. The crystals of quartz at this locality are very easily broken; occasioned by the chlorite.

Sub species 1. *Prase.*

Epidote intimately combined with either quartz, feldspar, or hornblende, occurs abundantly at Nahant, and from thence along the coast to Marblehead.

Sub species 2. *Chalcedony.*

A few small pieces of chalcedony have been found on the beaches in Lynn, and among the gravel upon the track of the Eastern Rail Road.

Sub species 3. *Jasper.*

Saugus, has long been known as a celebrated locality of jasper. It occurs of a beautiful red color, in a plain, on the west bank of Saugus river, about one mile northerly of Childs' Mills. Some portions of it are striped, spotted, or clouded with grey or white. Until recently, this was the only locality of jasper known in this section.

It is now, however, well known that great abundance of different shades of red, purple, green striped, spotted, clouded, variegated and veined jasper, exists, about half a mile west and south west of the former locality, where the finest specimens of each variety may be obtained. Some portions of the variegated, exhibit a beautiful mixture of green and purple, others of red and grey, and others of purple and grey, (or white) with numerous ramifications of scarlet colored veins.

The veined jasper is a great curiosity; it is a deep red, or

dark purple, containing numerous ramifications of minute veins of a scarlet color, exactly resembling the minute ramifications of injected blood vessels. These veins become very conspicuous upon being moistened with the breath.

Numerous pebbles, bowlders, and masses of beautiful red, purple, striped, and variegated jasper are thrown upon the south west shore of Nahant, between Bass Point and Crystal Beach. Some of the finest specimens have been obtained from this place. The locality of the bed must be beneath the ocean.

Sub species 4.

Porcelanite and silicious slate, exists at the south east part of Nahant, associated with argillaceous slate, argillaceous carbonate of lime, &c. It occurs also in the western section of Topsfield, and eastern section of Middleton, and bowlders of it may be found in the north part of Danvers.

Species 14. Mica.

A foliated variety of black mica occurs on Salem Neck, associated with feldspar and foliated hornblende. The lamina vary in size from an inch in diameter to minute scales; and when associated with foliated hornblende, it is difficult for the eye to distinguish one from the other. In this instance the mica seems to have assumed the place of quartz, which enters largely into all the compounds of hornblende and feldspar, but which in this locality is entirely wanting.

Species 15. Schorl.

Beautiful radiated black schorl, has been found by Dr. A. Nichols, on a bowlder of hornblende rock, about half a mile north of the South Village in Danvers.

Species 16. Feldspar.

Feldspar, exists in great abundance. It forms an essential ingredient in sienite and greenstone, and occurs crystallized in various species of porphyry, and associated with quartz, hornblende, epidote, &c. It is of a white, gray, brown, green and red color, and of various shades.

Large hemitrope crystals of a grey feldspar, with a pearly lustre, occur in the trap rocks, about the middle of the south eastern shore of Little Nahant.

A variety occurs at Marblehead, which very much resembles the opalescent feldspar or Labradorite. It is of a grey color, and occurs in veins in the trap rocks.

Compact feldspar exists in great profusion, especially throughout the region of porphyry. A variety occurs at Beverly, (Hospital Point) in which are imbedded innumerable minute crystals and grains of quartz.

Most of the hornstone and jasper, in Lynn and Saugus, are supposed to be compact feldspar, more completely fused.

Species 17. Epidote.

An exceedingly beautiful variety of epidote exists, in great plenty, in veins, in the sienite and greenstone at Nahant, either alone, or associated with quartz, hornblende, and other minerals. It occurs also with quartz, in a vein in the sienite at New Cove, Lynn. Associated with other minerals it occurs throughout the coast, from Nahant to Salem, Marblehead and Beverly, forming prase and other aggregates. Epidote also exists in narrow veins, throughout the whole greenstone region.

At Nahant, the epidote presents all shades of green, from a greenish yellow to a blackish green, and some specimens are almost black.

Species 18. Prehnite.

A beautiful variety of crystallized prehnite was discovered at Saunders' ledge, east shore of Nahant, in Sept., 1837. It was expected this would yield a supply of specimens sufficient for any demands, but upon blasting, it proved that the inroads of the ocean had nearly exhausted the vein. A few good specimens, only, could be obtained.

Species 19. Asbestos.

Fibrous ligniform and compact asbestos, occurs in veins in the hornblende rocks, on the east side of Nahant, (marked on Lewis' map, "the Iron Mine,") These veins are from a quarter of an inch to three inches in diameter.

Species 20. Hornblende and Hornblende Rock.

Hornblende, is diffused in great abundance, forming essential ingredients in greenstone and sienite. It occurs crystallized, foliated and compact, at Nahant, Lynn, Salem, Marblehead, and Beverly. The principal localities of crystallized hornblende are, the eastern part of Nahant, near Hospital Point, Beverly, and Marblehead. The most celebrated localities of the foliated variety occur at the eastern part of Nahant, and Salem Neck. In the latter place it is associated with mica. Foliated hornblende occurs also in numerous bowlders of hornblende rock, which are found scattered in great profusion in almost every part of Danvers. These hornblende rocks, are more or less impregnated with chlorite, which imparts to them a greenish color; the chief of the hornblende is of a jet black, some however has a tinge of green.

A bowlder of hornblende rock has been found in Danvers, containing columns or needles of black hornblende, from half an inch to two inches in diameter, and several inches or a foot in length, crossing each other in various directions, and which, contrasted with the quartz and white feldspar, of which the base of the rock is composed, give it a picturesque appearance, not unlike rocks that are traversed in like manner by crystals of schorl. Bowlders of an indistinct variety of hornblende slate occur at Nahant.

Species 21. Chlorite and Chlorite Slate.

Chlorite and chlorite slate exists in the northern and eastern sections of Lynnfield, and the western and north western parts of Danvers. It exists in great abundance in Reading, and part of Middleton, from whence great numbers of bowlders have been carried southwardly into those towns lying in that direction ; some of this chlorite is of the earthy variety, but mostly of the foliated. It is generally of that peculiar green color so common to that mineral, but in Danvers, where it approaches the greenstone, (and is associated with hornblende) it becomes darker, and at last nearly or quite black. Much of the greenstone in that section is impregnated with it.

Chlorite occurs at Crystal beach, Nahant, and is associated with feldspar, forming a species of sienite at Little Nahant,

Lynn, Middleton and Topsfield. From the latter place great numbers of bowlders are carried into the north western part of Danvers. In all these instances the feldspar is of a red color.

Class IV. Metals.

The southern section of Essex County is very destitute of metals, no metallic bed having yet been discovered; all therefore known of the metallic substances is to be found in diffused state.

Genus IV. Copper.

Pyritous copper is found in small masses and grains, diffused through the trap and slate rocks of Nahant.

Genus V. Iron.

Species 1. *Sulphuret of Iron* (*Pyrites*), is diffused through the trap rocks in many places at Nahant, Lynn, and Saugus.

Species 2. *Specular oxide of Iron*, occurs forming a drusy coating upon the rocks, at the south part of Little Nahant.

Species 3. *Argillaceous oxide of Iron*, (*Bog-ore*) occurs in Saugus, near the Newburyport turnpike.

Genus VI. Lead.

Species 1. *Sulphuret of Lead*, (*Galena*) a few particles have been found in the prase of Nahant, and in a vein of carbonate of lime, near Phillips' beach, Lynn.

Genus VII. Manganese.

Species 1. *Oxide of Manganese*, occurs in beautiful dendrites in the crevices of brecciated porphyry, in Lynn, a few rods north of the establishment for the manufacture of India rubber cloth, and at Lover's Leap.

But the most splendid dendrites of this oxide, occur in a ledge of porphyry and compact feldspar, at Wood End, Lynn, in the track of the Eastern Rail Road; while blasting for that road in 1838, vast quantities of the fragments of the rocks thrown out, exhibited upon their surface a most fanciful and splendid display of dendrites.

TWO NEW SPECIES OF MUSCI; WITH FIGURES: By John Lewis Russell.

Polytrichum.

(Section 1. *Hooker.*) *Calyptra naked.* Catharinea. *Ehrh.* Polytrichum *incurvatum: Nobis.

P. foliis lanceolatis suberectis, marginibus planis, apicibus serratis: nervo valido multiplicato undulato: thecâ cylindraceâ cerniusculâ.

Obs. Forsan *Polytrichum Lævigatum.* Wahlenberg.

Description. Stems short, leaves rather delicate, remarkably hygrometric, curling inward at the tips or apices, which are of a reddish-brown color. Entire plant, scarcely an inch in height. Perhaps it is Wahlenberg's P. lævigatum, which it resembles in having the calyptra "perfectly smooth."

Entire plant: and leaf magnified.

Habitat. On old decayed logs; Chelmsford, Middlesex County, Massachusetts.

Discovered while in search of specimens of mosses, April, 1839.

(Section 2. *Hooker.*) *Calyptra covered with filaments.*

Polytrichum *Boreale. Nobis.

P. foliis lanceolatis acuminatis; marginibus planis; nervo totali validissimo: caulibus brevissimis: pedunculo terminali semiunciali: thecâ cylindraceâ rectâ, operculo conico, centro breviter apiculato recurvato.

Description. Leaves lanceolate acuminate, margins plane, without serratures, minutely toothed near the summit: nerve distinct and continued to the tip or apex. Stems short: fruit-stalk terminal, half an inch in length: calyptra hairy: theca cylindrical upright: lid conic: beak short and a little recurved.

Leaf magnified: entire plant: and hairy calyptra little magnified.

Habitat. On gravelly banks in woods. Littleton, Coos County, New Hampshire.

Observation. I had the pleasure of detecting this little and interesting species, in the several stages of its growth, with and without its calyptra, during a short residence in the vicinity of the White Mountains, in the winter of 1837–8. Its diminutive size, and smoothly margined leaves seem to denote its variation from any previously described species.

This species of Hyla, called peeping frog, seems to be not well determined. In the Catalogue of the Reptilia of Massachusetts, it seems to be considered as Hyla Squirella ? Daudin; the note of interrogation implying doubt as to the correct specific distinction. Yet the Hyla Squirella of the Southern States and our own cannot be confounded. This, with the Hyla versicolor or common tree frog, or tree-toad as it is more usually

TWO NEW SPECIES OF MUSCI; WITH FIGURES: By John Lewis Russell.

Polytrichum.

(Section 1. *Hooker.*) *Calyptra naked.* Catharinea. *Ehrh.* Polytrichum *incurvatum: Nobis.

P. foliis lanceolatis suberectis, marginibus planis, apicibus serratis: nervo valido multiplicato undulato: thecâ cylindraceâ cerniusculâ.

Obs. Forsan *Polytrichum Lævigatum.* Wahlenberg.

Description. Stems short, leaves rather delicate, remarkably hygrometric, curling inward at the tips or apices, which are of a reddish-brown color. Entire plant, scarcely an inch in height. Perhaps it is Wahlenberg's P. lævigatum, which it resembles in having the calyptra "perfectly smooth."

Note. Hylodes Pickeringii. This beautiful native reptile, first described and figured by Dr. Holbrook, in his North American Herpetology, will be found mentioned in this number under an incorrect name, viz. (Hyla femoralis, *var. c.*) see page 93. The Genus Hylodes was separated from Hyla by *Zitzenger*, on account of the absence of a sternum, (breastbone) as in the true Hyla. Our distinguished fellow townsman, Dr. Charles Pickering, now attached to the Exploring Expedition, discovered it, in this vicinity, eight or ten years since, and, as a new species, it has been dedicated to him: a tribute of scientific respect.

(Section 2. *Hooker.*) *Calyptra covered with filaments.*

Polytrichum *Boreale. Nobis.

P. foliis lanceolatis acuminatis; marginibus planis; nervo totali validissimo: caulibus brevissimis: pedunculo terminali semiunciali: thecâ cylindraceâ rectâ, operculo conico, centro breviter apiculato recurvato.

Description. Leaves lanceolate acuminate, margins plane, without serratures, minutely toothed near the summit: nerve distinct and continued to the tip or apex. Stems short: fruit-stalk terminal, half an inch in length: calyptra hairy: theca cylindrical upright: lid conic: beak short and a little recurved.

Leaf magnified: entire plant: and hairy calyptra little magnified.

Habitat. On gravelly banks in woods. Littleton, Coos County, New Hampshire.

Observation. I had the pleasure of detecting this little and interesting species, in the several stages of its growth, with and without its calyptra, during a short residence in the vicinity of the White Mountains, in the winter of 1837–8. Its diminutive size, and smoothly margined leaves seem to denote its variation from any previously described species.

REMARKS ON HYLA FEMORALIS, OBSERVED IN THE NORTH PARISH OF DANVERS. By Andrew Nichols.

This species of Hyla, called peeping frog, seems to be not well determined. In the Catalogue of the Reptilia of Massachusetts, it seems to be considered as Hyla Squirella ? Daudin; the note of interrogation implying doubt as to the correct specific distinction. Yet the Hyla Squirella of the Southern States and our own cannot be confounded. This, with the Hyla versicolor or common tree frog, or tree-toad as it is more usually

called in this vicinity, whose croaking in the orchards and about our gardens from May to August, is so frequently heard and so little admired, even by naturalists, becomes particularly clamorous on showery days and in warm evenings. But the cheerful notes of the *little peeping Hyla*, may be emphatically styled the "Voice of Spring," to the full chorus of which season it so largely contributes.

Description. The Hyla femoralis or Peeping Frog, is about one inch in length, of a fawn color, with delicate dots of black about the body. These dots in two rows form a cross upon the back. The eyes are very prominent, limbs long, slender, formed for great activity. In fine, it possesses in a high degree that form and beauty, and that most graceful motion, peculiar to the frogs.

The Hylæ or tree frogs, differ only from other frogs in the extremities of the toes, each of which is expanded into a rounded viscous pellet or tubercle, enabling them to adhere to the surface of bodies, and to climb trees and bushes; where, in fact, they remain all summer living upon insects. Many of them, chameleon-like, have the power of changing their color to that of the bark of the tree to which they adhere; consequently they are seldom noticed. They spawn in water, and in winter enter the mud. The male has a pouch under the throat, dilating whenever he cries.

Natural Science so forbidding to most minds by its systems, is happily relieved by its Poetry. Who, unmoved, can listen to the voice of spring—to the song sparrow—to the blue bird, and even to the little peeping frog? And what are these emotions, which fill the soul with gladness, but the poetry of Nature—of Life? The human mind is inquisitive. It wishes to know more and more of the objects—the beings which afford it pleasure. Many of our race have received delight from even the Hyla, who knew nothing of the creature save its voice. Spring after spring it has saluted their delighted ears, from every fen and morass, like a fairy sound, telling them that "the winter has past—the time of the singing of birds is come." But few, very few, even of our rural population, whose dwellings are in the midst of myriads of these beautiful, active and cheerful little rep-

ties, ever saw the frog itself; or at least they never recognised it as the creature to which they are indebted for so much pleasure. The "voice of the turtle," so often mentioned in Scripture, in connexion with the text above quoted, probably gave origin to the singular notion somewhat prevalent, that the spotted backed turtle, (*Emys punctata*) was here implied, which inhabits the same morass whence this shrill sound proceeds. Others suppose it to proceed from the speckled frog, (*Rana fontinalis*) or from some species of this family, with which they are better acquainted.

About forty years since, a farmer boy, I first satisfied my own curiosity by catching the creature in the very act of vociferating, the well known monosyllable *peep—peep.* This was effected by wading, soon after sunset, into a wet meadow where these frogs were numerous. As I approached, every voice was hushed, every head hidden. I stood perfectly motionless for a considerable time, until at length an individual near my feet resumed its piping. Presently the inflation and collapse of the membrane beneath the throat, (occasioning the emission of sound) caught my eye. In the twilight, nothing more of the creature could be seen. With a quick motion, the frog, together with a handful of mud and grass, was seized, borne in triumph home, placed in a glass vessel, and examined at leisure.

The piping of the Hyla commences as soon as the frost is out of the swamps, in which they have hybernated, and is continued usually through the month of May. They are silent, in summer. The same note from a solitary individual on some tree, vine or bush, is sometimes heard in autumn; but whether it proceeds from the same creature or from some other, that mimics its voice, I have never been able to determine. It is not improbable however, that though thus out of season, it comes from the frog itself. Thus also in the autumn a few trees* will blossom, and birds† sometimes resume their spring notes. So likewise may it not be inferred, that this favorite saluter of Spring, sometimes though rarely, exhibits this anomalous trait?

* The apple and pear; Cinnamon Rose, (*Rosa cinnamomea*) Japan Quince, (*Cydonia japonica*) occasionally blossom in autumn.

† The blue bird (*Sylvia sialis. Wilson*) often revisits the spot where it has reared its young the previous spring, and there continues two or three days before its departure to the South.

With a specimen of the common tree frog, I have forwarded to the Cabinet of the Society, one of the peeping frogs, captured in a swamp in North Danvers.

Note. It has been deemed advisable to append a more minute description of this interesting reptile. A careful examination enables us to furnish the following.

Hyla femoralis *Le Conte*, Ann. Lyc. N. Y. Vol. I. p 280.

* Variety *c*.

Above fawn color, changeable to dark cinereous; marked with two transverse narrow black lines, forming a cross, and an irregular narrow line on each side producing with the other lines a general rhomboidal configuration; a large triangular spot on the back of the head, formed by the junction of lines proceeding from the centre of the irides; a spot at the insertion of the fore legs, rather than "an angle" as in the true species: a pale yellowish line margined with black, bounds the back part of the fore and hind legs; an irregular spot on the extremity of the rump; *beneath* granulated on the abdomen, legs and thighs; a character also perceptible in some degree, on the upper surface. *Head*, rather obtuse, lower lip whitish; throat, cheeks and auricles minutely spotted with black dots: irides golden-copper. When resting on a dark substance, it changes at pleasure to a dark ashen hue, the lines becoming black and prominent, and the spots on the head and rump very perceptible, as also the transverse bars on the upper surface of the legs.

Length of body from snout to vent, one inch: of hinder thighs and legs, each half an inch; of tarsus and toes 7-10 *ths.* of an inch; of longest toe 4-10 *ths.* of an inch. Entire length of fore legs half an inch.

The present specimen may be the young, and on that account liable to vary from the described species, and perhaps the season of the year may have some influence on the color.

NOTICE OF RARE PLANTS; WITH A DESCRIPTION OF A CURIOUS VARIETY OF CLADONIA UNCIALIS. By John Lewis Russell.

Chara vulgaris. *L.*

Bigelow's Plants of Boston, 2d ed., p. 334.

Natural order Characeæ. *Richard.*

I met with this obscure but exceedingly interesting aquatic, for the first time, in a brook, running parallel with the Eastern Rail Road, on the farm formerly in possession of I. Tucker, Esq. While, with a friend, searching for microscopic objects among the Infusoria, my attention was drawn to the floating tufts of this brittle and crystalline plant, growing from the bottom. Submitting it to the microscope, we had the pleasure of perceiving the motion of the sap in those mysterious and beautiful currents, better known among botanists as *Cyclosis*. Vesicles of a globular form were perceptible traversing the internal cavities and

vessels of the plant, sometimes in direct, but mostly in spiral channels, now flowing with accelerated motion, and now in a slower degree. Whenever internodes, or even the apparent rudimentary gems of a new branch occurred, these globules would contract so as to allow their passing round the knot, and on being relieved from such constraint, would instantly recover their former size and shape.

I would here observe, that to appreciate fully the beauty of this phenomenon, the microscope must be of a deep penetrating power, and if convenient, an achromatic lens should be employed. For further particulars of this curious subject of Cyclosis, the reader may consult with advantage the ingenious papers of Messrs. Varley and Slack, in vol. xlix., of London Transactions of Arts and Sciences, p. 179 *and seq.*, plates.

Different opinions seem to have been entertained respecting the position, which this plant should hold among the classes and orders of the vegetable system. Vaillant, first established the Family of Characeæ in 1719, when it contained the single genus Chara. Linnæus, at one time placed the plant in his *Cryptogamia*, but afterward removed it to his class and order *Monoecia, Monandria :* while Richard grouped the Characeæ among Acotyledoneæ, to which they seem allied and approximate to Marsilea, in the common structure of their seed-vessels.

The original specimens collected as mentioned above, have been growing during a space of eighteen months, in a vial closely sealed, making a profusion of new branches and seeds.

ZOSTERA MARINA. *Linnæi species Plantarum*, 1374.
Eel grass. Sea-wrack.
Natural order. Fluviales. *Lindley.*

In a search for shells on Plymouth Beach, last summer, I had the good fortune to find several specimens of this plant in full fructification. Dr. Bigelow, in his Florula Bostoniensis, mentions that he had never been able to discover it in this condition. The fact is worthy of notice.

The fruit of the Zostera is disposed in two rows, in sheaths formed from the dilation of the leaves, infolding, like the spathe of an Arum, but confined to the middle ; the leaf assuming its usual ribbon-shape immediately above the seeds. Each of these

seeds is cylindric, beautifully ribbed lengthwise, and somewhat wrinkled between the ribs. The albumen, of a singular blue color. On comparing a specimen with the fine figure of Prof. Hooker, in Flora Londinensis, and again with T. 467 of English Botany, and also through the suggestion of Geo. B. Emerson, (President of the Boston Society of Natural History). I am inclined to think, that ours is a distinct species, though seemingly heretofore confounded by American Botanists, with the British species. A subsequent examination gave me the following results, viz.

1. *Greater length of leaves :* ours being many yards—the British according to Hooker " from four inches to a span long."

2. *Want of distinct sheaths*, at base of leaves.

3. *Leaves of American species, mucronate*, (ending in a short point :) while those of the British species are " obtuse at the extremity."

4. Flower-sheath at a greater distance from the sheaths, than is represented in the figures of Hooker, and English Botany.

This part of the subject will receive further attention.

Zostera belongs to the natural group of Naiadæ of Jussieu, and Potamophilæ of Richard, and Fluviales of Lindley. Linnæus places it in Gynandria ; Withering in Polyandria, Polygynia ; and in this country Elliott, Nuttall and Bigelow, consider it as referable to Monoecia. Its Spathæform floral envelope allies it to Aroideæ, as noticed by Richard, who also points out the real distinction between each.

Echium vulgare. *L.*

Viper's Bugloss. Bigelow's Plants, &c., p. 70.

Natural order. Boraginæ. *Jussieu.*

This, though a common weed in the dry pastures of England, especially near Cambridgeshire and Norfolk, has been considered remarkable for beauty, and for striking effect when growing in masses. Its raceme-like flowers on a prickly stem, its leaves studded with red tubercles, its rosy buds and rich purple blossoms render it highly conspicuous. The first instance of its occurrence in this vicinity, was noticed by me during the past

summer, near Pickman's Farm, on the Eastern Rail Road. For a beautiful figure, see English Botany, *table* 181.

UTRICULARIA INFLATA *Walter.*

Vesicular Bladder-wort : Bigelow's Plants, p. 8.

Natural order. Lentibulariæ. *Richard.*

Specimens of this elegant plant were found last summer, in Bartlemy's Pond, Danvers. The petioles are singularly vesicular and buoy up the foliage, so that the flowers are raised above the water.

CETRARIA ISLANDICA. *Iceland Moss.*

Natural order. Lichenes. *Jussieu.* Cryptogamia. *Linne.*

Found by Dr. A. Nichols, on the dry hills of Danvers, and by myself in similar situations in Hingham.

Herbarium of the Society.

STICTA AURATA. *Ach : Methodus.*

Golden-edged Lichen. English Botany, *table* 2359.

Description. *Thallus,* varying from rich dark brown to a rich fawn color ; superbly edged with granulations of golden yellow. Rare. (A tropical species.) Fine specimens from trunks of Pinus rigida in Kennebunk, Me., Dec., 1838.

STICTA PULMONACEA.

Liverwort Lichen.

Said to be rare in fruit, but I obtained excellent specimens in that condition, from Topsham, Maine, May, 1838.

BORRERA FURFURACEA. *Ach.*

" Lichenes of New England." *Tuckerman.* Boston Journ. Nat. Hist., vol. ii., p. 258.

Doubtful Synonym. *Evernia purpuracea.* Mass. Catalogue.

Large specimens, frequently in fruit, I have found this spring in woods, on the bark of pitch pine, Chelmsford, Mass.

BÆOMYCES ROSEUS. *Ach. Methodus.*

Abundant on sand near Leach pond, Plymouth, Mass.

CLADONIA UNCIALIS. *Ach.*

Variety e. * Reticulata.

Netted Coral Lichen. Cryptogamia, *L.*

Natural order. Lichenes. *Jussieu.*

Stems three or four inches long, glaucous green, elongated, depressed, carious : branches numerous, forked, sometimes perforated in the axils, but generally covered with a net work ; summits tending to cup-shape; the edges proliferous, and branched in forks ; tubercles minute but distinct, brown.

My herbarium and that of the Society.

OBSERVATIONS. The genus Cladonia to which this curious variety belongs, is distinguished by its upright and fistulous stems, furnished with numerous branches, each tipped with a small black, brown or red body (its propagulum) or organ for continuing the species, analogous to those stem-bulbs seen on some kinds of the more perfect vegetables. Whoever has rambled over dry pastures in the months of summer, must remember the crackling under feet, of species of this group of brittle coral-like plants.

In it may be found the valuable Rein Deer Moss *C. rangiferinum*, and the beautiful scarlet *C. bacillaris*, which delights to grow on decayed trees, posts, rails, and is not unfrequent in the interstices of large sunny rocks contiguous to the forest.

The subject of the present observations was found in Hingham, Plymouth County, on a mild sunny day of the last winter, and subsequently in great abundance at the same place among the mossy rocks of a pasture, south east of "Tranquility Grove ; " a sylvan retreat well known to the inhabitants of that town for its delightful shade, and pleasant summer *pic nic* parties. I have given it the name of Netted Cladonia or Coral Lichen, and consider it the fifth variety of Cladonia uncialis, of which Acharius in his Prodromus, has mentioned four previously ascertained.

REMARKS UPON SCARABÆUS GOLIATUS AND OTHER AFRICAN BEETLES ALLIED TO IT. By Thaddeus William Harris.

There has recently been added to the Cabinet of the Society a gigantic beetle, belonging to the genus Goliath of De Lamarck. The enormous size, extreme rarity, and great nominal value of the African insects of this genus, render the acquisition of this specimen, which is in perfect preservation, an occurrence of signal good fortune, and affords a suitable occasion for some remarks upon the species.

The earliest account of them on record is contained in Dru Drury's* "Illustrations of Natural History," a work in three volumes, quarto, published at London in 1770, 1773, and 1782, and illustrated by figures of exotic insects, drawn and engraved by the celebrated entomologist Moses Harris. Mr. Drury seems, for many years, to have been the only possessor of one of these beetles, which he states was brought from Africa, where it was found dead and floating in the river Gaboon, opposite to Prince's island, near the equinoctial line. It is said that this specimen cost Mr. Drury the sum of ten pounds sterling, a high price as compared with the present diminished value of money. This beetle was described and figured, in 1770, in the first volume of Drury's Illustrations, page 67, plate 31. From this description and figure Linnæus drew up a specific character of it, and inserted it, in 1771, in his "Mantissa altera," under the name of *Scarabœus Goliatus*, a name which was subsequently adopted by Drury, in the index appended to the second volume of the Illustrations. Mr. Westwood, the editor of a

* Mr. Drury was a London goldsmith and jeweller, who devoted his leisure to the study of natural history, and particularly to that of entomology, and was a fellow of the Linnæan Society. His collection, in the increase of which he spared neither expense nor trouble, contained eleven thousand insects, which after his decease, were sold by public auction. Mr. Drury was of a very ancient family, and it is believed was lineally descended from Sir Dru Drury, of Queen Elizabeth's time. He died on the 15th of January, 1804, at the advanced age of eighty. His son succeeded to his business, and his daughter was married to a Mr. André, a merchant in London, and uncle to the unfortunate and lamented Major André. See Gentleman's Magazine for 1804, part 1, p. 86.

new edition of Drury's work,* informs us that this specimen of the *Goliatus* came into the possession of Dr. William Hunter, who subsequently bequeathed it, with his own collection, to the University of Glasgow, where it is still preserved, and forms one of the most interesting objects of the Hunterian museum. This beetle remained, for a long time, unique in Europe ; but there is now another one, resembling it in color, but of inferior size, and with the horns on the head not so much developed, in the magnificent collection of W. S. Macleay, Esq., of London. While the *Goliatus* was in the possession of Dr. Hunter, it was seen both by Fabricius and Olivier, and the latter took a drawing of it for his "Entomologie," where† it is referred to the genus Cetonia. More recently it has been a third time figured in Mr. Duncan's volume on beetles, pl. 16, belonging to Jardine's "Naturalist's Library." Although it has been repeatedly redescribed and refigured, I believe that these are the only original figures, and that all the others are mere copies from them.

The Chevalier De Lamarck, having found it expedient to propose a new genus for the reception of the *Scarabæus* (or *Cetonia*) *Goliatus* and some other allied insects, regardless, as he always was, of the rights of his predecessors, converted the Linnæan specific name for the insect in question to the generical name of *Goliath*, and substituted that of *Africanus* for the species. The characters of this new genus were published, in 1801, in the Système des Animaux sans Vertèbres," and the general name was retained by Latreille in the first volume of his "Genera Crustaceorum et Insectorum," which appeared in the course of the same year. Now, however, this name is usually written *Goliathus ;* and to the species, instead of *Africanus*, that of *giganteus*, proposed by Mr. Kirby,‡ is applied, in the new edition of De Lamarck's "Histoire Naturelle des Animaux sans Vertèbres," and in Westwood's edition of Drury's work.§ Mr. Duncan calls this same species *Goliathus magnus*.

* Illustrations of Exotic Entomology, &c, by Dru Drury ; a new edition, with additional matter by J. O. Westwood. 3 vols, quarto, London, 1837.

† Entomologie, Vol. I, No. 6, page 7, pl. 9, fig. 33.

‡ Kirby and Spence. Introduction to Entomology, Vol. III, p. 33.

§ Alluding to this species, in the third volume of Drury's work, pp. 54 and 55, Mr. Westwood, apparently through inadvertence, calls it *Goliath. maximus.*

The second species, and in point of time the second described individual of this genus, was also contained in Drury's collection, and was first described and figured in 1782, in the third volume of this author's Illustrations, page 55, and plate 40. It was procured near Sierra Leone in Africa. Drury says of it, that "this insect is of the same genus with that described in Vol. I., plate 31; but I judge it to be a different species;" and "it is an undoubted nondescript." Subsequently, however, Drury inserted this species in the index to his work as a *variety of Scarabæus Goliatus*. Mr. Westwood considers it to be a distinct species, and, in his edition of the Illustrations, names it *Goliathus Drurii*, in honor of its first describer. At the sale of Drury's insects it was purchased by Mr. Macleay, senior, for the sum of £12. 1. 6. sterling, and still remains in his collection. Mr. Westwood says that "a very fine and recent specimen has lately been received by Mr. Havill, of Oxford street, (London), printseller and naturalist, who has demanded the sum of fifty pounds for it;" and I am informed that he has actually been offered and has refused forty pounds for the specimen.

The insect in the Cabinet of the Society is the third known specimen of *Goliathus Drurii*. It agrees with Drury's figure in all essential characters, and, to the best of my recollection, differs from it only in having a few white dots on each side of the great white patch on the elytra, not symmetrically arranged, but placed irregularly near the margin of the patch. It was presented to the Society in November, 1837, by Dr. Joseph Farnum, of Salem, and was brought to this place from Africa by a seaman, whose account of it is substantially the following. About two years ago he was on board of a Salem trading vessel, which put into a small port on the western coast of Africa, between Sierra Leone and Cape Palmas. Whilst there the vessel was visited by the natives for the purpose of trade, and one of them brought this beetle dead, and in the state in which it now remains. The natives, furthermore, said that these insects fly about in the woods during the night.

In 1785, Voet* figured and described another species of this genus under the name of *Cacicus ingens*. It is smaller than the

* Beschreibungen und Abbildungen hartschaaligter Insecten; Coleoptera, Linn. Vol. I., p. 101. pl. 22, fig. 151. Quarto, Erlangen, 1785, &c.

two preceeding species, and the elytra are entirely of a pearl-white color. The specimen was stated by Voet to be a native of America, and to belong to Renger's rich cabinet. Olivier and Fabricius call this species *Cetonia Cacicus*, and repeat Voet's statement, that it is a native of America. Mr. Hope, in his little work, entitled "the Coleopterist's Manual," puts down the *Cacicus* as a native of Guinea, from which place he says that he has received a specimen. In the Cabinet of the Museum of Natural History of Paris is another specimen, which, though it resembles Voet's figure of the *Cacicus* in most respects, differs from it in having a triangular black spot on each elytron, near the humeral angle. Messrs. Gory and Percheron have described and figured it in their "Monographie des Cétoines," p. 150, pl. 24, fig. 2., and give, as its native country, South America, but state that this locality is not indeed certain.

Dr. Klug is said to have described a female of some species of this genus in Erman's "Reise," under the name of *Goliathus regius*. The description I have not yet met with; but Mr. Westwood, who saw the insect in the Royal Museum at Berlin, says that it has the head unarmed, and that it agrees in color and markings with the *G. Drurii*.

One more insect belonging to this genus, as restricted by Mr. Hope, remains to be noticed. It is in the cabinet of Mr. Hope, who received it from Guinea, and ascertained it to be a female by dissection, and, on the fifty ninth page of his "Manual," states that he thinks probably it is the female of *Goliathus giganteus*. While the Manual was passing through the press, Mr. Hope added some interesting observations on the Goliathidæ, together with a full description of the foregoing female, under the provisional name of *G. princeps*, with the following remarks. "In the present state of our knowledge it is difficult to decide with certainty whether this insect be the female of any of the already described, or of a still unknown, species. It is better therefore to give it a provisional name, although the insect is evidently a female, than let it remain undescribed. At a future time it can be changed when more accurate information is obtained." A beautiful figure of this insect, from the accurate pencil of Mr. Westwood, is prefixed to the Manual, from which, and from the description, it appears that the edge of the clypeus is rounded and unarmed, like that of the *regius*.

The genus *Goliathus*, as restricted by Mr. Hope, has the thorax rounded, is peculiar to Africa, (for it seems that the *Cacicus* is really an African and not an American insect,) and contains, at present, only the five foregoing insects, or species, if they be truly distinct from each other; and, of these Goliathi, only the ten individuals, which I have enumerated, are, as yet, known; namely, eight males and two females.

It is much to be regretted that De Lamarck's numerous and unwarrantable innovations in nomenclature* should still be retained. Specific names are the property of the first describers who make use of them, and should not be altered or removed. It seems to me, in the present instance, no more than an act of justice to restore the original Linnæan specific name to the typical species of Goliath, or Goliathus, and to give to the genus another appellation. I propose therefore to call the latter *Hegemon*†, and add a brief description of the insects included in it.

Genus Hegemon. *Harris.*

1. *H. Goliatus.* Clypeus bifurcated; thorax black, with seven whitish stripes; elytra chocolate-brown, margined before with white. Length over four inches.

2. *H. Drurii.* Clypeus bifurcated; thorax cream-white, with six black lines; elytra black, with a common triangular patch and the outer margin cream-white. Length four inches.

3. *H. Cacicus.* Clypeus bifurcated; thorax ochre-yellow, with six black lines; elytra pearl-white, with a narrow black border. Length over three inches.

Var. ? With a triangular black spot on the humeral angle of each elytron. Length nearly three inches and a half.

4. *H. Regius.* Is said to resemble *H. Drurii* in color and markings; but it has the head unarmed.

5. *H. Princeps.* Clypeus entire, rounded; thorax black, with seven ochre-yellow stripes; elytra blackish, at the sides and tip pearl-white. Length three inches.

* How many of the Testacea now retain the specific names which Linnæus gave to them?

† From ἡγεμὼν, a chief or commander.

Mr. Hope, in the little Manual before mentioned, proposes to divide the Family *Goliathidæ*, as he calls it, into two groups; the first including those genera in which the thorax is rounded, and the second those in which it is trapezoidal, or broad behind and narrowed before. In the former he places three genera, *Goliathus* (*Hegemon*), *Dicronocephalus*, and *Incas;* in the latter, *Mecynorhina*, *Dicronorhina*, *Rhomborhina*, *Jumnos*, and an unnamed genus, the type of which is a Mexican insect, the *Goliathus Hoepfner* of Gory and Percheron.* The genus *Incas* or rather *Inca* of Lepeletier and Serville comes very near to *Trichius*, is peculiar to South America, and contains some species of large size and considerable rarity, but which cannot compare, in these respects, with their African prototypes. Mr. Hope does not inform us by whom or where the characters of *Dicronocephalus* are defined, nor does he name the species upon which the genus is founded; but merely gives it as an East Indian genus. I think it probable that the *Goliathus Wellech* (*Wallich* ?), of Gory and Percheron,† may be the type; and, if this be the case, the East Indian genus *Narycius* of Dupont, in Guérin's "Magasin de Zoologie," for 1835, pl. 128, will probably have a place very near to it, in the first group of this family. The characters of the first three genera in the second group, with a trapezoidal thorax, are given by Mr. Hope in the Manual. To *Mecynorhina*, the magnificent *Scarabæus Torquatus* of Drury is probably to be referred, the male of which has recently been described and figured, for the first time, by Mr. Waterhouse, in Charlesworth's "Magazine of Natural History," New Series, Vol. II., page 635. Of this insect, which is nearly three inches in length, or scarcely inferior in size to the species of our genus *Hegemon*, and is also a native of the western part of Africa, only two individuals are yet known; one, a female, with the clypeus unarmed, the original unique specimen from Drury's cabinet, "is still in existence, and graces the rich collection of Mr. Macleay;" the other, a male, with the clypeus produced into a long, pointed, recurved horn, was lately obtained at Sierra Leone, by Lieut. Strachan, in

* Monogr. des Cétoines, page 154, pl. 26, fig. 2.

† Monogr. des Cétoines, page 154, pl. 26, fig. 1.

whose collection it is preserved. The type of this genus is the *Cetonia Polyphemus* of Fabricius. The following remarks, made under this species by Mr. Hope, may serve as a caution to those persons who possess rare and valuable insects, and will show to this Society the necessity of immediately providing for the safe keeping of their specimen of *Hegemon Drurii*. "This insect (*Mecynorhina Polyphemus*), for many years, was considered unique, and was the chief ornament of the Banksian cabinet: it has been stolen from thence by some individual unworthy of the name of naturalist. I regret to state also that a box, containing some rare and singular insects, from Sierra Leone and New Holland, has disappeared from my own collection." The *Polyphemus*, however, is not lost to science; for it seems that there is a specimen in the cabinet of Messrs. Gory and Percheron, who have described and figured it in their *Monographie*.

JOURNAL

OF THE

ESSEX COUNTY NATURAL HISTORY SOCIETY.

THIRD AND LAST NUMBER.

In bringing the Journal to a close, a few words may be expected by way of preface.

Since the issue of the second number, materials of various character have been from year to year collecting. These were offered at the annual and other meetings of the Society in the form of verbal and written Reports. From them the present number has been compiled, by reference to the Specimens in the Cabinets, to the Records and to the files in which memoranda as well as the reports had been preserved.

The collections have increased within the last twelve years to a gratifying extent. Each department of Natural History has its Representatives. The Herbarium is rich in native and foreign species. The Conchological cases exhibit our own Mollusca arranged side by side with British cospecies. Other foreign species of Shells have been secured by private generosity or by a system of exchanges. The same may, in fine, be said of all the other departments. Of the natural history of Essex County much knowledge has been gained. The geological features of a section in the immediate vicinity of the City of Salem have been rendered interesting by the Society's possession of a natural curiosity, familiarly known as *Ship Rock*, a massive boulder, to which reference may be made in this number. The Microscope has likewise been employed, and some of the earliest instances of Silicious Earths, containing infusorial remains, occurred within our immediate neighborhood.

We have called this the third and last number, and we

here take leave of our Journal as an indication of the doings of the Essex County Natural History Society. The Essex Institute was formed in 1848, by the union of the E. C. N. H. Society with the Essex Historical Society, and duly incorporated by an Act of the Legislature. All future publications of our research or discovery will be issued under the name of the Proceedings of the Essex Institute.

Salem, March, 1852.

RETROSPECT OF SOME OF THE SHELLS FOUND IN ESSEX COUNTY.

In the second number of this Journal will be found a sketch of some of the shells (Mollusca) which had occurred to the writer. A reference therein to the materials of his "Familiar Notice, &c." exhibits the facilities of which he was possessed. The number was issued in June, 1839. In 1841 the State Report of Dr. A. A. Gould was published. Subsequently communications appeared in the Journal of the Boston Society of Natural History, in later volumes of Silliman's Journal of Science and in Proceedings of Scientific Societies, detailing new facts in this branch of Zoology.

The present paper is intended as an alphabetical list of those species alluded to, in the second number, and they are now arranged according to the nomenclature of Dr. Gould. The names in the 'Familiar Notice' will be found to be generally synonyms.

Alphabetical List, &c.

N. B. The figures on the left hand of the line refers to the page of the second number of this Journal; those on the right hand refer to Gould's Report, except when otherwise specified.

49. Anatifa lævis, *Linnæus.*, pp. 19. 20. Wood cut on p. 11
60. Anodon fluviatilis, *Lea*, 117. f. 80.
60. Anodon implicatus, *Say*, 118. f. 78.

57. Astarte castanea, *Say*, 76. f. 45 and *variety* B. procera 78.
62. Anomia ephippium, *Linnæus*, 138.
65. Ancylus rivularis, *Say*, 224. f. 153.
67. Auricula bidentata, 197. f. 130.
48. Balanus eburneus, 15. f. 6.
48. Balanus geniculatus, *Conrad*, 14. f. 9.
48. Balanus ovularis, *Lamarck*, 17. f. 7.
68. Buccinum obsoletum, *Adams*, 308. f. 210.
68. Buccinum plicosum, *Menke*, 303. f. 213.
68. Buccinum trivittatum, *Adams*, 309. f. 211.
69. Buccinum undatum, *Linnæus*, 305. The shell and animal are figured in the Penny Cyclopædia, vol. IX. p. 454.
75. Bulla triticea, *Couthouy*, 165. f. 98.
74. Cancellaria Couthouyi, *Jay*, 283, f. 190.
58. Cardium pinnatulum, *Conrad*, 90. f. 57.
64. Crepidula fornicata, *Lam*: 158. f. 17.
64. Crepidula plana, *Say*, 159. f. 16.
63. Chiton fulminatus, *Couth.*, 148.
73. Cingula minuta, 265. f. 171.
52. Cochlodesma Leana, *Conrad*, 49. ff. 29. 30.
53. Cumingia tellinoides, *Conrad*, 56. f. 36.
57. Cyprina Islandica, *Lam.*, 82.
70. Fusus decemcostatus, *Say*, 287. f. 202.
70. Fusus Islandicus, *Martini*, 284.
71. Fusus harpularius, *Couth.*, 29. f. 191.
51. Glycimeris siliqua, *Lam.*, 39.
68. Lacuna vincta, 262. f. 178*
72. Littorina palliata, 260. f. 177.*
72 Littorina rudis, 257. f. 175.*
72. Littorina tenebrosa, 259. f. 176.*
64. Lottia alveus, 154. f. 13.
64. Lottia testudinalis, 153. f. 12.
51. Machæra costata, 34.
52. Mactra solidissima, *Chemnitz*, 51.
73. Margarita arctica, *Leach*, 255. f. 173.*
73. Margarita cinerea, 252.

74. Margarita obscura, 253. f. 171.*
73. Margarita undulata, *Sowerby*, 254. f. 172.*
53. Mesodesma arctata, 57. f. 39.
75. Modiola discrepans, *Montagu*, 129. f. 83.
61. Modiola modiolus, *Turton*, 123.
61. Modiola plicatula, *Lam.*, 125. f. 81.
61. Mytilus edulis, *Linnæus*, 121. f. 82. This, though a very common shell, yet not devoid of beauty, especially in the varieties, of which M. pellucidus of Pennant and others, is most distinguished as noticed in Number II. p. 62, where *dele* the name, as a distinct species.
62. Mytilus pellucidus, variety of Mytilus edulis. 122.
51. Mya arenaria, *Linnæus*, 40,
67. Natica clausa, *Broderip and Sowerby*, 238. f. 167.
67. Natica heros, *Say*, 231. f. 163. Dr. Gould gives an interesting account of its habits.
67. Natica triseriata, *Say*, 233. f. 165.
58. Nucula limatula, *Say*, 98. f. 62.
58. Nucula minuta, *Turton*, 101.
58. Nucula myalis, *Couth.*, 99.
54. Pandora trilineata, *Say*, 44.
62. Pecten magellanicus, *Lam.*, 132.
47. Pectinaria Belgica, *Lam.*, 7.
55. Petricola pholadiformis, *Lam.*, 63.
50. Pholas crispata, *Linnæus*, 27. Found living in a young state at Phillips' beach, Lynn, as noticed on p. 50, (No. II.) under the name of Pholas lamellata, *Turton*, which latter, *dele.*
69. Purpura Lapillus, *Lam.*, 301, also *variety* imbricata, 302.
74. Pyramis striatula, *Couth.*, 269. f. 174.
74. Rostellaria occidentalis, *Beck*, 298. f. 205.
54. Sanguinolaria fusca, *Conrad*, 66. f. 42.
54. Sanguinolaria sordida, *Couth.*, 67.
54. Saxicava distorta, *Say*, 61. f. 40.
75. Scalaria Grænlandica, *Chemn*, 249. f. 170.*
51. Solen ensis, *Linnæus*, 29.

76. Solemya velum, *Say*, 35.
48. Spirorbis nautiloides, *Lam*, 8.
75. Thracia Conradi, *Couth.*, Boston Journal of Natural History vol. II., p. 153, pl. 4. f. 1, Gould, 50.
56. Tellina polita, *Say*. This is probably an error. See Gould's Report, p. 69, in note on Tellina tenera.
56. Tellina tenera, *Say*, 68. f. 44.
63. Terebratula caput-serpentis, *Lam.*, 141.
49. Teredo navalis, *Linnæus*, 26.
69. Trichotropis borealis, *Sowerby*, 300. f. 207. This is the Trichotropris costellatus, *Couthouy*, as given on p. 69, where *dele* 2d and 3d lines and substitute.
71. Turritella erosa, *Couth.*, 267.
59. Unio complanatus, *Lea*, 107. f. f. 68. 69. 70. Said to be peculiar to the fresh waters of the Eastern slope of the Alleghany mountains.
60. Unio nasutus, *Say*, 109. f. 71.
60. Unio radiatus, *Barnes*, 110. f. 73.
58. Venus gemma, *Totten*, 88. f. 51.
58. Venus mercenaria, *Linnæus*, 85. f. 67.
66. Velutina lævigata, 241. f. 159. This in the Velutina rupicola *Conrad*, as quoted on p. 66. where *dele* the query about Oxynoe glabra.

OCCURRENCE OF SCAPHIOPUS SOLITARIUS, IN ESSEX COUNTY: WITH SOME NOTICES OF ITS HISTORY, HABITS, &c. By Andrew Nichols, M. M. S. S., President of the Society. Read June 17, 1843.

In a shallow basin surrounded by ledges of greenstone rock, which retains water during the winter and spring, and is occasionally filled in summer by great rains to the depth of one to four feet, on the brow of a hill in Danvers, over which the old Essex Turnpike crosses, and near the intersection of this road by the Newburyport Turnpike, an interesting colony of this rare reptile, hitherto unobserved north of South Carolina, has been lately discovered. Some-

where-about the years 1810, 1811 or 1812, subsequent to a great rain in summer, several frogs of this curious species were noticed by John Swinerton, Esq., now deceased, who resided very near this spot for sixty successive years, and had ample opportunity to observe them. Their numbers, in this, their first appearance, was as great as at any time since; determined by the testimony of several witnesses. At this time, during one or two days and nights, they were very noisy and actively engaged in fulfilling the great fiat of creation; and soon afterwards they disappeared. Nothing more was seen of them for several years. Their voices or note so nearly resembled that of young crows, that it attracted the attention of a Mr. Elijah Pope, a farmer, who lived half a mile distant; and, accompanied by his son, sallied forth, gun in hand, to kill what he so naturally imagined were mischievous birds in his corn-field. From this little anecdote I am enabled to determine their first observed appearance with some degree of certainty; thus defining the time as about the first of September, when corn is in a state to be fed upon by the crow: while, again, the years mentioned above, agree with a statement of the son, Mr. N. Pope, who from his own present age, concludes that 1812 or a year or two earlier, was the time of their first visit.

So far as recollection serves, nothing more was seen of them, until July, 1825, on a day memorable for the passage of La Fayette over the Newburyport Turnpike close by, on his return to Boston from his eastern tour; at which time their voices added to the welcome greetings of a nation's guest! Since this last date, thus rendered conspicuous as well as certain, whenever the basin has been filled in warm weather, these reptiles invariably make their appearance. This has occurred, however, only three times, viz.: August 12th, 1834: again in the summer of a year whose date is forgotten; and on June 16th, 1842. The forenoon of this day, last mentioned, was dark and rainy, as the day and night previous had been. Their croaking attracted the attention of an acquaintance of mine, and information of their

appearance, with a pair of the frogs, were forwarded to me by Mr. Amos Swinerton. In the afternoon of the same day, I repaired to the spot, accompanied by several members of the Essex County Natural History Society; but the sun had appeared meanwhile,—their voices were hushed, and none were even to be seen. In examining the water, however, we found it filled with spawn—and two females were drawn from the bottom of the pool. In the evening following they came out again; resumed their croaking and amatory habits. Several more specimens were captured and kindly presented to us, by Mr. Nathl. Pope, whose name has been already mentioned. The old frogs were not seen again. In five days after, I found the spawn had become tadpoles, of which about a hundred I took home—kept them in glass globes,—fed them on fish and flesh—scarcely one died. They remained longer and grew larger in the tadpole state than did those left in their native pool, which latter became perfect animals in less than four weeks. On the other hand, those kept in water, without any opportunity to crawl on land, or on any substitute for it, such as a floating chip, or some foothold firmer than water, were slower in their development. It seems then, that the development and successive changes of the organs, conform to circumstances. So long as water is wholly their residence, their caudal appendage is necessary and accordingly used, retaining its proportionate size and strength, and the growth of the legs is in the same proportion. If the water be gradually withdrawn, and mud, moist earth and then dry, gradually substituted, they will much sooner undergo the change from the embryotic to the infantile condition of existence. Thus, at the end of four weeks, all the water in which the spawn was deposited had evaporated; in some of the lowest spots of the basin a little mud of the consistence of clay-mortar alone remaining. Here the young frogs were merrily hopping about, enjoying life on dry land, while those in confinement in water, were still increasing in size, and yet in an embryo condition. This very short natural period of the tadpole state admirably fits them for

such breeding places as the one in which the subjects of this paper were found; a locality where water can remain for a short time only, and this in the most wet seasons.

I also kept a few of the old frogs, three in number, two females and a male, in a barrel, a third part filled with moist peat muck, containing some earth worms* and other small creatures. Occasionally I threw in a few garden snails,† small pieces of meat, fish or insects. Whether they ate of these provisions is uncertain. Occasionally I found one or two of them out of the mud, in which they usually buried themselves, reserving only a small breathing hole, opening above their heads. I frequently shook them out for the purpose of exhibiting them; but they would soon bury themselves again, by the dexterous use of their hind feet. I kept them till the last part of November, when carelessly permitting the earth to become frozen, they were killed.

Holbrook, in his N. A. Herpetology, vol. I., pp. 85–7, says that he has found these reptiles in three states only, viz: Georgia, South Carolina, and Tennessee—that they go into the water only in the breeding season, which he observes is in the spring; and that they live in holes in the ground of about six inches in depth, excavated by themselves—never coming out of these, except during the night or after heavy rains. This explains the mystery of their sudden appearance and disappearance, as above mentioned. It would also seem that they are Southern reptiles;—chilled by our northern climate, they want a more genial season to celebrate their nuptials; and thus without a suitable pool to receive the spawn, year after year in this instance transpired, until a summer freshet filled their native habitat sufficiently.

I have some reasons to conjecture that other colonies of these frogs exist in New England. An intelligent farmer of Topsfield, (Mass.), to whom I showed my specimens, and related the foregoing history, told me he had several times heard a similar croaking in a temporary pond of water near his dwelling, but he never went to see from whence

*Lumbricus terrestris. L. †Limax agrestris? L.

the noise proceeded. Something of the same kind has been noticed also in Framingham, in this State, by a student of medicine, who relates that he and a friend of his were kept awake on the identical night, June 16th, 1842, by the noise of frogs or something of the kind in a ditch of water near his lodging; that they went out to discover what they were, but on drawing near the place, the noise or cry, which resembled that of young crows, suddenly ceased, and nothing was to be seen.

OBSERVATIONS ON THE POLYTRICHACEÆ; with a notice of some species occurring in Essex County, Massachusetts.

This family of the mosses, embraces several distinct genera, which formerly were all comprised under one genus, and known as Polytrichum. Growing in situations subjected to alternate dryness and moisture, the polytrichums are found inhabiting wide-apart regions of the globe. Assuming a gregarious habit and in many instances composing a close turf of perennial continuance, they are well adapted to clothe the surface of the earth, in high northern latitudes. Particular species are decidedly montane and even alpine, while again on the other hand several grow in rocky situations, near the sea coast.

The polytrichums are mosses of an upright form, bearing on the summits of the stems and embosomed in the foliage, two kinds of reproductive organs; the one consisting of a series of stiff and colored bracts of a stellulate outline, enclosing the antheridia and pistillidia, from the latter of which, the future seed-vessel (*capsule*) is gradually produced. Sometimes however the stellulate appearance remains, crowning the summit, and on the next annual growth furnishing a continuation of the stem from its midst, which is also provided with the regular foliages, and the individual plant is thus for a time in a sterile condition. The office, which the antheridium and pistillidium perform

is supposed to be analagous to that of the stamen and pistil in the higher plants. The pistillidium elongates and rises to a considerable height, constituting the pedicel; and enlarges at its apex into the capsule, which is surmounted by a caplike organ, called the calyptra. On the ripening of the capsule the calyptra falls off, but when studied with other structural differences, it forms a good criterion to divide the many species into the several genera. Thus, in Polytrichum proper, the calyptra is densely hairy, while the capsule, which it invests, becomes, when mature, of a four or six sided figure. The name Polytrichum is derived from an allusion to the character of the calyptra, *polus* being the Greek for *many* and *thrix* Gr. for *hair*, so that it may be familiarly termed, the *haircap* or the *many haired* moss.

In Pogonatum, the calyptra is hoodshaped and also densely hairy, while the mature capsule is cylindrical, so that these forms distinguish it. From *pogon* Gr. *beard* we derive Pogonatum the *bearded hood* moss, or *bearded cap* moss.

In Atrichum, the calyptra is smooth, but its tip is spinulose, its form is hood shaped, and the capsule is elongated-cylindraceous and slightly curved. Hence the smooth calyptra is signified in the generic name, a, (privitive) *without* and *thrix* Gr. *hair*, the *hairless cap* or *smooth cap* moss.

Further distinctions need not be pointed out; these general and more obvious characteristics being deemed sufficient to our present purpose. We come to an enumeration of the species according to our plan.

1. Polytrichum commune. Linnæus Species Plantarum, p. 1573. Hooker and Taylor's Muscologia Britannica, 2d Ed., p. 46, table X. Smith's Linnæus Flora Lapponica, pp. 322. 326. Sullivant in Gray's Botany of the Northern United States, &c. &c.

This species is to be found in moist places, and as its name implies is a common plant. It varies considerably in sizes. Its capsule is four sided and acute-angled, which the ferruginous colored hairy calyptra completely covers, extending below the base: its operculum (the lid covering the orifice of the capsule) is short. The stem, which rises

from the earth, is simple and clothed with linear-lanceolate shaped leaves, which are bent backwards when in a fresh state, and are likewise serrate on their margins and backs.

We are informed by Linnæus that this moss enters largely into the comforts of the inhabitants of Lapland, who use it for bedding and similar purposes. "In the north of England, mattresses superior to those of straw are sometimes made with it, and Burnett also adds, after quoting Johnston, for the last statement, that it "was formed for promoting the growth of the hair, and that in Germany it is esteemed as a sudorific.'" *Outlines*, vol. I, pp. 287-8. Nor less interesting is its geographical distribution, having been found throughout Europe, in temperate and frigid parts of Asia, in Kamschatka, North America, Newfoundland, Peru, the Falkland Islands and Madagascar.

2. Polytrichum gracile (Menzies. Trans. Linn. Soc. IV. &c.) Bridel., Brylogia Universa II. 154. Sulliv. in Gr. l. c.

Usually of smaller size than the last, with a four to six-sided and obtuse-angled capsule, a *longbeaked* lid; the hairy calyptra shorter than the capsule.

Detected in boggy places at Ipswich, by the late William Oakes.

3. Polytrichum juniperinum. Hedwig. Species Muscorum, &c. Brid. Bry. II. 136. H. & T. Musc. Brit. tab. X. Sulliv. in Gr. l. c.

Stem either simple or divided, leaves terminating in a somewhat stiff point; the margins fold inwards and are smooth on their edges; a peculiarity which distinguishes the species. It is also quite a common plant.

4. Polytrichum piliferum. (*Schreber*) H. & T. Musc. Brit. tab. X. Brid. Bry. II. 142. Sulliv. in Gr. l. c.

This common and striking little moss occurs on sunny aspects among rocks, and can be readily known by its long white awns at the tips of the leaves, which when appressed to the stem by dryness, give the plants a hoary look. Its capsule is oblong, four-sided, its lid is conical, beaked, and its foliage crowded at the top of the stem.

5. Pogonatum brevicaule. Brid. Bry. II. 114. *Polytri-*

chum Pennsylvanicum. Hedw. Sp. Musc. t. 24. Sulliv. in Gr. l. c.

One of the smallest of the polytrichaceæ, and not unfamiliar to any one, who has been attracted by the habits of some of the mosses, that delight to grow on moist slopes of sandy or clayey soils. Its stems rise from a flat tissue of green, closely compacted filaments. On their summits are a few crowded and appressed, somewhat denticulate leaves. It is specified incorrectly, as a new species in a previous number of this Journal, on page 92, line 20, where it may be erased and the true name substituted.

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6. Atrichum angustatum (Beauvais.) Sulliv. in Gr. l. c. *Catharinea angustata.* Brid. Bry. II. 105. *Polytrichum angustatum*, Hooker; Musc. Exot. t. 50.

The leaves of this pretty moss are thin, delicate and inclined to curl inwards at their tips, suggesting the specific name on the 92d page of No. II. of this Journal where, erase the 4th line. The description there found, refers to the name and synonyms at the head of this paragraph, and the plant in question has also, no particular affinity with "Polytrichum lævigatum of Wahlenburg," which is exclusicely a species of high northern latitudes.

The Atrichum angustatum may be seen in thin, grassy, and moist places under trees, or in spots wherever shade and moisture prevail.

The Danvers Bowlder, *or Ship Rock.*

The phenomena of bowlders have been considered the most instructive index we possess of a powerful diluvial agency. They are found in great numbers throughout the whole extent of Massachusetts, are usually somewhat rounded in outline, and are rendered quite smooth by attrition or by atmospherical agency.

Ship Rock stands upon the summit of a precipitous cliff, about half a mile distant from Tapley's Brook, and directly north of the dwelling house of Mr. David Newhall, on the road to Lynnfield. It is of granite, and measures forty-five feet in length, twenty-two in height and twenty-five in width. Its shape is tolerably regular, resembling in some respects an inverted vessel, whence its name, but not admitting of *a very exact* measurement. Supposing its mean circumference to be one huudred feet, its diameter would be about thirty feet, and if it were spherical, its weight would be about *eleven hundred tons.* The area surrounding the Rock is also covered with loose masses of stone, many of which are estimated to weigh from fifty to seventy-five tons.

MINUTE POLYTHALAMOUS SHELLS OCCURRING ON THE COAST OF MAINE, NEW ENGLAND. By John Lewis Russell, Member of the Society, &c. Read June 29, 1842.

The advantages which the microscope affords the naturalist, seem likely to be appreciated in these times of general inquiry. Worlds of beauty—rare gems of exquisite perfection, and objects of consummate skill, with unsurpassing instances of design, are daily unfolding themselves to the curious eye. The representatives of animated creation in the lower forms of animal and vegetable life, so minute as to escape the common observation are revealed by this instrument in modes well calculated to excite surprise, admiration and instruction.

The sands on the calcareous coasts of England, present a variety of the most beautiful forms of minute creatures belonging to the order of Foraminifera, established by D'Orbigny. They serve a similar purpose as the silicious coverings of the *infusoria*, in making up by their vast congeries, entire strata and large proportions of soil in different parts of the world. "The sea downs of some and probably of most coasts are still in course of formation by living Bryozoa, which though very small, resembling grains of

sand, are yet for the most part larger than chalk animalcules, and a large proportion of the sand of the Libyan Desert has been proved to consist of such grains." Weaver's Views of *Ehrenberg's discovery*, in Philosophical Journal of London and Edinburgh, vol. 18. p. 386.

I have seen no notice of these minute shells in this country excepting an accidental one by Dr. A. A. Gould, in his Report on the Invertebrate animals of Massachusetts, in the following words, viz: "Of the very curious and minute Nautilaceæ, so many of which have been found about the British islands, there are doubtless many among the sands of our shores; but none have as yet been detected." p. 317.

During the month of August, 1841, I had the satisfaction of finding several of these "curious and minute" shells, mixed with sand, adhering to a species of marine Conferva on the beach of Kennebunk, Me. Two distinct species of these were nautiloid in their structure, and resembled Nonionina as figured by Ehrenberg in the *Abhandlingen der Koniglichen Akademie der Wissenschaften* zu Berlin, aus dan Jahre, 1839: described as found living in the North Sea. Another species appeared to belong to Rotalia, and still another species to Quinqueloculina. They are all very minute, and can only be distinguished by a magnifying glass, perceptible to the naked eye as mere points or specks, when laid on some colored substance. The two nautiloid species are very beautiful as seen highly magnified, of a pearly lustre, and partially translucent.

To the Conchologist, the microscope will open perhaps, a new field of interesting observation, and in these and similar "gems of the ocean" hidden wonders surpassing in elegance the richest treasures of the cabinet may be detected.

NOTICE OF SEVERAL FISHES OF RARE OCCURRENCE. By Henry Wheatland.

Monocanthus aurantiacus, Mitchell. *The Orange File Fish.* See Dekay's Rep. on Fishes of N. Y. p. 333, pl.

LVII. fig. 186. Storer's Synopsis, p. 244. Proceed. Bost. Soc. Nat. Hist. II. p. 72.

A specimen now in the Society's collection was captured at the Forest River Lead Works in Salem, Aug. 9, 1845. It was observed in the act of feeding upon the barnacles (Balanus ovularis) which grew upon the wood work of the pier, and was noticed for some time before it was secured. It is a Southern species, and therefore a stranger to us. Its size is appended as follows, viz: Length 21 inches, depth across from base of the dorsal spine 8 1-2 inches. This dorsal spine is single, measuring two inches in length, serrated on the posterior edge, and forms a sort of armature.

Leptocephalus gracilis. Storer in Proceed. Bost. Soc, Nat. Hist., vol. II. p. 70. Storer's Synopsis, p. 272.

Through the kindness of George H. Devereux, the specimen of this new and exceedingly rare little fish, was forwarded to the Society in the year 1845. It was taken at Cherryfield, Maine, from a basin formed in a timber raft; and its occurrence introduced a new genus to the Ichthyology of this continent. Its appearance is like that of a narrow piece of tape, ending in a somewhat acute point at the snout, and diminishing gradually in a similar way, to the end of the tail, which is however rather more blunt. It is also so thin that when alive it must have been transparent. In Pennant's British zoology, vol. III. p. 212, pl. 28, mention is made of a species still rare in England, under the title of Leptocephalus Morrisii. The same is described and figured in Loudon's Mag. of Nat. Hist. vol. 6. p. 531; and reference is made to four other specimens in the fifth vol. pp. 313. 742., occurring in Great Britain. The Cherryfield specimen is a distinct species, as shown by Dr. Storer in his observations, as quoted at the head of this paragraph.

Thynnus vulgaris. Cuv. and Valenc. *Common Tuny.* See Yarrell's British Fishes, vol. I. p. 134, and fig. Storer's Report of the fishes of Massachusetts, p. 47, &c.

A specimen of this rare fish was found stranded on the flats of the North River, Salem, between the Railroad and Beverly bridges, Aug. 23, 1846. It is commonly known to us as the Horse Mackerel or Albicore; but seldom seen in our waters and never noticed in shoals as in the Mediterranean Sea.

The size of the specimen by measurement was found to be nine feet and six inches in length, and in girth seven feet, measured near the pectoral fins; which it is to be observed, exceeds the usual size as judging from those caught in the Mediterranean where they seldom exceed four feet in length, and frequently are not more than *three* feet long.

PRIONOTUS *Spp.* CUV. AND VALENC.

Two specimens were presented to the cabinet during the summer of 1847, caught in Salem Harbor; supposed to be Prionotus lineatus and Prion. pileatus. See Storer in Proceed. Bost. Soc. Nat. Hist. p. 77. Storer's Synopsis, pp. 50 and 270.

CARANX DEFENSOR. *Southern Caranx.* Dekay, Report, Fishes of N. Y. p. 120. pl. xxiv. fig. 72.

This beautiful fish was found on the Lynn beaches, during the summer of 1847, by Mr. Joseph True, to whom we are indebted for the specimen. It is fourteen inches in length.

TETRAODON TURGIDUS. MITCHELL. *Swell Fish or Puffer.* See Storer's Report, p. 169. Storer's Synopsis, p. 241.

A specimen of this curious fish was caught in Salem Harbor in the summer of 1848. Though very common south of Cape Cod, yet it is not usually seen in Massachusetts Bay.

SEBASTES NORVEGICUS. CUV. *Norway Haddock.* Also known as the "*Rose Fish*," "*Hemdurgan*," and "*Snapper.*" See Storer's Report, p. 26.—Synopsis p. 60. A specimen of this uncommon species was caught off Mise-

ry Island, in Salem Harbor, August, 1848, and presented to the Society.

ECHENEIS ALBICAUDA. MITCHELL. *White Tailed Remora.* See Storer's Report, p. 153. Synopsis p. 231.

A specimen was caught in Collins' Cove, Salem, August, 1850, by Mr. Jacob Striley. Cabinet of the Society.

FURTHER NOTICE OF RARE PLANTS. BY JOHN LEWIS RUSSELL.

ZOSTERA MARINA. L. *Eel Grass. Sea-wrack.* This plant may be readily found in blossom in the month of June; at which season of the year, I have repeatedly gathered it near the tide mills in Salem, and likewise in other places on our shores.

VACCINUM VITIS IDÆA, L. This beautiful representative of a more Northern flora was detected by the late William Oakes, in a pasture in Danvers, in the year 1820. The spot has been favorably regarded ever since, as interesting to the botanist, and according to the observations of Samuel P. Fowler, the plant has gradually increased from year to year. Mr. F. has had the satisfaction of detecting another locality about two miles distant, where a variety of the plant with narrower leaves occurs. It is likewise susceptible of cultivation, as Mr. F. has proved.

CLADONIA UNCIALIS, *variety* e, *reticulata.

In great perfection of size and fructification at Duxbury, Plymouth County, where I have gathered it in abundance, and I have noticed it also on Monadnoc in a sterile state.

It now constitutes a species under the name of CLADONIA BOREGI. Tuckerman, for reasons, which he specifies in his Synopsis of the Lichenes of Northern United States, &c.

CLADONIA GRACILIS. *Variety* elongata, FRIES. In a fine fruited condition on a high rocky hill in Danvers.

CONSPECTUS OF SHELLS FOUND IN ESSEX COUNTY, &c.

The attention, which the study of the lower tribes of marine and of molluscous animals have received within the last twelve years, since the issue of the second number, induces the attempt to furnish a list of the localities of those usually called *shells*, as well as the occurrence of other species of the same, not specified in the "Familiar Notice." In preparing the present paper, constant reference has been made to Dr. Gould's Report on the Invertebrata of Massachusetts, published in 1841, to the several volumes of the Boston Journal of Natural History, to the Proceedings of the Boston Society of Natural History, and likewise to the "Shells of New England," by Wm. Stimpson, 1851.

The waters of the bay which wash the shores of our County have been dredged, the maws of fishes caught in deep water have been examined, and the various seaweeds driven on the beaches by winds have been carefully searched. The muddy bottoms of estuaries where fresh and salt waters combine, have been inspected, and our rocky hillsides and extensive ponds have received attention, by members of our Society and by others. The names of Dr. William Prescott, formerly of Lynn, of Dr. Henry Wheatland, of Salem, of Mr. Joseph True of Salem, of Messrs. Tufts and Haskell of Lynn, of Mr. William Stimpson of Cambridge, may be adduced.

As a condensed view of the present knowledge of this portion of the Zoology of Essex County, the list may be of value, while it may serve at the same time to awaken new zeal in further scrutiny.

The following abbreviations have been employed to denote authorities.

Gould's Report, &c.,	G.
Boston Journal, &c.,	Bost. Journ.
Proceedings of the Boston Society, &c..	Bost. Proc.
Stimpson's Shells of New England,	St. Sh.
Dr. Henry Wheatland,	W.
Dr. Wm. Prescott,	P.
Joseph True,	Tr.
S. Tufts, jr.,	T.
Tufts & Haskell,	T. & H.
Wm. Stimpson,	St.
J. P. Cothouy,	Couth.
Prof. Adams,	A.
Lamarck,	Lam.
Linnæus,	L.

Adeorbis costulata. St. Bost. Proc. iv. p. 14. In deep water off Cape Ann.

Alasmadonta marginata. G. Shawshin River, Andover.

Amicula vestita. St. Sh. *Chiton Emersonii.* Couth. G. Salem Harbor. W.

Anatifa vitrea. Lam. On fuci thrown up on Lynn beaches, after storms in summer. Tr.

Ancylus fuscus. A. Andover. G.

Anodon implicata. G. Ponds, Lynn. P. Brown's Pond, Danvers, W. These and the other Naiades of New Eng-

land seem to have been under revision by Agassiz: See *Stimpson's Shells of N. E., at pp.* 13. 15.

Anomia ephippium. L. About Orne's Point, W.
Variety aculeata. Lynn. P. Tr.
Variety squamula. Lynn Tr.

Astarte castanea. G. Orne's Point, W.

Astarte quadrans. G. Lynn, P. Salem Harbor, W.

Astarte sulcata. G. Orne's Point, W. Marblehead Harbor at low water. St. Sh. 18. Lynn, Tr.

Buccinum plicosum, G. Common in the tide-mill ponds, Salem, Tr.

Buccinum undatum, L. Salem harbor, T. St. Sh. 46.

Bulimus lubricus, G. Salem, Tr.

Bulla punctostriata, St. Bost. Proc. iv. 17. Off Cape Ann.

Bulla triticea, G. Off Nahant. T. & H. St. Sh. 50. Salem, Tr.

Cemoria Noachina, G. Stomachs of fishes. Salem harbor, W. Lynn beaches, Tr.

Chiton albus, G. Stomachs of fishes. Also cast ashore upon the Lynn beaches, Tr.

Chiton marginatus, G. "Found living, a few years since, by Dr. Charles Pickering, at Phillips beach,"—Gould: and "no other specimen has been found on our coasts." St. Sh. 28.

Chiton ruber, G. Stomachs of fishes, W. Mr. True finds this species to be the most abundant of any of the Chitons on our beaches.

Cingula minuta, G. Lynn beaches, Tr.

Cochlodesma Leana, Couth. *Anatina Leana*, Conrad. G. In a living condition at Point beach, Lynn, Tr.

Columbella Gouldiana? "Ag. Ms." St. Sh. 48. Lynn beaches, among the roots of kelp. (Laminaria Sp.) Tr.

Cumingia tellinoides, G. One living specimen in tide-mill pond, Salem, Tr.

Cyclas dubia, G. Lynn, P.
Cyclas partumeia, G. Lynn, P. Salem, Tr.

Dentatium dentale, G. Marblehead harbor by dredging fifteen to twenty fathoms. W. Lynn beaches, Tr.

Fusus decemcostatus, G. Off Nahant, T. & H. St. Sh. 46.
Fusus harpularius, G. Dredged at Lynn, T.—Salem, W. St. Sh. 49. Near Nahant, Couth. G. 291.
Fusus Islandicus, G. *Tritonium Islandicum*, Loven. Off Lynn, T. & H. St. Sh. 46.—Also *Variety* pygmæus, G. *Trytonium pygmæum*, St. Sh. 46. Salem harbor, W.

HELICES. The following list of Helix proper was furnished by Mr. S. Tufts, jr. He detected all the species on wooded hill sides fronting a southern aspect at Swampscot, Lynn. Mr. True has found the same in the limits of Salem, with one or two other species.

Helix albolabris, G.
Helix alternata, G.
Helix arborea, G.
Helix electrina, G.
Helix exigua, G.
Helix hortensis, G. *Helix subglobosa*, Binney, Bost. Journ., vol I. pl. 17. On Eagle Island, Salem harbor, occurring abundantly with H. H. alternata and albolabris.
Helix indentata, G.
Helix labyrinthica, G.
Helix lineata, G.
Helix minuscula, G.
Helix pulchella, G.
Helix chersina, G. Salem, Tr.
Helix Sp. Salem, Tr.

Kellia rubra, G. On various species of sea-weeds (Algæ) in summer, abundant, Lynn beaches, Tr.

Leda limatula, St. Salem harbor, W. St. Sh. 10. Lynn beaches, Tr.
Leda myalis, St. *Nucula*—G. Lynn beaches, P.
Leda sapotilla, St. *Nucula*—G. Salem harbor, W.

Limnæadæ. Mr. True has found the following species of this order near Salem, within its limits; and nearly all the same have also been detected by Dr. Prescott, in Lynn.

Ancylus fuscus, G.

Limnæa columella, G.
Limnæa elodes, G.
Limnæa macrostoma, G.
Limnæa modicellus, G.
Limnæa umbilicata, G.

Planorbis armigerus, G.
Planorbis bicarinatus, G.
Planorbis campanulatus, G.
Planorbis deflectus, G.
Planorbis exacutus, G.
Planorbis elevatus, G.
Planorbis hirsutus, G.
Planorbis lentus, G.

Physa ancillaria, G.
Physa elongata, G. Lynn, T.
Physa heterostropha, G.

Lucina radula, G. Single valves on Lynn beaches, Tr.

Mactra lateralis, G. Abundant in the muddy bottom of the tide-mill pond, Salem, W.

Margarita arctica, G. Salem, Tr.

Margarita argentata, G. Off Cape Ann. Gould, 256. Lynn beaches, Tr.

Margarita obscura, G. Beverly harbor, Agassiz. Off Egg Rock, near Nahant, T. &. H. St. Sh. 31.

Margarita undulata, G. Alive on Phillip's beach, Gould, 254.

Menestho albula, St. *Pyramis striatula*, Couth. Vicinity of Cape Ann, Couthouy. Gould, 269. Off Baker's Island, Wheatland, St. Sh. 40.

Mesodesma arctata, G. Off Nahant, Gould 57. Abundant at Plumb Island, near Newburyport, W.

Nassa trivittata, Say. *Buccinum trivittatum*, G. In abundance at Phillip's beach in a living condition, Dr. Prescott, Gould 309.

Natica flava, G. One specimen, Salem, Tr.

Natica immaculata, G. Salem harbor, W. St. Sh. 43.

Natica pusilla, G. Stomachs of fishes off Half-way rock, W.

Nucula delphinodonta, Mighels. Off Cape Ann, St. in Bost. Proc. iv. 13.

Osteodesma Hyalina, G. Salem, Tr.

Paludina decisa, G. Common in ponds and fresh water streams in Essex County.

Pandora trilineata, G. Beaches at low water, W. In a living condition, Lynn beaches, Tr.

Pecten Magellanicus, G. Orne's Point and Beverly Bar, W.

Philine formosa, St. in Bost. Proc. iii. 334. Off Cape Ann.

Pleurotoma bicarinata, G. Off Nahant, Couthouy. Lynn, Dr. Prescott. Gould, 281.

Plerotoma violacea, St. in Bost. Proc. iv. 17. Muddy bottom of Salem harbor.

Pupa curvidens, G. Phillips' Point, Lynn, Gould 189.

Rissoa eburnea, St. in Bost. Proc. iv. 15. Two specimens in thirty fathoms, off Cape Ann.

Rissoa multilineata, St. in Bost. Proc. l. c. Dredged in five fathoms off Great Misery Island (Salem) and also near Nahant.

Rissoa pelagica, St. *Cingula semicostata*, Mighels, Bost. Journ. iv. 49. Somewhat abundant in deep water off Cape Ann. St. Sh. Bost. Proc. iv. 15.

Scalaria Groenlandica, G. Off Nahant, T. & H. St. Sh. 39, stomachs of fishes, Salem harbor, W. Lynn beaches, Tr.

Scalaria Novangliæ, Couth., Bost. Journ. ii. 96. pl. 3. f. 5. A single specimen off Cape Ann, Couth. l. c.

Serpula vermicularis, G. Lynn, P. Beaches at Lynn, on the smaller sea weeds, Tr.

Solemya velum, G. Salem and Lynn, Tr. See Stimpson's "Shells of New England," p. 21, for an account of the habits of this animal.

Solen ensis, L. Shores Lynn, Salem, &c.

Spirorbis sinistrorsa, G. Abundant on Fuci, &c., Salem, Tr.

Spirorbis spirillum, G. On algæ, Lynn, Tr.

Succinea campestris, G. Salem, Russell.

Succinea ovalis, G. Salem, Russell.

Terebratula septentrionalis, G. Salem harbor, not rare, W.

Teredo dilatata, St. in Bost. Proc. iii. 113. In floating wood, such as buoys at Marblehead and Lynn, T.

Thracia truncata, Mighels. Deep water off Lynn, T. St. in Bost. Proc. iv. 13.

Turritella acicula, St. From fishes caught off Lynn, Tufts; also off Cape Ann. St. in Bost. Proc. iv. 16.

Turritella areolata, St. From fishes off Cape Ann, St. in Bost. Proc. iv. 16.

Velutina haliotoides, Moller. Beverly harbor, Agassiz. St. in Bost. Proc. iv. 44.

Velutina zonata, G. From stomachs of fishes off Half-way Rock, W. Lynn, Tr.

NOTE.

HYLODES PICKERINGII. This beautiful native reptile first described and figured by Dr. Holbrook, in his North American Herpetology, will be found to be described under an incorrect name, viz: (Hyla femoralis, var. c.) See p. 93. The Genus Hylodes was separated from Hyla by *Zitzenger*, on account of the absence of a sternum (breastbone) as in the true Hyla. Dr. CHARLES PICKERING, formerly of this city, discovered it, in this vicinity, several years ago, and, as a new species, it has been dedicated to him; a tribute of scientific respect.

INDEX.

ERRATA.

Page 46. Line 1—for have *read* has.
47. 13—*dele* the *comma.*
48. 1—after Latin *insert a comma.*
49. 27—after being *insert* often.
52. 23—after solidissima, *insert a period*
52. 27—for Du *read* Dr.
53. 1—for variety a *read variety, a.*
53. 18—at its close *insert a period.*
55. 31—for the semicolon *substitute a comma.*
57. 22—for vary *read* variety.
63. 1—for peircer *read* piercer.
71. 8—after short *insert a comma.*
75. 1—for Montague *read* Montagu.
82. 2—for occurs *read* occur.
88. 30—after Feldspar *dele the comma.*
93. 7—after calyptra *insert* a.
99. 16—for Aurata *read* Crocata.
100. 22—for bacillaris *read* Floerkeana.
113. 12—for Trichotropris *read* Trichotropis.
117. 16—for aud *read* and.
117. Third line from bottom for foliages *read* foliage.
118. Fourth line from bottom for sizes *read* size.
119. 10—for formed *read* famed.
119. 18—for Brylogia *read* Bryologia.
120. Twelfth line from bottom for exclusicely *read* exclusively.
121. 10—for huundred read hundred.
125. 14—for Vaccinum *read* Vaccinium.
126. 3—for BOREGI. Tuckerman *read* BORYI of Tuckerman.
127. 18—for Cothouy *read* Couthouy.
129. 6—for Dentatium read Dentalium.
129. 13—for Trytonium *read* Tritonium.

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