# DOCUMENTS

PRINTED BY ORDER OF

# THE LEGISLATURE

OF THE

# STATE OF MAINE,

DURING ITS SESSION

# A. D. 1847.

*AUGUSTA:*

WM. T. JOHNSON,.....PRINTER TO THE STATE

1848.

# REPORT AND RESOLVES

OF THE

# LEGISLATURE OF THE STATE OF MAINE

RESPECTING

# INTERNATIONAL

# LITERARY EXCHANGES,

TOGETHER WITH

## DOCUMENTS RELATING THERETO.

**Published by order of the Legislature of Maine.**

*AUGUSTA:*

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# REPORT.

THE joint standing committee on the library, to which was referred a special message from the governor, (with a letter from M. Alexandre Vattemare,) on the subject of *International Literary Exchanges*, have had those matters under consideration, and submit the following

## REPORT:

The subject of *International Literary Exchanges*, is beginning to receive the attention, in some parts of the civilized world, that its importance deserves. Under the untiring and self-sacrificing efforts of that universal friend of man, the accomplished VATTEMARE, the undertaking—unpropitious as were his first essays in the unbeaten track—has assumed an interest and importance, unsurpassed by the efforts of any friends of peace and paternal love throughout the world. It is refreshing at this period, when war and bloodshed still exist, to welcome the man who has for years been engaged in extending the circumference, and cementing the union of mind with mind, society with society, nation with nation. The bond thus created by the magic chain of friendship, and the love for science and letters which knows no geographical limits, is one that contemplates all coming time within its horoscope.

With joy may the citizens of our country hail this era, when the bearer of this treaty of universal peace and good will comes among them—a minister plenipotentiary as it were, bearing tokens and testimonials of universal brotherhood from the wise, the virtuous, the learned of France. The example of M. VATTEMARE, so heartily begun, so untiringly pursued for years, cannot fail of its reward: a reward such as *he* would delight to witness, and one alone worthy of *his* aim;—the spreading of his enthusiasm and patience into other nations—the catching of his zeal and devotion by men of other climes,—who will hereafter strive, as he has already done in his own, to bring America, her principles, her intellect, her republican simplicity and freshness home to the knowledge of *their* countries. Nothing dissipates ignorance, and coldness, and distrust, more rapidly than the interchange of sentiment and thought, freighted with good will, through the intercourse of amiable and intelligent minds. As in a hamlet or village, envy and misapprehension and jealousy flee before the genial warmth of association about the domestic fireside or in the social meeting,—so nations separated by thousands of miles of ocean, may be drawn together as at one board, by the kindly interchange of tokens of respect, from the minds of the masters in science, and art, and poetry—by the statesmen and philosophers of those nations. What a noble occupation of time it is, to which a man may devote his life! this forging the bonds, and cementing them in one, that shall clasp nations in one great union—driving into oblivion the feudal notion not yet extinct, of force of arms,—compelling it to yield to the desire for universal brotherhood! Such is the work of VATIEMARE! to such noble ends he

devotes his life! Should we be worthy to stand upon this broad and philanthropic platform, did we not welcome, with warm hearts, him who has offered himself a willing, devoted pioneer and laborer in this ennobling cause?

It is a lovely testimonial for France, and deserving of remark in this place, that since our young republic arose—whose fame has already spread and greatness increased, as republican principles deserve—*twice* a son of France has been impelled to our shores by love of those elevating principles of freedom. The MARQUIS DE LAFAYETTE, with youthful impetuosity came in the darkest hour to cheer the noble men who were struggling for life and liberty. Fifty years after, and this nation arose as one man, to welcome and thank the sage for his devotion. Anon, VATTEMARE comes among us, impelled by the same love of the home of freedom. But he comes in another guise. The helmet, the sword, the armor, are laid aside. He has no need of these. The oppressed land has sprung up and shook itself from its chains. Its enemies of '76 are now its friends. The emblems of war would ill-become this second missionary from France. *He* comes to perpetuate the work so patriotically begun by the chivalrous LAFAYETTE. Our country now rears its head in conscious greatness. The feeble child has become a hardy man. He needs no sympathy from abroad to protect him from the attacks of the foe. As his body has expanded so has his intellect. He needs now that refreshment which shall *perpetuate* his greatness. Then it is that VATTEMARE comes, clad with intellectual armor of helmet and sword—eager to impart that "which is twice blessed—blessing him that gives and him that takes."

Accompanying this report, (and marked A) is a letter from M. VATTEMARE to the governor, and the message of the governor consequent thereupon.

Your committee have also obtained the eloquent and explicit lecture of M. VATTEMARE, (marked B) delivered on Friday evening last in the representatives' chamber. The publication of this lecture, in connection with this report, will render it entirely unnecessary for us to make a detailed explanation of the system of exchanges as carried forward by M. VATTEMARE. In that lecture he has given a succinct history of his philanthropic and generous enterprise, in a manner that makes the subject plain and winning to all. Something may be learned, also, from the lecture, of the estimation in which this noble project is held in Europe as well as in this country. But in that respect, the testimonials not expressed there are as leaves upon the tree in number; voluntary tributes from literary societies, the United States congress, the legislatures of states, learned societies of Europe, and from the friends scattered over various countries.

That the legislature may judge of the character and extent of the intellectual boon M. VATTEMARE has procured from the government of France for the Maine State Library, reference may be had to document marked C, and which the committee suggest should be printed with the other documents: and even this catalogue does not embrace the whole donation, as two cases of books, &c., designed for this state, and already arrived in the country, have not yet reached the capitol.

Accompanying this report (marked D) are also "Instructions on the best mode of collecting, preserving and transporting objects of Natural History." Instructions,

which, it is highly necessary should be circulated in our state, to enable its citizens to aid in carrying out and perfecting this system of exchanges, in various branches of science, of objects indigenous to this state. These instructions the committee recommend be published under the superintendence of the Botanist for the state, (just appointed) for distribution in proper channels.

In the communication of M. VATTEMARE to the governor, it will be observed, he speaks of the necessity of a permanent librarian, whose place shall be in the library room. It has occurred to your committee, that the time will soon come, if the present zeal in behalf of the library continue, (and they trust it will) when it will have acquired so much importance as to need the supervision of a board of trustees—which might be composed of the presidents of Bowdoin and Waterville colleges, or a portion of their Faculties. They, aided by the services, during the recess of the legislature, of some scientific and classical gentleman (a clergyman it might be) of the town of Augusta, as librarian, with a proper remuneration for his services, might carry out the views by him suggested; and, with the aid of the annual appropriation of $300 for books, (which can be increased if expedient) ultimately give the library of the State of Maine, a celebrity throughout the whole country—making it the favorite retreat not only of the English scholar, but also of those who may add to other attainments the elegant accomplishment of the French language.

Another thought in connection with the improvement of the library, has been suggested to your committee. It is worthy of consideration and may be improved upon hereafter. It is, that an annual appropriation of one or

two hundred dollars be made, for the purpose of procuring a number of suitable medals of silver, with appropriate devices, to be sent to scientific men and artists of France, as a mark of respect and recognition from the State of Maine. The return from them, of works in their department, would be various, beautiful and valuable. From the painter might be returned, a specimen of his skill, for exhibition in our library—from the philosopher, elucidations on his favorite topics—from the statesman, the scintillations of his intellectual labors.

Document marked E, is a letter from Judge EMERY, the chairman of the board of education, to the minister of public instruction of France, acknowledging, in behalf of the board, the receipt of certain favors from that department. The committee recommend that the letter be printed with the other papers submitted.

Your committee will close this report by recommending the passage of the following resolves, which are rendered worthy of unanimous adoption, by the consideration bestowed upon the State of Maine by the government of France, as well as by the admirable zeal that has brought M. VATTEMARE once more to the shores of America, as the bearer of the lovely tokens of brotherhood. CHARLES HOLDEN, *Chairman.*

# STATE OF MAINE.

*Resolves relating to the International Literary Exchanges, effected by M. Alexandre Vattemare.*

*Resolved*, That the plan for the mutual interchange between nations, of specimens of natural history, books, and other productions of science and art, devised by M. Alexandre Vattemare,—and to the propagation of which he has so long and so untiringly devoted his time and talents, is a wise and happy means of diffusing knowledge, and of promoting peace and brotherhood among men.

*Resolved*, That we take pleasure in expressing our high sense of the enthusiasm, disinterestedness, and perseverence with which M. Vattemare has pursued his great object; and that we congratulate him on the success which has already crowned his labors, and which, we trust, is but the earnest of the universal adoption, and the lasting existence of his plan.

*Resolved*, That while the expensive and useful books and documents with which M. Vattemare has been entrusted by various authorities and institutions in France, for the library of this state, should be received with the respect due their intrinsic value and the distinguished sources whence they emanated; they possess much higher interest as tokens of the feelings of good will of the French nation towards America; and that we cordially

reciprocate this sentiment, with a grateful remembrance of ancient obligations, and with the hope of a continued and increasing friendship between the two countries.

*Resolved*, That duplicate copies of various works in the state library (not otherwise required) be tendered M. Vattemare in continuation of the system of international exchanges, so auspiciously commenced. The selections to be made under the supervision of the secretary of state.

*Resolved*, That one thousand copies of "Instructions on the best mode of collecting, preserving, and transporting objects of Natural History," be printed, under the superintendence of the botanic surveyor of the state, and distributed under his direction, to those societies and individuals within the state, that might aid in promoting the designs of said instructions: reserving to M. Vattemare the number of copies of the "Instructions" he may desire, for his own use.

# MESSAGE AND COMMUNICATION.

*(A.)*

*To the President of the Senate, and*
*Speaker of the House of Representatives:*

I herewith transmit a communication this day received from Mons. Vattemare—the distinguished founder of the system of international intellectual exchanges, and the constituted agent of France and Maine in connection with that system. I cannot entertain a doubt but the legislature of Maine will fully appreciate the disinterested efforts and sacrifices of Mons. Vattemare, in perfecting a work so important in its social and intellectual results, to the whole civilized world; or that they will extend to him personally and to his suggestions on that subject, such consideration as his well earned reputation of a great public benefactor would seem to demand.

The allusion made by him to the ancient friendship between France and our republic, and the wish expressed through him on her part to increase social relations, "by mutual exchanges of public acts of courtesy and friendship," will meet with a hearty response from every citizen of the state. In conclusion, I would add, that I shall

cordially co-operate with you in any measures you may deem expedient in establishing this system upon a liberal and permanent basis.

JOHN W. DANA.

COUNCIL CHAMBER,
July 22, 1847.

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AUGUSTA, July 22, 1847.

SIR :—After an absence of six years, I return to Maine, charged by the Chamber of Deputies, the several ministerial departments, the corporation of the city of Paris, the Royal Central Society of Agriculture, and others, to express to the legislature of Maine, their high appreciation of the valuable documents, maps and collection of minerals, which I presented in the name of the state, and of the liberal spirit which dictated that act of courtesy. In the same spirit they again present to Maine, through me, their and your honored agent, another collection of curious and valuable works, relative to legislation, history, antiquities, statistics, literature and the fine arts, &c., &c. They only wish in return, that Maine will do them the favor to receive these their tokens of respect, and be stimulated further to favor them in return with such works of a public value, such as laws, plans of public improvements, reports on legislation, commerce, navigation, agriculture, &c., many duplicates of which are now in the State Library, of no use to the state, but of infinite value abroad.

France and Maine are now connected by so many ties, not only of ancient friendship, but increasing social rela-

tions, that I am most happy in being in this instance, the honored instrument of mutual exchange of public acts of courtesy and friendship, by which France hopes to be able to cement still more strongly the kind and happy relationship which has always existed between her and the United States.

As agent of the state, permit me to observe that the exchanges between Maine and France have suffered a great deal for want of regularity. Of the documents, maps, &c., provided by the legislature in 1840, and ordered to be distributed yearly, to the extent of fifty copies bound, for the international exchange, only three collections in 1844, have been received by me. The consequence has been, (as I would not have Maine to be thought in fault for a moment,) I have been obliged to give a great number of works from my own private library, in place of those I was to receive under the foregoing order of the legislature.

This disappointment, is of course, to be attributed only to the want of a proper officer to carry out this scheme. I mean a librarian, who would be identified with scientific matters, and whose appointment might be somewhat permanent. A good and truly useful librarian can only be made by time and long experience. Such an officer should be a kind of living catalogue ready to answer every important question which might be put to him by the members of the legislature. Might he not be nominated in some way by your colleges, and then appointed by the legislature, and placed under the supervision of the secretary of state, and so hold the office as long as he conducted with propriety ?

Under some such arrangement, the scientific intercourse between Maine and Europe would be conducted with care and efficiency, and yield all the advantages promised by the system of international exchange.

I am ready, and hope to be permitted to give to your excellency and the legislature, a particular account of my system and the discharge of my duties as agent of the state; and respectfully request that some hour may be given me for that purpose.

I have the honor to be sir,

Your excellency's very humble servant,

ALEXANDRE VATTEMARE.

His Excellency, the governor of Maine.

# LECTURE OF MONS. VATTEMARE.

*(B.)*

GENTLEMEN,—or rather, FELLOW-CITIZENS—for the spirit which leads me to appear among you, dictates the sentiment that we are fellow-citizens, if not of the political republic of the *United States*, at least of the great republic of *mankind!*—permit me to congratulate myself that I am once more among you on your own hospitable shores.

When in France, my heart yearns towards America. When in America, I feel that I am among the friends of France. Is not my presence among you this evening the best evidence I can give, that *to me* France and America are bound together by ties both of blood and affection that render them, if not one people, yet sisters of one family.

This glorious assemblage of the enlightened and patriotic representatives of the noble and warm-hearted people of Maine, but adds another proof to the many I have hitherto witnessed of their readiness to lend their aid to any measure calculated to advance the moral and intellectual character of their country and raise her to a high station among the nations of the earth.

I have, in the first place, gentlemen, to return you my most sincere thanks for the powerful and enlightened support I received from the governor and legislature of this state, who appointed me their official agent and voted a generous appropriation to aid in defraying part of the expenses of the agency in Paris. Maine was the first state of the American union, who lent me a truly helping hand, for the legislature understood well that without the nerve of *war*, even this system of *peace* and *good will*, could not have had long existence; they knew that such allocation was not merely to aid me, but above all, to *secure its permanency;* for, had I been forced by death or want of support to leave the office, it would have been difficult to find, not a more able person than myself, but one who would devote his whole energy to so arduous a task, and sacrifice to it his time and fortune without being remunerated for his labors. You felt that *then* all the fruits of my untiring exertions—all the sympathy I have been so fortunate as to awake on both sides of the Atlantic, would have been lost, and the edifice, which the wisest men of your country have been helping me to erect, would have fallen to the ground, and all traces of it vanished with my name.

The readiness with which the successive legislatures voted the continuations of these exchanges, is a striking proof of their high knowledge in politics, for they understood at once that this bill was to be considered as an international law, that it could not be repealed, as a local bill might be, the foreign nations having adopted measures for the establishment *on a permanent basis*, of this intellectual union with your state. To Maine, therefore, belongs the first homage of my gratitude, for the full suc-

cess of a plan, which has been considered as the true *philosopher's stone* which converts whatever it touches into something of more worth than gold, inasmuch as *wisdom* is better than fine gold—*giving to all* and taking *from none*, and which has been characterized by one of our illustrious poets and statesmen, as *the great locomotive of universal civilization.*

I dare say gentlemen, that a simple narration, giving a general outline of my system, will interest you ; if so, I will take the liberty to say, that this system in which I have engaged, as I said before, all my time, energies and property, for the last nineteen years, although productive of vast results, is a simple scheme, and told in a few words : it consists of an international exchange of all that is valuable in sciences, literature, natural history and the fine arts—and the establishment in every nation and state of an *institution*, (under the fostering care of its government,) to receive these exchanges, forming not only a *museum* illustrative as well of the powers of nature, as of the state of perfection to which the productions of the human mind and hand have arrived, or are tending to in every quarter of the globe, but a kind of patent office, where the creations of the industry, the achievement of the intellect, of the inventive faculties, and of governments of each country, may at once and always be assigned to their true origin, and always verified without doubt or difficulty. And on this occasion allow me to make the following remarks :—

It is a lamentable fact that the United States does not now occopy that rank in European estimation to which her social and national position entitle her. She is either seen through the distorted medium of a foreign press, or

judged from the narrations of prejudiced travelers, who visit her shores merely to discover such faults and foibles as will enable them to make a saleable book, regardless of the scriptural injunction by which *they should* first see their home failings. Had the people of Europe an opportunity of learning your wise and salutary laws; the peaceful and yet powerful working of your free government; your admirable institutions for the punishment of vice and the relief of honest poverty; the freedom of your religious views, and the universal means of education which you possess; your public works and public press, rivalling each other in public benefit; your immense natural resources and the enterprising industry of your citizens; could this knowledge but be diffused, Europe would at once be forced to respect and admire you—and while proud that your continent was peopled by her sons, receive her citizens as brothers—as equals in this civilized and enlightened age.

This desideratum can easily be obtained; a few of the extra copies of the public documents which lumber rooms in many of your capitols—a collection of your laws—an extra copy or two of the works of your authors and editors, who, I confidently assert, will cheerfully contribute them—and a collection of your minerals—and the work is accomplished; the veil of ignorance which shuts out your country from view will fall, and she will stand in the eyes of Europe in her true dignity and glory—illuminated by the blaze of intellectual light, ever radiated from the constellation of stars that deck her standard! She will be known. She needs but to be known to be appreciated, admired and respected.

But your state will reap a rich reward for thus elevating

the national character. The treasures which have for centuries been accumulating in the vast storehouses of European knowledge—the works of her artists, inspired by the masterpieces of the world—the laws founded on the experience of ages, which direct her vast governments and protect her immense population—will be sent you with a profuse hand in exchange for what cost you a mere trifle. Value, intrinsic value, will not for a moment be taken into consideration.

*The Bulletin des Lois*, (a complete collection of the French laws, from 1789 to 1847—250 volumes,) have already been sent, for a copy of the revised statutes of one of your sister states; and you can judge by yourself, whether the returns already made have answered your expectation. It may be said that the United States—where literary collections are but of modern origin, and duplicates of books have been rarely accumulated—has but little to offer in the way of exchange. This is, however, far from being the case. Wanting printed books, the natural productions of your country, specimens of the animal, the vegetable and the mineral kingdoms—your lizards, snakes, porcupines—your most prolific reptiles, snails, fishes, &c.—specimens of the different trees growing in your vast forests—your plants, seeds, &c.—would be adequate returns for the finest productions of the European genius in sciences, arts, literature, industry, &c., &c.

It was with the intention of giving popularity to natural studies and researches in the new world, as well as the formation of collections of local natural productions in each state, that I published last year, with an account of the movement of the international exchanges between

France and North America from 1845 to 1846, "*Instructions for collecting, preparing and forwarding objects of natural history:* written by the professors, administrators of the museum of natural history at Paris," with the hope that the legislatures of each state of the union, would appreciate the importance of having the same re-published and widely circulated. In short, while the first mentioned objects will be gloriously effected, you will be real gainers by the exchange, and fill your state libraries, or the collections of your universities, with what it would cost immense sums to purchase. Indeed, a large portion of the books and works of arts thus to be obtained, belong to government and cannot be purchased.

Is not this a simple scheme, and yet, as before remarked, productive of vast results? Who can calculate them? One of your countrymen declared—that appealing as it does to the higher intellectual powers, it is destined to place all nations, at no very distant period, on a parallel as regards civilization, morality, and those things which alone form the true foundation of human happiness; it will call forth from the hidden archives of learning and philosophy, things adventitious to the more complete progress of science, until the whole world will be flooded with one gorgeous blaze of intellectual light and glory. Then will all national and political prejudices be melted down into one confluent mass, forming an harmoneous scientific commonwealth, whose ensign shall be knowledge, and whose motto shall be peace!

I wish that I had time to give you an account of the success which attended the introduction of this scheme in Europe, for it would convince you of its utility and practicability. Almost every nation adopted it. Thous-

ands of volumes were brought from darkness to enrich the libraries of other lands, and new and hitherto unsuspected sources of historical truth were discovered. As an evidence of this, I will only state, that after the success of my first memorial to the legislative chambers of France, in 1836, the minister of public instruction requested from the librarians of the several public libraries all over France, (about three hundred of them,) to send to his department all the duplicate works and odd volumes considered as useless lumber in their collections, promising to them modern and complete works in exchange. About twenty of them only answered immediately to the minister's appeal, yet more than 50,000 volumes were transmitted in less than one year's time to a central depot in Paris. The several librarians were then invited to come and select from among this immense collection any works that might be wanted in the public libraries entrusted to their care. Most of them found scientific treasures, the absence of which was considered as a great and irreparable loss, and, strange to say, the greatest number of these ancient works were completed with odd volumes. After the public libraries of France were thus provided, (for charity begins at home,) the minister ordered the rest to be given to me for international exchanges. Above 4,000 volumes were thus put at my disposal, out of which number I succeeded, after a good deal of labor and patience, in forming a rare collection of about 1,500 works relative to theology, (a great number of precious old bibles,) history, law, physic, political economy, &c., published in France from 1475 to the end of the 18th century. This collection is a portion of the scientific riches I brought out from France, and will be distributed among the scientific

establishments of the several states of America who have enlisted themselves in our intellectual confederation of nations.

Emperors and kings, the *literati* and the clergy, sent me the most honorable and flattering testimonials of their approbation, and after laboring for twelve years, I had the proud satisfaction of seeing my plans triumphantly successful in Europe.

But there was another vast continent where my system was as yet unknown—a land which possessed no antique works, but was rich in objects of natural history. There too, was a republic, whose laws were anxiously sought after by jurists of Europe, and whose citizens would doubtless be happy to receive those of the old world in exchange for them. I was anxious to see them advance and take an independent place in the republic of letters as they had assumed a distinct nationality—sending forth to all quarters of the earth proofs of their talents, and making universally known the peculiarity of their political institutions as well as their social advancement and their intellectual worth. To accomplish this self-imposed task, I left my native home, and in September, 1839, landed at New York. My first sentiments were those of despair, for I found no public institutions like our own, open free to the public, nothing founded by the people for the people, and therefore no means of laying the treasures which I proposed to bring into the United States before the people. But when I conversed with the citizens—when I found myself hailed with acclamation—when thousands thronged to hear me narrate what I had to communicate—and the good and the great, the gifted and the wise, without reference to religious or political

distinctions, came to the aid of my scheme, I found my heart lifted up with joy and hope, for I saw that what seed I might sow, in my humble manner, would not fall upon barren ground, and I awaited the harvest.

My mission was no sooner known than I had crowds of listeners. Both houses of congress, in the midst of a most agitated session, passed a law approving my scheme; while all the members, without a single exception, appended their signatures to a document previously signed by the president and his cabinet, enlisting themselves in my cause, and pledging themselves to do all in their power to contribute to its success. Here you will see the names of men from the snow-clad hills of the north—the sunny glades of the south—the rock-bound coast of the Atlantic, and the solitudes of the far west—laying aside sectional feelings and party ties to meet upon *neutral ground.* John Quincy Adams and Martin Van Buren, Clay and Benton, Webster, Paulding, Preston, Forsyth, Crittenden, Bell, Spencer, and other distinguished men, stopped in the midst of their angry discussions and ephemeral conflicts, to attend to an object of a higher and more permanent nature, for it involved the moral and intellectual improvement of their nation—yes, my friends, the real and physical good of man, the propagation of sciences, the arts, industry, religion, union, peace, prosperity—nay, that liberty which is so dear to Americans.

Nor was the approval of the magnates of the land all that I had to cheer me on. I was invited to lay my plan before several state governments, and those of Maine, New York and Louisiana approved it by legislative enactments. Judge Story and President Quincy, left the shades of Harvard to advocate its claims. Dr. Wain-

wright forsook his study to show his fellow-citizens its merits. Latrobe pleaded in its favor at Baltimore. Dr. Chapman prescribed it to the inhabitants of Philadelphia. Governor Kent recommended it in Maine. In a word, the most distinguished citizens, wherever I went, lent me a helping hand. All the most illustrious and celebrated authors and artists presented me, with profuse hand, copies of their works and labors, forming a collection amounting to upwards of 1,800 volumes of books, 500 engravings, 250 original drawings, many specimens of natural history and mineralogy, (among them a piece of native iron, weighing 2,500 lbs.) and several interesting relics of the aboriginies. I left in June, 1841, for France. Need I add, after what I have narrated, that I carried with me a grateful sense of the intelligence and virtue of the American nation.

I return. I had much to perform. I had to show the people of France what steps America had taken, and to give them the books, maps, documents, objects of natural history, &c., entrusted to my care—giving to each library those works most valuable to its peculiar department. I distributed them among the nine ministerial bureaux, the legislative chambers, the city of Paris, the academy of sciences, the academy of moral and political sciences, the museum of natural history, the royal school of mine, and other public institutions. They were, in every instance, thankfully received, and letters were not only addressed to me by the proper authorities, expressing their desire to see a system of exchange established upon a wide and permanent basis, but many thousands of books, (mostly rare and valuable works) have already crossed the Atlantic.

In the pamphlet I referred to, you will find that in the course of sixteen months, America transmitted to France 1,267 objects, and received in return 3,894 others, making a total amount of 4,726 books, &c., exchanged between the two nations from 1845 to 1846,—the honorable secretary of war of the United States, the states of Maine, Massachusetts, New York and Indiana, with the cities of Baltimore and New York, being, then, the only respondents to my call, by transmitting important works and voting generous appropriations to pay the necessary expenses. Since that time, these exchanges have considerably increased, not only scientifically speaking, but, above all, in the warmest brotherly feelings between these two nations; as you may be able to judge from the following statement:

The 10 or 12,000 books, 3,000 maps, 200 medals, 200 engravings, the statutes, &c., I brought out with me from France, were given to me in exchange for similar objects which I had presented in behalf of America. I received, from his Majesty the King of the French, two copies of the famous work on Egypt, published by order of Napoleon, and granted at the request of the ministers of the interior and public instruction;—from his excellency the minister of justice, about 400 quarto volumes, relative to the civil, commercial, and criminal administration of justice in France, with the hope that something similar might be published in the United States; and also the collection of the Journal des Savants, the oriental collection, &c.;—from his excellency the minister of public works, three collections of the annals of mines, 75 volumes in each collection; a collection of the Annales des Ponts et Chaussees, (Annals of Civil Engineers,) more

than 400 quarto volumes, relative to public works, mines, and engineerings; and a number of beautiful medals, illustrative of public buildings, railroads, &c., constructed in France since 1830;—from the minister of finance, all the works relative to the financial administration of France, about 300 quarto volumes; I also received, a few days before my departure, an official letter from the same minister, dated April 30th, informing me that a complete series of all the historical medals of France, the dies of which belong to the government, about 1,400 in all, relative to historical events from the year 1490 to the present time, would very soon be transmitted to the French minister at Washington, to be presented to congress in the name of the French government, in exchange for documents and works which I had presented to the legislative and scientific establishments of France, in behalf of several states of the American Union;—from the minister of the navy, in addition to all the documents and works relative to the naval department and the colonies, exploring expedition, &c., more than 3,300 hydrographical charts;—from the minister of war, several collections of all the works and documents published by his departments, relative to military administration, to the French possessions in Africa, &c., with about 200 maps;—from the minister of agriculture and commerce, about 2,200 volumes, forming several collections of works on agriculture, commerce, industry, manufactures, &c. In transmitting the above collections, his excellency invites me to communicate to his department every possible information relative to the industry, commerce, manufactures, navigation, agriculture,—in a word, the most complete statistical account of your beautiful

country I shall be able to procure,—the intention of the minister being to have the same printed in the official Bulletin of Commerce and Agriculture, published by his department. The letter from the secretary of commerce, containing the above request, terminated thus: "It is important, sir, that, from day to day, these facts should be better known and appreciated on both sides, and that our intercourse with the United States should become more easy, more frequent, and more intimate. This end must be attained, not only for the interest of our respective countries, but likewise for the security of the peace and welfare of nations in general. The efforts you have already made to obtain such results are the best guaranty of the success your present labors are sure to meet with on the other side of the Atlantic." His Excellency adds: "In relation to the drawings, models, and specimens of American industry, you express the wish, that, once in Paris, they shall be exhibited in a becoming place, and receive thus all desirable public notice. If you succeed, sir, as I sincerely hope you will, in procuring a complete collection of the principal results of American industry, I shall very willingly have a public exhibition made of the same, and you may avail yourself of this engagement, which I make here, with the donors." The results of such a publication, and such an exhibition, in the metropolis of the civilized world, will need no commendation; but, to procure the materials for the accomplishment of such a purpose, I must make an appeal to your friendship and patriotism to help me, by gathering them for me. Time, and my ignorance in such matters, do not allow me to do it myself.

From the minister of the interior, besides a great

number of documents relating to the interior administration of the kingdom of France,—such as reports on hospitals, prisons, insane hospitals, houses of refuge, charitable establishments, municipal administration, police, &c.,—I have received important works relative to the fine arts, antiquities, medals, &c.; among others, the scientific exploring expedition in Persia, and the publication concerning the ruins of the famous city of Nineveh, lately discovered. A copy of one of these last-mentioned works is destined for Maine. In transmitting these, his Excellency expressed himself thus, in an official letter, addressed to me in January last: "I trust these may be considered by the Americans as additional tokens of the feelings of France towards them, and by you, sir, as new elements of success in the honorable enterprise, the realization of which you are prosecuting with so much courage and perseverance."

From the minister of public instruction, besides a great number of books and documents relating to public education and scientific works, I received the ancient books I spoke of in the beginning of this *expose;* from among which I selected for this state one of the most interesting—the complete works of Cujas, in four folio volumes, printed in the 16th century. In a letter from Count Salvandy, minister of public instruction, dated April 29th last, and addressed to me, his Excellency expressed himself thus: "I have no doubt, sir, that, during the new visit you are on the point of undertaking to those distant countries, your efforts will produce most important scientific results. It is with this conviction that I am happy to intrust to your care precious collections of French works, to be presented by France to

several scientific institutions of the United States, with those fraternal feelings she has always manifested for the interest and welfare of the American people." Allow me to say, gentlemen, that this noble, warm-hearted minister has been, and is still, in Paris, the most powerful friend of my system; that to him is due the greater part of the complete success of my efforts, having been the first to advocate the principles of this scheme before the legislative chambers of France, by asking an appropriation, which was granted, to carry it into execution. And, as a further proof of his good feelings towards you, I will take the liberty of reading the following extract from a letter I received in November last, acknowledging the receipt of reports and documents on the subject of education, &c., which I had presented to him in the name of your state: "These documents," says his excellency, "of which I appreciate the importance, have excited my attention to the highest degree, and will certainly be the subjects of a special report to the council of public instruction. I beg of you, sir, to express, in my name, to the government and legislature of Maine, my grateful acknowledgment. Assure them that my most ardent desire is to continue an intercourse so happily begun under your auspices, and that I shall always be most anxious to continue it on every opportunity."

From the city council of Paris, I received, for your state, 37 volumes of important documents relative to the municipal administration of that great metropolis, and a collection of the patented inventions, 28 volumes quarto, containing thousands of engravings illustrating the most important discoveries relative to manufacture and agriculture, made in France for the last sixty years. In a letter

written to me by Count Rambuteau, first civil magistrate, dated November 19th last, at Paris, acknowledging the receipt of books which I had presented in the name of several states, I found the following:—"These works, sir, in consideration of their intrinsic worth and importance, as well as the lively recollection of fraternal feelings attached to them, require from us a distinct and striking proof of our esteem. In consequence, we have, according to your wishes, decided that they should occupy *a special and separate room* in the library of the city of Paris. This library will contain twenty-eight alcoves, bearing the name and arms of each state." Thanks to this decision, one of my greatest desires is obtained; for we shall have, hereafter, a special and permanent exhibition of American genius in the most splendid mansion of the metropolis of the old world! Do not you call this a glorious conquest for America? and will not this realize the patriotic hopes so eloquently expressed in a letter from the Hon. Henry A. Wise, of Virginia, written to me in 1840? Said the honorable gentleman:—"I delight in a plan which promises the opportunity to this young republican nation, of displaying her charms, gifts, and grace to Europe, where her riches, beauties and power are not known, and where she cannot, without throwing away her modesty, claim her own,—too often attributed to her English mother, because of nearly the same language, laws and religion."

It is for you now, citizens of America, to help me to have this exhibition worthy your great and powerful country. Hence I make an appeal to all the state legislatures, cities, corporations, scientific societies, authors, artists, publishers, and amateurs; let them present a copy

of every one of their publications or works to their library in Paris. This sacrifice for the erection of so splendid a monument in the old world to the glory of the new, will become, I believe, both honorable and profitable; and this, before long.

To those in Europe who, not acquainted with your immense natural and intellectual riches, with the generosity of your character and your ardent patriotism, I pledged myself, not only to bring back the 52 large cases of books, &c., I brought out, filled up again, but a good number besides. I am certain America will joyfully redeem this pledge of mine.

All the scientific establishments, public and private, without any exception, have most cheerfully contributed, by numerous and important offerings, to the establishment of this enlightened intercourse I am endeavoring to form between the two hemispheres. Mechanics of all descriptions have made most laudable sacrifices to give proofs of their feelings toward my labors; and a common bookbinder, among others, anxious to bring his mite to the edifice of our intellectual union, brought to me, a few days before I left Paris for America, a superbly illustrated work, requesting me to accept it, to be preserved as a token of fraternal love for his brothers—the mechanics of America. (This work must have cost him at least $20—a considerable sum for a poor man.)

The cities of Lyons, Rouen and Nantes, are preparing collections to be forwarded to me here, in return for what I presented to them and as tokens of their ardent desire to see a scientific bond established between them and the several cities of the new world upon a *strong and lasting basis.*

I will terminate by mentioning the legislative chambers—the true and mighty organ of the French nation—who have always encouraged my labors by their warmest approbation and by their generous contribution to help the realization of my system—having already received from them more than 2000 volumes; among which are to be found copies of some of the most beautiful and important scientific works ever published in France. The following extract from a letter addressed to me by the questors of the chamber of deputies, in the name of this legislative body, will, I trust, be listened to with pleasure:

"We have the honor of informing you that we keep at your disposal, ten collections of our parliamentary documents, destined for the following states of the American union, viz.: three collections to continue the exchanges with the states of Maine, Massachusetts and New York. These collections are composed of the documents distributed in the course of our sessions during the years 1845 and 1846, and will complete the collections from 1830 to 1844 already transmitted. * * * Out of these 588 volumes, 459 are bound with the following dedication on the back of each volume:—"*La chambre des deputès de France à l'Etat de* ———." The 129 other volumes are not bound, because they are the continuation of collections already transmitted to the State of Maine, &c., the volumes of which were not bound, and which having most probably been bound since in the United States, the binding in France for this last transmission would perhaps make too great a contrast with the American binding of the former. Independently of the above 588 volumes of parliamentary documents, we put at your disposal, sir, several important works you were kind enough to indicate as likely to be received with satisfaction by those states of the American union who have themselves addressed to our chamber precious works concerning natural history, geology, statistics, political economy, &c. Your intercourse with these states, sir, enables you to determine the most appropriate disposition to be made among them of these works; it is, therefore, with the greatest confidence we adopt the one you propose, viz:—'La Flore des Antelles,' 4 fol. vol., with colored

plates, to the State of Maine. * * * * * * * * With the 80 above volumes the number of those to be distributed to the several states amounts to 668 volumes.

It is to you, sir—to those efforts inspired by your patriotism and enlightened philanthropy, that we are indebted for the establishment of this new intercourse *between us and the American union.* These reciprocal interchanges of the production of human genius, which you have succeeded to establish, must, in accelerating the progress of civilization, powerfully contribute to increase the ancient fraternal feelings already existing between the United States and France. We could not, therefore, but joyfully welcome a system so fruitful in glorious results, and we are happy to contribute to its realization by the above mentioned collection we have the honor of addressing to you *in the name of the chamber.*"

Desirous before my leaving Paris, in case it would be among the designs of Divine Providence I should see my beloved country no more, to deposit my American documents in a place becoming their worth and importance, I could not, I think, have chosen a better one than the bosom of the French nation represented by the chamber of deputies. The following is the answer I received from the honorable questors in relation to my proposal:

SIR:—We have received your letter, dated February 3d last, in which you propose to us to accept the deposit of the American official documents relative to the foundation of the exchanges you have so successfully established between several states of the American union and France.

These documents evince the enthusiasm with which numerous populations in another quarter of the globe have welcomed the noble and generous idea which brought you among them and which induced them to give additional proofs of their friendly feelings toward France, by the initiative they took in the creation of this new intercourse. Such documents, sir, ought indeed to be considered as a precious portion of the inheritance you will leave to your children.

We accept, *in the name of the chamber*, the deposit your are desirous to entrust to us, and which will be put at your disposal, when, after

having given to your enterprise all the extension and consistency of which it is susceptible, you will return to your native home to enjoy, for a long series of years, the esteem and gratitude of your fellow-citizens.

We beg of you, sir, to accept the assurance of our feelings of esteem and high consideration.

THE QUESTORS OF THE CHAMBER OF DEPUTIES OF FRANCE.

Signed, CHARLES CLEMENT, *de l'Espèe.*

You see, gentlemen, all are prepared on the other side of the water. You see that my SELF-IMPOSED glorious mission is to bring to you a treaty of peace and intellectual union, the preliminaries of which were prepared among you six years ago—a truly *holy alliance*, signed and sealed by your transatlantic brothers—a treaty which I know will be joyfully ratified by all the members of the great American family without a single exception.

But I am admonished by the lateness of the hour to abridge these materials. Let me therefore conclude by reminding you, that notwithstanding your favorable dispositions and your determination to realize the system of exchange, its existence will terminate with my life, which may be extinct in a few minutes, unless you are willing, *while we are together*, to lay its foundations upon a strong and permanent basis independent of political events. To do so, I would take the liberty of suggesting the propriety of placing your State Library under the guardianship of a board of trusees, composed of scientific men residing in the state, such as the presidents of Brunswick and Waterville universities or others. *In the State of New York the regents of the university are trustees of the State Library.* This board would propose to the legislature a gentleman fond of sciences and the arts, (acquainted with the French language, if possible,) and

willing to devote a part of his time and ambition to the increase of the scientific treasures entrusted to his enlightened patriotism, acting under the supervisions of the trustees or the secretary of state. Such an one, having for his chief object the welfare of his library, might be appointed State Librarian, so long as he would conscientiously fulfill his duty—a duty which would be attended with labors and and studies: for a librarian is generally considered as a kind of living encyclopedia, ready to answer at once any question put to him by members of the legislature, or others.

Your library once established upon such a plan, would, I think, grow up of itself and increase every year in usefulness and attraction, for you would surely be happy to see every member of the great American family come and quench their thirst at your fountain of knowledge; then the people would never be weary of visiting it; it would become their national pride, and every one would be happy to support and enrich its collections. It would be then, and only then, that the system of international exchanges would be really and permanently established and the good intentions of the legislature realized; for our intercourse would be carried on regularly without fearing any interruption in the execution of bills passed in its favor, and then you would enjoy all the advantages it promises.

I have now set forth my views, tediously, I am afraid; but how could it be otherwise, considering the mass of undigested materials before me? and yet I trust you will forgive me for the sake of your country.

My proposals, gentlemen, cannot be new to you. Many highly gifted, generous and greatly distinguished

Americans have felt, and, as you see, acknowledged, the indispensable importance of establishing such a system here in the heart of this great central republic. But there were no personal, no political feelings to be gratified; and therefore they may have been afraid to take the first step; and others have stood aloof, lest they might be suspected, or at least *charged*, with entertaining such purposes. They all want a *neutral ground*. They ask that the proposition should come from the other side of the water—from another world, as it were.

Well, beloved Americans, I offer myself as that *neutral ground*. I come from that other world beyond the sea—from a country full of fraternal and disinterested feelings towards yours, and I entreat you to believe me—oh, believe, for your own sake, and for the sake of your children, I came a truly disinterested missionary to the great work. Who, that hears me, will not be ready to contribute something, the widow's mite, if nothing more, or his pebble. Who of you, gentlemen, would not be sorry to hear your children ask hereafter, "why you also did not bear a hand in the great work of national education, when you might have done so by casting a stone upon the pile that in after years become a monument." But, no, no; I am certain that every one will be anxious to enable me, on my return to Europe, to point out what this glorious nation can do—showing the state I found their libraries on my arrival and the state I left them on my departure; giving thus to the old world, a specimen of the wonders which American youth, vigor and patriotism can accomplish in a few months.

Come then, brothers, come—let us go ahead!

ALEXANDRE VATTEMARE.

AUGUSTA, MAINE, July 23, 1847.

NOTE.—It having been feared by some, that the system of International Literary Exchanges might lead to the introduction of improper books, M. Vattemare read the following letter from the Archbishop of Paris :—

*From the late, Lord Archbishop (Catholic) of Paris, (de Guelin) to Mons. A. Vattemare.*

"I highly approve, sir, with all true friends of science, letters and arts, the system of exchanges which you propose to establish between all the collections of books and manuscripts which exist in the civilized world. The success of your petition to the legislative chambers of France, is designed to encourage this vast enterprise, which, though attended with difficulties, has so far succeeded in the first attempt as to render celebrated the memory of him who first conceived it. This enterprise, which tends to create new relations of sociability between nations, must be the work of time. It will, therefore, be desirable to have it entrusted to some learned society whose existence is secure, and hence be better able to pursue it and obtain more complete results than private individuals.

The direction of such an enterprise should also, and above all, be entrusted to the wise and virtuous. The inordinate love of the science of good and evil, ruined the world at its commencement. The exchanges of *poisons* would not be good for any country, unless there be in it a *literary homœopathea*, which understands the secret of neutralizing the innumerable diseases caused by bad books and the productions of disordered imaginations.

As to religion, she can have no scruples or fears from this system of exchanges. Religion is wisdom itself, *whose perfume is that of the most precious balm; its odor is like that of the most excellent myrrh; its branches are the fruits of glory and comeliness.* Is there, then, any danger to religion in seeking that which its spirit has produced in all ages and among all nations? *Those who, like you, illustrate it, and make it known to others, I hope may be recompensed for their toil in this world with a rich reward, and in the world to come with eternal life.*

Please to receive, sir, the assurance of the high esteem and consideration with which I have the honor to be,

Your most devoted servant,

† HYASINTHE, *Archbishop of Paris.*

PARIS, June 16, 1836."

# LIST OF BOOKS.

## (C.)

*To his Excellency*, JOHN W. DANA,

*Governor of Maine, U. S. A.:*

I have the honor to present to the legislature of Maine, through you, the following works, by direction of the government of France:—

*From the Chamber of Deputies.*

Documents of the Chamber of Deputies from 1845 to 1846, inclusive, completing the collection from 1835. 26 volumes.

The Flora of the Antilles. 4 vols. folio, with colored plates.

*From the Minister of Justice.*

General Account of the Administration of Civil and Commercial Justice in France for 1844. 1 vol.

General Account of the Administration of Criminal Justice in France for 1844. 1 vol. Being continuations of previous works already transmitted.

*From the Minister of War.*

Table of the Situation of the French Establishments in Algiers, 1844-1845, being the continuation of former volumes.

The Code of the Officer of Military Laws. 1840. 1 vol.

*From the Minister of the Navy.*

Table of the Population, Agriculture, Commerce, and Navigation of the French Colonies for 1842; being a continuation of former works already transmitted.

An Account rendered to the King, of the Religious and Elementary Instruction of the Blacks, and the Execution of the Laws of 18th and 19th July, 1845, relative to the Discipline of the Slaves. 1846.

The French Pilot; being a Complete Collection of all the Charts of the French Coast, in 6 large folio volumes; being a continuation of the Charts of the World already presented by said Minister.

*From the Minister of the Interior.*

Historical Notice of La Tour D'Auvergne, the first Grenadier of France. By F. Calohar, de Carhaix.

Historical Archives of Albigeois, and of the Country of Castrais. By P. Roger. With plates.

Treatise on Apparent Death, with the Principal Maladies which induce Premature Burials, with the Signs of Death. By J. B. Vigne, M. D. 1841.

Notes of a Voyage in Auvergne, and in the Simousin. By Prosper Merimee. With plates. 1838.

Historical Report of the Natural Sciences, from 1789 to the present time. By M. Cuvier. 1808.

Historical Report of the Progress of Mathematical Sciences, from 1789 to the present time. By M. Delambre. 1810.

Historical Report of the Progress of History, and of Ancient Literature, from 1789 to the present time. By M. Dacier. 1810.

Commission of Literary Property; a collection of documents published in 1836.

Voyage in Persia, by MM. Eugene Flandin, Peintre, and Pascal Caste, architect, undertaken by order of Government; composed of collections of Ancient Architecture, Bas-reliefs, Cuneiform and Pehlvis Inscriptions, Topographical Plans, and Picturesque Views. 30 numbers. 1847. To be continued. Large folio.

History of France. By Theophile Lavallee. 2 vols. With plates.

*From the Minister of Public Instruction.*

Report to the King in relation to Secondary Instruction. Quarto volume, richly bound and gilt. 1843.

Biblia Sacra, vulgatæ editionis. Quarto. Lugduni, (Lyons,) 1688.

Cujacii Suris-Consultorum. Lugduni. 4 vols. 1606.

*From the Minister of Commerce.*

French Agriculture. By the Inspectors of Agriculture. Department of Tarn.

The same. By the same. Department of L'Isere. 1843. To be continued.

The Farm House of the Nineteenth Century. 5 vols. With plates. To be continued.

Lectures on Agriculture. By Le Comte de Gasparin. 3 vols. 1844-5-7.

La Normandie. An Agricultural and Horticultural Journal. Monthly. From June, 1843, to February, 1847. To be continued.

Commentaries on the French Rural Laws, together with an Essay upon Local Usages. By E. J. A. Neveu-Derotrie. 1845.

Manual of Agriculture. By Jules Martinelli. 1846.

Elementary Treatise on Agriculture. By E. Lecouteux. 1840.

Manual of Agriculture, for the Use of Farmers and Primary Schools of the North of France. By V. Rendu. 1838.

Manual of Agriculture, or Elementary Treatise, specially intended for the Village Schools and the Farmers of the North-East of France. By M. L. Moll. 1841.

Popular Manual of Agriculture. By I. A. Schlipf. 1844.

Elements of Agriculture. By L. Bentz and A. J. Chrétien. 1845.

Agriculture of the Province of Poitou. By M. Sauzeau (Alex.) 1844.

Practice of sowing Grain by Hand. By M. Pichat. 1845.

Irrigations in Accordance with the Law of September, 1807. 1844.

Rational Agriculture, or Complete and Special Manual of the Farmer. By Abbe Picard. 1844.

Elements of Theoretical and Practical Rural Accounting. By A. Malo. 1841.

The Influence of Different Modes of Location upon the Produce of the Lands of France. By L. L. N. Charles Ladoucette. 1844.

The Advantages of Territorial Unity. By Louis Gossin. 1841.

Letters to a Young Laborer. 1840.

Preservatif D'Agromanie Empirique, or Agricultural Letters. By Travanent. 1845.

A Treatise on the Cultivation of Grapes. By Le Comte Odart. 1845.

The Cultivation of the Olive, or a Description of the Means of destroying the Insects which infest that Tree. By J. P. Bompard. 1842.

Extract of the Annals of the Sericicole Society, founded in 1837.

Germany, its Agriculture, Industry, and Politics. By Emile Jacquemin. 1842.

Colonization and Agriculture of Algiers. By L. Moll. 1845. 2 vols.

The Manufacture of Cheese. By Le Dr. F. Gera, de Conegliano. 1845.

Elementary Manual of the Cultivation of Alsacen. 1842.

Notice of the Castration of Cows. By P. A. Morin. 1845.

Instruction concerning the Pleuro-Pneumonie. By O. Delafond. 1840.

Treatise on Consumption in Animals. By O. Delafond. 1844.

French Stud Book. 3 vols.

Annals of Horse Breeding and of Agriculture. 2 vols.

The Horse in France. By Charle de Brigne. 1843.

A Complete Treatise on Breeding Horses in Bretagne. By Ephrem Houel. 1842.

Treatise upon Race Horses. By Le Comte Achille de Montendre. 1845.

Upon the State of the Horse Population in France. By Comte de Girardin. 1844.

Twenty Pages to read on the Question of the Horse, simplified by Comte A. de Girardin and the Marquis de Torcey. 1843.

The Royal Veterinary School of Alport. Discourse delivered at the Distribution of Prizes. 1845. By M. H. Bauley.

The Horse, considered in a National, Agricultural, Economical, and Military Point of View. 1843.

The Institutions of Land Credit in Germany and Belgium. By M. Royer. 1845.

Economical Notes upon the Administration of Riches, and the Agricultural Statistics of France. By C. E. Royer. 1843. With an atlas.

*From the Minister of Finance.*

Collection of Financial and other Laws of the Session of 1846.

General Account of the Administration of France for the Year 1845.

Draught of Laws for fixing the Receipts and Expenses for the Year 1847.

Regulation for the Execution of all the Concerns, the Expenses of the Department of Finance.

*From the Director-General of the Custom-Houses of France.*

General Table of the Commerce of France with its Colonies and Foreign Nations, for the Year 1845. Being a continuation of former works.

*From the City of Paris.*

Aggrandizement and Construction of Market Halls; a Report made to the Municipal Council, in 1845, of the Market Halls of Europe.

Construction and Preservation of the Streets and Sidewalks of Paris.

Historical Research of the City of Paris.

Administrative and Historical Dictionary of the Streets and Monuments of Paris. By Felix Lazare and Louis Lazare. 1844.

Notice of the Monument, erected by Subscription in the City of Paris, to the Glory of Moliere. 1844.

Statistics of the Waters of Paris. By H. C. Emmery. 1840.

Account of the Money Lenders for the Poor of the city of Paris.

Deliberations and Proceedings of the General Council of the Department of Seine. 1846.

The Report of the Jury upon the Exhibition of Manufactures at the Public Fair for the Department of Seine, in 1819.

Description of the Invention, Perfection, and Importation of Patented Machines. 28 vols. With plates. By M. Christian. 1828.

[All the above volumes, presented by the City of Paris, are bound, and lettered on the back "From the City of Paris to the State of Maine."]

*From the Board of Professors, Trustees of the Museum of Natural History.*

History and Description of the Royal Museum of Natural History at Paris. By Deleuze. 2 vols. 8vo. With plates.

Travels in Iceland, made by order of his Majesty the King of Denmark. Translated from the Danish language by G. Gauthier de Peyronie. 5 vols. 8vo. With plates. 1802.

Travels in Peru during the Years 1791 to 1794. By the Rev. Fathers Manuel Sobreviela and Narcisso y Barola. 2 vols. 8vo.

*From the Royal Central Agricultural Society.*

Collection of the Memoirs of the Society from 1814 to 1847, inclusive. 40 vols. 8vo.

*From Private Authors.*

The Cultivation of Hops in France. By P. R. de Schauenburg. 1836. 1 vol. 12mo.

Culture of Farinaceous Grains and Plants in Pods. By P. R. Schauenburg. 1840. 2 vols. 8vo.

Travels in India by Victor Jacquemont, during the Years 1828 to 1832, inclusive. (Mammiferous Animals and Birds.) 1 vol. 4to. Presented by Mons. I. G. St. Hilaire.

Lithographic Portrait of Christopher Columbus. Presented by M. Jornard, of the Institute of France.

On the Organization and Construction of Public Libraries. By Comte de Laborde. With plates. 1845. 1 vol. 8vo. Presented by the author.

The Harmony of Human Intelligence. By Ed. Alletre. 1846. 2 vols. 8vo. Presented by the author.

Precedents of the Court of Peers. By E. Cauchy. 1 vol. 8vo. 1839. Presented by the author.

# INSTRUCTIONS

ON THE BEST MODE OF

## COLLECTING, PRESERVING AND TRANSPORTING

OBJECTS OF

# NATURAL HISTORY.

Written by the Professors, Administrators of the Museum of Natural History at Paris.

REVISED, WITH THE ADDITION OF NOTES,

By AARON YOUNG, Jr., State Botanist.

# INSTRUCTIONS.

It is the actual state of our collections and of our knowledge of natural history of which we are about to speak. But as this memoir, though specially destined for our museum and for our countrymen, may be consulted by foreign naturalists for the sake of our collections as well as for their own, we would invite the attention of collectors to any point that may seem defective or capable of improvement, and we invite all travelers to make known to us the results of their experience, that we, and the whole learned world, may profit by them.

It is not simply a series of instructions which we make here, it is an appeal to all who interest themselves in the cause of science and of their country. We will point out to them the means of enriching this great national establishment, which, open to public curiosity and study, can only be rendered perfect by the aid of many hands. It cannot itself support travelers except upon a few limited points, and even there, such is the inexhaustible fecundity of nature, much remains to be done.

As for amateurs, who can give but few moments to the study of natural history, who have not hitherto occupied themselves with it, but who have, notwithstanding the desire to render their sojourn in certain points little explored, profitable to our object, we have thought that

instead of collecting a great number of objects, they would do well to limit themselves to such as are signalized as curious and indicated in the list of our *desirata*. They could thus economise time, and employ it more usefully, not only in collecting the objects which we recommend but also in bestowing upon them that care which would insure their preservation.

These instructions are divided naturally into three chapters, corresponding to the three kingdoms of nature; each part has been prepared by such of the professors as it especially concerns.

The instructions will make known:

1° The manner of collecting and preparing objects of natural history.

2° The choice and form of the notes which should accompany them.

3° An indication of those which are more particularly wished for.

It remains for us before proceeding to the special details of this memoir, to give general instructions upon the packing of objects of natural history and upon the modes proper to be employed to prevent any damage to them during their voyage.

As soon as the objects prepared as before directed, have been placed in case, these cases must be closed in the best possible manner and covered with pitch or tar on their whole surface, so that neither air nor moisture can penetrate.

After this, they must be enveloped in oil cloth, and then put on board ship in such place as will be likely not to be disturbed till their arrival, and as far from the heat and vermin as possible.

Glass bottles should be packed in wooden boxes well filled with tow and sea weed,* and arranged so that they will run no risk of breaking; objects which may be spoiled by liquids in the glass bottles, should they happen to break, should not be placed with them.

When a package has been sent, information should be given directly, with the statement of the number and weight of the boxes, of the ship by which they are sent, the time of sailing, and the port to which they are bound. These statements should be made in time so that boxes may be sealed at the custom house and not be opened until they arrive at Paris.

It is evident that if living animals or vegetables are sent, the time necessary for the voyage should be calculated and the speediest and safest conveyance chosen.

## CHAPTER I.

### MINERALOGY AND GEOLOGY.

Minerals are found either in regular and geometrical forms when they are called crystals, or in more or less irregular masses.

Among crystals there are some so situated that they can be separated without injury from the matter that envelops them. Others compose salient groups; others are imbedded in rock.

Specimens of each of these three states should, if possible, be procured. With regard to crystals enveloped in surrounding matter, particles of this matter should be detached with them (varying from 2 to 3 inches) so that

* A very suitable article and one easily procured in almost every village in Maine, is sawdust. This must be dry before used in packing.

the different minerals which accompany them may be observed.

Also portions of the masses composed of needles and fibres, or granulous or compact; having care to choose them fresh and free from those alterations that take place in these at the surface. The metallic mines should call the attention of travelers. They will observe if they are in parallel beds with the surrounding rocks or in clefts called veins which cross the bed. In detaching pieces from these mines care should be taken to leave around the principal metal portions of other metals which may be associated with them, or stony substances which often accompany crystals.

It is to be desired for the progress of historic and technical mineralogy, that pieces of stone should be selected which are most commonly used in the construction of public monuments and houses; and the most authentic samples should be procured of all the mineral substances employed in the useful and ornamental arts; such as sharpening stones, stones for ovens, stones to polish with, and stones for potteries; having care to indicate the kinds of earth and stones which enter into the composition of each kind of pottery; whether minerals are indigenous or exotic, it must be particularly mentioned from whence they come.

If organic remains should be found in these earths, such as the bones of animals, shells, impressions of fish or vegetables, samples should be taken with care from these different bodies, leaving around them a portion of the earth or stone in which they are imbedded.

In case these earths should offer traces of volcanic origin, pieces will be taken of each substance ejected by

the explosions, some of a stony nature, some as basalts, some as glass, some as obsidians, some as scaries, etc. For those which are prisms, care must be taken to remark the form of these prisms and the extent they occupy in the earth.

To each sample should be attached a ticket indicating the name of the country where they were found, the particular spot from which they were taken, the distance and situation of some neighboring known town from it, the nature and appearance of the country, and its elevation above the sea.*

Wherever mineral waters shall be found, care will be taken to fill a bottle, to cork and cement it closely.

Since those systems have been abandoned which restrained the observation of facts and comparison of those observations; since guessing of the origin of things has been renounced for studying their actual state; geology has advanced like other correct sciences. This advance has not only extended our acquaintance on the formation of the globe, but has also produced useful results for the arts. Notwithstanding, we are far from knowing the various countries of the earth as we know Europe.

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* To ascertain the elevation of any particular region of country above the level of the sea, in the absence of a barometer or for a want of trigonometrical instruments, the following use of the thermometer may be relied upon. In consequence of the diminished pressure of the atmosphere, water boils at a lower temperature on the mountain tops than in the valleys. Now we know that water boils at 212° fahr. at or near the level of the sea, and, consequently, making every allowance for any slight affections of the instruments in use, and observing with care that the water be perfectly pure, free from any foreign particles and not more than an inch in depth—the boiling brisk, and conducted in a deep metallic vessel:—all we then have to do becomes a simple sum in arithmetic, without the use of any table, as with a barometer, viz: multiply 549,5 feet by every degree of fahr. less the boiling point assumed as the *zero*.—Thus: if water boils on the summit of Mt. Washington at 200° fahr., we may safely conclude that it is 6,594 feet above the level of the sea.

It is easy for those who visit these distant countries, above all the tropics, to procure us important ideas, and to send us productions, the examination of which can alone enlighten and furnish us information on the nature of the soil in those countries and the general arrangement of the rocks which constitute the outside of the globe.

On all coasts and islands where vessels stop, travelers can land and procure objects with little trouble, which having little value in themselves, become instructive and interesting by the simple annotations which accompany them.

They can pick up on the borders of torrents, pebbles which indicate the nature of the rocks from which they proceed. They will choose the largest and note their size, and also break some pieces; also the small pebbles, having care to choose those of different appearances.

Wherever a rock is seen to rise, should it be in the water or land, it should be observed if it is all of the same substance or homogenous or composed, or formed of different beds. In the first case a fragment must be detached; in the second case, they will observe the relative position of the beds, their inclination and thickness; and take a sample of each of the beds, and put the same mark on all the pieces coming from the same mountain, and a number on each to indicate the order of their position or reciprocal situation. If the person who procures these samples could make a simple sketch, to show the form of the mountain, the thickness and inclination of its layers, he would render an essential service.

In case the rock is an isolated one, it is useful to examine and sketch on both sides to be more certain of the inclinations of the beds.

It would be well to gather some sand from the bottoms of rivers; above all, those which wash metallic dusts; but this sand must be taken as far from the mouth of the river as possible.

In some countries are found isolated masses to which the people attribute a singular origin; pieces must be taken; perhaps they are aerolites; others may be transported by the revolutions of the globe.

In gathering fragments of rocks, mines, volcanic products and organized fossil bodies, the most essential thing is to mark well their latitude, that is to say, the nature of the earth where they are found and their relative position to the substances which encircle them.

Basalt beds merit a particular attention, both as regards themselves and the kind of earth which surrounds or covers them. It must be noticed if they are divided in irregular masses, tables of prisms, and what is their arrangement. It must be remarked if they contain the remains of organized bodies, and care must be taken to take samples in their different states; also of the matter on which the basalt rests. It must be certain above all, that there is no intervention of scorified matter, or beds of an earthy appearance, to which the Germans give the name of wakke, and which are proved to be of volcanic origin. The rocks named trachytes by M. Hauy, merit the same attention. They are distinguished above all by primitive porphyries, intermediate or secondary, by the absence of quartz and the presence of pyroxene or titanimmed iron.

Whatever may be the nature or age of the soil one sees, it is most important to collect samples of rocks the most common and most abundant which constitute the

bulk of the soil: the study of the varieties of subordinate beds and accidental matters of all kind, should be secondary. In general, the appearance of the constitution of the locality must be considered if one would proceed usefully to choose the samples destined to represent them; the choice would be easy if one would establish a rule never to quit a declivity, a mountain, a country even, without having made the section (geologically). We should add that these sections should be the principal object in the labors of the geological traveler.

Too large samples must not be taken; samples of 3 to 2 inches, by 1 to 2 of thickness, are sufficient. Larger samples must not be taken unless they contain the remains of organic fossils, such as animal skeletons. To pack these samples, they must be covered with fine paper; above this paper they will put the ticket or note of bearing or latitude, then a second fine paper that will be surrounded with tow, and all will be enveloped in grey paper. These samples will then be put in a box, placing them upright and in successive beds, as close together as possible, and filling the interstices with cut paper or tow, in a way to form a mass that nothing can derange. No space must be left between the last bed and the cover. The box must be tarred to avoid humidity.

The merit of geological collections being principally in the knowledge of local circumstances in which each sample is taken, it is indispensable to join to these collections well-arranged catalogues. They will repeat the numbers of the samples and directions written on the labels; all details should be inserted which may give a complete idea of the strata which have been observed, and sketches and drawings taken on the spot should be

placed either in the margin or the body of the books. It would be well to have duplicates of the catalogues. One of them pressed between two pieces of board well tied, should be placed on the top of one of the boxes, the other should be addressed directly to M. Vattemare.*

## CHAPTER II.

### BOTANY.

The botanical riches of the museum are composed— 1° Of living vegetables cultivated in the garden; 2° Of the collection of dry plants or herbals, of the different parts of plants dried and in alcohol, such as woods, fruits, etc. And of all the products of the vegetable kingdom that are capable of preservation; 3° Of the collection of fossil plants.

### *Living Plants.*

To promote the progress of science, agriculture and horticulture, it is important to collect in a central garden, like that of Paris, the greatest number of living plants possible.

To attain this end, either living plants must be sent, or their seeds. Both of these ways are attended with difficulties, according to the nature of the plants, and the length of the voyage they have to endure.

We shall only treat of the parcels sent from countries out of Europe that must endure a voyage of from one to four or five months, because packages which are on

* Those who desire to aid M. Vattemare and the cause of science generally, will confer a great favor to the state by forwarding their collections to the "Secretary of State" at Augusta, or to the "State Botanist" at Bangor.

the road but 15 or 20 days, only require those ways of putting up employed in all the nurseries of Europe.

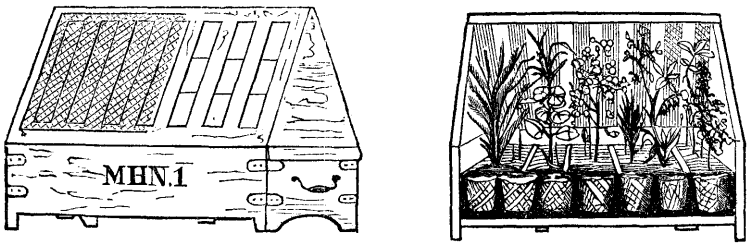
In the transportation of living plants, distinctions should be made of the ligneous plants, young trees, shrubs, and herbaceous plants, which are neither pulpy plants, tubercles or roots, from that of these last vegetables.

The transportation of the roots, underground bulbs and tubercles, such as those of the lily tribe, irides, dioscarea, land archides, aroides, gesneria, of many of the oxalis, trospoculum, etc., is easily effected by packing these parts carefully in dry moss, or very dry sand, with which the box should be filled up; the parasitic orchides or epyphites, with green bulbs, can be sent in wooden boxes, pierced with little holes, and kept dry; all the old leaves should be taken off, as, in their decay they cause dampness, and the roots wrapped in dry moss or cloth. The same means may be used for the pulpy plants, such as the cactus: any dry flexible substance, not subject to dampness, as hair, wool, etc., may be used to pack them. These pulpy plants, if large, should be separated from the others, so that they may not be tainted by their decay.

They should be packed with great care, because their tissue, more watery than that of the tubercles and roots, may be crushed under their weight, often considerable.

For the transportation of living plants, neither pulpy nor tuberculous, it is necessary to place them in glazed boxes, of a peculiar construction, first invented and used in England by M. N. Ward.

These boxes vary in form and size, but not to take up too much room on the decks of ships, where they should always remain, they should not exceed the following dimensions:—




3 to 4 feet long—20 inches wide—2 to 13 feet high.

The bottom should not touch the deck, but must be raised some inches by the feet on the four corners, so that sea-water may not damp the box.

The two small sides of the oblong chest cut in the upper part in pointed shape, have two glassed frames, and form a two-sided roof.

The sides and bottom should be made of oak or hard wood, from one-fourth to one-half of an inch thick, dry and joined with groves, so that there may be no fissure.

The glass frames are divided by cross pieces from one to one and a half inches wide, extending from the upper to the lower edge, from two to three inches apart. These grooved cross pieces receive the glasses which should be thick, covering one another like the tiles of a roof, and well cemented. One of the frames is fixed on one of the sides of the chest; the other is fixed on the other sides, and on the upper frame opposite, with screws well oiled to prevent rust. These boxes should be well puttied and painted.

Two strong iron handles should be fixed on each end of the box; and a solid grate made of iron wire, propped above the glasses by several iron rods, will prevent their fracture.

A bed of one or one and a half inches of clayey earth, moist enough to stick to the bottom, is first put in the

box, then a layer of earth mined if possible with vegetable decay of four to six inches; the plants are imbedded in this earth either in pots or wicker baskets.

To prevent accidents on a long voyage and especially from the port to Paris, straw and rushes may be used, with wooden cross pieces nailed to the partitions of the chest.

A box of the size described, contains from 15 to 25 or 30 plants according to their size.

Seeds, especially of the kinds that preserve with difficulty their germinating power, may be sown among these plants, such as those of the palms, laurels, oaks, several conifers, roses, etc.

Plants put in these boxes should have good roots, and not taken directly from the country. In case they are, time should be given them to take root, before closing the box.

Before closing the box, care should be taken to water the earth well, but not too much.

It should then be hermetically seated, and not opened during the voyage. It should be kept on the open deck, and if the glasses are broken, they should be immediately replaced; if there are holes in the wood, they should be puttied.

The box should never be put below except it contains tropic plants and the cold extreme. For light frosts, a cloth is sufficient, and they should have all the sun possible.

The best time for sending plants to France is between April and October.

Seeds should also be sent.

A great number of seeds keep for a year and more, if gathered ripe and kept dry. Seeds are ripe when they

fall off, or when the fruits, that inclose them, open. But seeds apparently dry, often contain a great quantity of water which would mould them, if put up in that state. They should be dried by the sun in the open air several days before packing, especially berries and the pulpy fruits. They should be pressed and dried in the sun or in brown paper, like plants prepared for herbals.

The best way of keeping them, in a long voyage, is to dry them perfectly, wrap them in thick paper, and put them in thick bags hung in a dry and airy place.

There are seeds, especially those that contain oily matter, that must be germinated on the voyage. Such are, among oxotus, the seeds of our climate, cocorus, chesnuts, beachnuts; and among exoctics, the seeds of the laurel, many of the palms, several conifers, arancarias, tea and coffee seeds, goyaviers, and other myrtinees.

The best way of sending these seeds is to sow them in the glass cases described above, either among other plants, or in special boxes of smaller size; but common boxes or barrels will do, if there are no glass boxes, well filled with earth. The seeds should be put in light earth a little damp, or in dust of decayed wood. About two inches of earth is put at the bottom of a box, and the seeds sown in this earth at distances, equal to the size of the seed. Then another layer of earth of one inch, then a bed of seeds, and so on up to twelve or sixteen inches in hight. Care should be taken to fill the box so that the seeds may not be injured.

Care should be taken to keep the box dry, and beyond the reach of salt water, which always kills plants and seeds.

All the plants should be labeled—the numbers should correspond with a catalogue which should declare for each plant: 1° The country from which it comes—2° The kind of soil where it grows, such as woods, rocks, meadows, marshes, etc.—3° The approximation to the height of the place, if it comes from a mountainous country, so as to distinguish the plants of the tropics and the temperate and frigid zones—4° The common name of the plant, either among the Europeans established in the country or the natives—5° Its uses, its characteristics, and the color of its flowers.

This information should be marked in the catalogue of seeds sent stratified or sown in the glass cases; for seeds preserved dry in bags, it is best to write these notes upon the bags.

We cannot particularize all the plants we desire, because our wants vary every year by new acquisitions and losses; but the administration will endeavor to give lists of them to the inhabitants of distant countries who are willing to supply our deficiencies.

We will specify some families and kinds whose absence in our collection of living plants we regret.

These are:

1° Those which grow alike in the tropical regions of the old and new continent:

The Rhizophorees (mangliers) and paletuviers) chailletiees, connaracies, burmaniacees, xyridee, Eriocolons, Podostemees, the loranthus parasites, lardizabalees, pistias.

Among the Ferm, Gleichcnias, Trochomanes, Hymenophyllum, schizea, Danaea, Angiopteris, Salvinia and Azolla.

2° In Asia:

Dipterocarpiees, aquilarinees (aloes or eagle-wood), Apostasiees, Guetrum (guemon of Molucca), the Nipa, a kind of Palm-tree.

*Dry vegetables or vegetables preserved in alcohol.*

These collections contain:

1° Herbals or plants dried in leaves of paper;

2° Fruits and preserved seeds, either dry or in alcohol;

3° Pulpy flowers also preserved in liquor;

4° Portions of roots, trunks, and samples of wood;

5° Different products of the vegetable kingdom, such as flax, starch, gums, resins, dyestuffs, substances employed in the medicines or the arts;

6° Samples relative to anatomy and vegetable physiology.

The care necessary to enrich these collections is generally less than that required for zoology.

Herbals and collections of fruits and flowers.—Samples in buds, flowers and fruits of plants intended for herbals should be collected when the plant is small, and generally when it is of a size to be kept in a leaf of paper by folding. It should be taken with the root; when it is larger, it should be cut in pieces of 40 or 50 centimetres (16 to 18 inches). Of the great herbaceous plants, whose leaves vary often at different heights on the trunk, the base of the stalk with the leaves that support it should be preserved,—and branches with flowers and leaves. A layer of several leaves of brown paper is placed alternately with a sample of a plant, or several, if they are small and can be spread on the paper without touching. Then a new layer of paper, then a new sample, and so on.

When the packet has a certain thickness (8 to 12 inches at most) it should be pressed between two pieces of pasteboard by means of cords or girths and a buckle. The pressure should be moderate, enough to prevent the plants from wrinkling, but not enough to change their shapes, or crush their tissues by flattening them too much. The parcels, to dry well, should be placed on a dry board; or, better, hung up, so that the boards be in a vertical position. It is well to change serveral times the layers of paper; first, soon after the drying has commenced.

The drying of plants may be much quickened by dividing them into packets of 8 or 10 plants only, with very little paper between, and pressing them between two frames furnished with a wire grate tied up by strings; a layer of four or five pieces of paper should be placed on each side, immediately under the grate, to render the pressure more uniform and keep the plants from crisping; if these small packets are exposed to the sun or a current of air, the plants dry rapidly, often before the paper is changed that contains them; but unless there is a great number of these frames, it is impossible to dry but a small number of plants, and this process would be especially useful for those persons to whom the formation of an herbal is but an accessary occupation.

Botanists who wish to dry many plants without using much paper should place packets of 15 or 20 plants, arranged as we have just pointed out, in a stove with a current of air, heated up to about 122 degrees fahr. by a lamp placed below, and separated from the plants by a cross partition of punctured plate.

In twelve or twenty-four hours the specimens are perfectly dry. This process, first successfully employed in

Paris by M. Doyere, is most useful in warm and damp climates, and for plants difficult to dry; it is easily employed in scientific voyages.

Bamboo frames, found everywhere in tropical climates, replace excellently frames and bars of iron.

There is another more speedy process which requires much less paper, but preserves less perfectly the dried specimens: it only needs a dry and spacious room. The flowers are placed in a simple sheet of paper and pressed; then the sheets are spread out, for the night, on the floor, and, when dry, pressed again. This process is not so good as the former, and should be made use of only when there is a lack of paper.

This is all the art of making herbals; and every intelligent traveler knows how to suit his process to circumstances.

In damp times and regions, it is well to quicken the process of drying. Paper perfectly dry should only be used, and changed often. The paper should be dried in a warm oven, where bread has just been baked.

Watery plants, such as bulbs, orchides, etc., continue green in herbals several months after they are placed in them. It is well to plunge them in boiling water for a minute, or, still better, to put them in alcohol for a couple of hours; then they should be taken out and placed between two leaves of brown paper, where it dries easily, as the action of boiling water or alcohol has destroyed the life of the plant.

There are plants whose leaves or flowers easily break after drying; in such case all the parts should be sent separately.

There are families of plants that require peculiar pro-

cesses of preservation. Palms, on account of their size, cannot be preserved in common herbals. Yet, it is important to complete the history of this remarkable family. For this, must be preserved:—1° The dried leaves in paper spread out, when they are not too large; folded like a fan, dried in the air and wrapped in brown paper well tied, when they are large.—2° Clusters of flowers or corymbs with the common envelope, taking care to preserve equally the male and female flowers, when they are separate; they should be dried quickly in the open air and wrapped in paper or cloth, taking care to collect the flowers that fall off. When these clusters are not large, it would be well to preserve them in weak alcohol, and, in all cases, it should be used for branches to be put in the same jar with ripe fruits of the same plant.—3° Clusters of ripe fruits dried in the air and other fruits in alcohol.*

Those great marine plants, commonly known by the name of sea-weed, should be dried by hanging them in the shade, in the open air, without pressing them in paper; they should, afterwards, be put in paper bags, with a label of the place where they were collected and their color when fresh.

They can be better prepared in Paris than in traveling, as they often require much care, unless the traveler is skilled in the art. Samples preserved in alcohol would be useful for anatomical researches.

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* The *proof spirit* or new rum of the best apothecary shops, the density of which is about 0.917 to 0.925, is highly suitable for the preservation of any of the objects of natural history which we may desire to preserve. New rum, of common strength, would not be so injurious to a delicate, colored object, as alcohol.

Before drying the small kind in the same manner in the open air, all the sea water should be pressed out, by squeezing them gently, and absorbing it with brown paper.

The most of the other criptogamous plants, such as the fern, mosses, lichens, mushrooms large and small, are prepared in herbals as other vegetables.

The only proper way to preserve the pulpy mushroom is in alcohol, or wrapping them in flax or cotton; but a note or sketch should be made of their colors, for only their form and structure are thus preserved. Young specimens of these plants are preferable.

However the collections we have spoken of are made, a label should be attached to each of the specimens, indicating:

1° The place where the plant was found, and if the place is little known, its position in relation to one that is;

2° The time of the gathering of the specimens, whether in flower or fruit;

3° The name the plant bears, taking care to have it repeated several times, and its meaning should be added, whenever it is known;

4° The uses of the plant in domestic economy, the arts or medicine;

5° The color of the different parts and particularly that of the flower, its odor, the consistence of the fruit, and the manner it opens, when ripe; in fine, all the phenomena relative to the plant;

6° The size, direction and consistence of the plant. If it is a tree of some size, and if the traveler can sketch, it would be well to give a drawing of its form, especially for palms and other monocotyledons; common trees, if

there is no sketch made of them, they may be compared to some of the best known trees in Europe;

7° Numbers should be written on the separate samples of the fruits, seeds, flowers, or wood of the same plant, which form the parcel the traveler sends, as well as on the samples of the same plant that he keeps, and on his catalogue or journal, so that he can afterwards give accurate information of the plants he sends. These numbers should not be repeated during the same tour, but should form a series, to avoid confusion.

If the traveler can measure, or knows the height above the sea of the regions he travels over, he should add to the note relative to each plant a statement of the height where it was found; the exact height is not necessary. If he does not know the height, the omission can be partially remedied by the most remarkable and abundant vegetables that grow around.* [See note at page 51.]

Dry fruits should be sent in boxes with a label and number corresponding to that of the branch of the plant, in the herbal, to which they belong. All the dry fruits of too large size, to be well preserved in herbals, should be collected separately, the ripest chosen, dried carefully and wrapped in paper. Those of palms, pandanus, zamia, conifers, proteacees, lecythidees, cucurbitacees, the leguminous family, the bigonias, bombacees, sterculiacees, especially deserve to be collected separately.

Pulpous fruits should be sent in weak alcohol at 18°, in

* On mountains each species of plants only grows to a determined height, travelers can therefore notice the most remarkable of them either by their shape, size or their abundance, indicating them by their names or by figure; and point out by lines where these species cease growing, adding a certain number of zones and indicating the zone in which each plant grows.

acetic or pyro-ligneous acid dissolved in water, or in water saturated in marine salt, if these first two liquids cannot be had, for the preservation of objects is much less certain and less perfect in this fluid. Each kind should be put in a separate jar and enveloped in cloth, flax or cotton, or if several kinds are put in the same jar, each kind should be put in separate bags with special labels.

Among the pulpy fruits that deserve to be collected, we shall particularly point out those of several palms, many of the bromiliacees, resembling the ananas, aroidees, sapotees, and diospyrees; several annonacees, the pulpy-fruited caparidees, papayers, the soft-fruited curcurbitacees, guthifers, aurantiees.

It is desirable that flowers too delicate or too pulpy to be easily analysed when dry, should be, also, sent in flasks of weak alcohol or acetic and much weakened with water; such are those of the orchides, balisiers, aroides, asclepiades, and all other plants difficult to preserve in herbals. It is important to tie on the flask a label marked with the name of the plant, or at least, a number corresponding to that which bears in the herbal the sample of the plant to which the sample belongs. Labels on jars frequently falling off, it would be best to mark these jars with paint, or to put in each jar a bit of wood or parchment bearing the number, or a label written with crayon or ink, if the objects are in alcohol, or on thin pieces of lead marked with a knife. When several plants are put in the same jar, a label, thus marked, should be attached to each. Without this precaution, the collection is useless. Flowers of the different species should not be put

in the same phial. If it is ever necessary, a label should be attached to each. Or they should be put in paper pasted together, with the necessary specifications on the envelope.

If there is neither phial nor alcohol, the flowers may be dried in the air without pressing, and then folded in paper and labeled; care should be taken to put them up, so that there may be no danger of pressure.

Entire specimens in flower and fruit of parasites with their roots and the root in which they are imbedded should be preserved in alcohol, or vinegar, or salt-water. Males and females of these plants, in which the sexes are generally separated, should be collected. These plants are generally remarkable for their absence of leaves, for their pulpy consistence and creeping character.

Herbals and fruits, when perfectly dry, should be put in tin, or, at least, well painted boxes, so as to be beyond the reach of mice or insects.

Leaves of paper containing plants, should be well pressed together in packets and placed between two sheets of plain paper, before being put in boxes.

In packing up, several samples may be placed between each leaf of paper, and the number of leaves placed between be lessened, if necessary; the packets should always be well pressed together. Any kind of paper is good for packing; bananas or any large-leafed plant can replace it; it is only necessary that the plants should be arranged with care, so as to give an equal thickness to the packets in all their parts.

If there is time the specimens should be preserved by plunging the dry plant in an alcoholic solusion of corro-

sive sublimate (2 to 4 drams for a quart of alcohol at 56°*) or to rub it with a pencil then to dry it in a leaf of paper, which requires but a few instants. With this precaution, all the specimens sent may be preserved; and for not making use of it, several parcels of plants have arrived damaged by insects.

If the plants are fumigated with sulpur, they will be preserved from insects for a long time.

Among those sent there will be many we have received before; but they will not be useless.

Plants preserved in herbals, which we already possess, will be employed in forming special herbals for different countries, very useful for the study of botanical geography and to facilitate the researches of travelers, either by making exchanges with foreign museums, or to enrich the principal museum of the departments.

Besides, there are always objects that corrupt by time, which it is useful to renew.

Collections of plants, from whatever country they come, have always a certain number of plants which the museum does not possess, or offers them in a different state from those we possess, and so are always interesting, when well made; but there are countries little known, from which we desire to receive all that can be collected.

The North America: the Floridas and southern parts of Louisiana, Arkansas and Texas, a great part of Mexico, particularly the northern part, as well as California,

* The followiag mixture is an excellent wash for plants, recommended by the late Sir J. E. Smith, and well known to botanists as "Smith's Liquid":—

Alcohol, 1 pint—camphor, 2 drs.—corrosive sublimate, 2 drs.—used with a camel's-hair pencil.

Plants well dried and kept in a clean room, free from moisture, scarcely ever suffer from the attacks of insects in our climate.

the southern part of Mexico, and the countries comprehended between that state and the isthmus of Panama; the great isles of the Antilles, Hayti, Cuba and Jamaica, though formerly explored, are now scarcely represented in our herbals.

Botany is already cultivated with success in many countries. Travelers can, sometimes, find herbals already collected; it would be useful to procure them, especially if they have but a short time to stay or even a single season, after assuring themselves that these herbals are made with care. This would be important, especially in countries where the flora has been treated by some resident botanist, and the kinds and species proper to these local floras should, if possible, be obtained.

*Collection of wooden stalks or trunks of trees.*

This collection should be made in a different manner, for the trunks of the *monocotyledons* and ferns, and for those of the *dicotyledons*. For the first, such as the palms, vaquois or pandamas, the dracœna or dragoniers and the ferns in trees, etc., whose structure varies in height according to the age of the trees, it would be desirable to obtain grown and entire trunks, from the root to the top of the tree, when transportation can be effected without difficulty or expense. But when the size of the trunks and difficulties of transportation are so great that it cannot be conveyed entire, it should be sent in three pieces of about 20 inches each in length, taken, the first at the base with the roots, the second in the middle, and the third from the top with the first cluster of leaves. When the trunks are very large, damp and hard to dry, it is well, to quicken their drying, to split them

lengthwise through the middle, but the two halves should always be sent and a round piece cut crosswise from 2 to 3 inches thick.

For the dicotyledonous vegetables, one of the principal trunks or a perfectly healthy branch should be taken, and a portion of it 16 to 18 inches long preserved; the size best suited for samples is from 3 to 6 inches in diameter. Generally the age of the trunk or branch should be such as to have at the same time perfect wood and pulp; for the kinds of wood used for building, it is necessary that the samples should be taken from trunks large enough to give an idea of the physical qualities of the woods. The samples should be sent with the bark entire. If there is danger that they do not dry well and shrink, they should be sawed lengthwise, at some distance from the pith, so that it may remain perfect on one of the pieces, and even in that case, it is well to send, besides the two halves of wood sawed lengthwise an entire round of from 2 to 3 inches thick.

All these samples of trunks, whether monocotyledons or dicotyledons, should not be boxed or sent off before they are perfectly dry. They should until then be kept as much as possible far from insects. It is indispensable to give interest to these samples of wood, to label them with numbers corresponding with samples of branches with leaves and flowers or fruits dried botanically, so that they can be determined with precision.

These numbers should be written on the edge wood cut very plain, either with ink or black crayon, or, better, with paint. When the samples are few, they can be notched or marked with Roman characters cut deep in the wood. It is very important either in the catalogues

or in the labels of the samples in the herbals, to write the common names which the trees bear in the country where the samples were gathered, as these name are more generally known for the great vegetables than for the little plants; and by this precaution new information can be more easily obtained concerning the trees.

After having indicated the manner of making collections, we shall now go on to particularize the vegetables whose trunks we especially desire to obtain.

The collection of the museum is already rich in trunks of arborescent fern. Yet it possesses but very few of those which do not belong to the tribe of cyathees, such as the diplazium, dicksonia, lomaria, angiopteris.

Among the woods of the dicotyledonous trees, we shall place in the first rank all the woods employed in the arts and particularly in cabinet-making and dying; woods which we receive only in the state in which commerce brings them to us and which it would be very interesting to have complete with their pith and bark, and especially with a branch in flower or fruit preserved in herbal, which facilitates the determination of their scientific appellation. With the exception of a small number of woods of Brazil, which we have received in this manner, we have every thing to ask in this respect from Brazil as well as from Guyana and the Antilles, and samples suited to clear up the history of different sorts of cabinet woods, fron woods, pallissander, yellow woods, etc., would be of great interest. We shall cite, besides, the wood of the fig-tree sycamore of Egypt, employed by the ancient Egyptians, those of the meliacees or cedrelaces of India, that of the flindersia of New Holland.

Under the point of view of vegetable anatomy, the

other trees, which do not furnish woods employed in the arts, are not less interesting, and all should be collected; but the branches need not be so large, say from two to three inches in diameter. The countries which have not yet added anything to the collection, and in which are to be found the objects that we want, are, in the ancient continent, Arabia, Persia, but, above all, China, Cochinchina and the great isles of Asia; New Holland and Van Dieman's Land, whose vegetation is peculiar and from which we have as yet scarce a single sample of wood; Senegal, the Cape of Good Hope, Madagascar and Abyssinia: in the new continent, Mexico and California, Peru, Columbia and the Magellan. In these different localities, should be procured not only specimens of wood from large trees, but the principal stalks of shrubs and of the great ligneous plants which never obtain the same size in our climate. But among the dicotyledonous vegetables there are none that merit the attention of naturalists as the creeping ligneous plants known as so much lianes. Almost all these plants present a remarkable structure, more or less anomalous, which may throw a light on the mode of increase and nourishment of vegetables. Samples of these fruits, collected by MM. Gaudichaud, Perrottet, Guillemin, Melinon, have already suggested valuable ideas. But there are yet many gaps to fill up, and persons living in warm countries could supply us with important documents, by collecting not only portions of all these plants but by sending pieces of the stalks of sufficient size taken from the foot of the oldest trees with the roots of younger trunks: young branches of from one to two years old and branches with leaves and flowers dried botanically. The essential point would be for each

kind to have the succession of its different ages from the branches of the first year with their leaves, flowers and fruits up to the oldest trunks; and the samples could be easily gathered when the great trees are cut down in the forest, round which twine these parasites. The common names which they bear in their country should be marked with care both for the creepers and the trees as well as the virtues ascribed to them, and the uses to which they are applied. It is essential for most of the parasites, even when they are not of large size, and especially of those which contain much water, like the trunks of the cissus, to cut directly pieces some inches thick, as their organization is better preserved than that of the larger trunks.

All the different pieces coming from one trunk should be labelled with the same number.

*Production of vegetables.*

We comprehend under this designation all the parts of vegetables or products of the vegetable kingdom, which are of sufficient interest to merit collection; such as vegetable fibre employed in the fabrication of tissues or cordages; natural tissues coming from the preparation of the bark of trees; paper, made directly from certain plants; starches, with the starch prepared at the place where the plant grows; tubercles root, branches and seeds from which it is extracted; gums, sugars, resins, vegetable wax, and other concrete sugars elaborated by vegetables; dye-stuffs; besides, roots, barks, leaves or fruit, used either in medicine or the industrial arts.

It is essential, as much as possible, to join to these objects, with a label of the same number, a sample in an

herbal of the plants which produce them; and to give the common name both of the plant and the stuff used, and the uses to which it is applied.

Samples gathered with these precautions in the countries where these products are developed would be interesting even for the objects which generally arrive in Europe through commerce; for, in great number of cases, the origin of these stuffs, is obscure, the distinction of their kind and different qualities very difficult, and many of them are adulterated by falsifications or secondary preparations.

It would be well to send a sufficient quantity of each of these stuffs for certain experiments which may be judged interesting; from one to two kilogrammes would generally be a suitable quantity.

The stuffs that are liable to be attacked by insects should be placed, well dried, in boxes, bottles or earthern jars perfectly sealed.

*Specimens relating to vegetable anatomy and physiology.* Many objects useful for extending the study of these branches of botany are comprehended in the collections of trunks, fruits and dried plants which we have already particularized; we recommend, here, under this special title, the collection of samples which would show the deviation from the usual structure of vegetables, or those which must be preserved in a particular manner in order to be submitted to observation. Such are:

1° The results of experiments tried, frequently, for a different end, on vegetables which do not grow in Europe—

Thus trunks of the palm trees on which are made notches or perforations to extract the sweet sap that oozes from them.

The trunks of dragoniers (drocœna) on which should have been practised these punctures for a time more or less remote.

Examples of punctures more or less entirely grown over on the trees whose wood is very different from that of indigenous trees, such as the very soft woods of baobab, the papayers, and on the very hard woods as iron wood, ebon, etc.

2° The excrescences and other anomalies of the development of these woods, by knowing exactly the tree on which they have been observed or gathered.

3° The parasitical plants inserted on the trunks or roots, which bear them, such as the loranthus, viscum, and other parisites on the branches, the rafflesia hyduora, balanophara on the roots; these samples showing the parasitical plants still fixed on a portion of the plant which nourishes them, ought to be preserved dry for the ligneous species, in alcohol, for the herbaceous or pulpy species.

4° Monstruosities or anomalies of structure of flowers or exotic fruits, preserved in alcohol.

*Fossil vegetables.* The collections of this kind at the museum (for several years) have greatly increased, and the researches of travelers and correspondents of the establishments will soon give them greater importance. Up to this present time, these collections comprehend, almost entirely, the fossil vegetables of Europe; yet it is known that the soils that produce them are found in the most remote parts of the world, and the comparison of fossils coming from a great distance would be of great interest for geological theories. Thus, coal-land, so rich in fossil plants in Europe, is excavated at a great number

of points in North America, in the East Indies, in China, and New Holland, and is found, without doubt, in other places; the mines of the United States have been worked with care for the fossils which they contain, and have already supplied our galleries with numerous specimens.

It must not be forgotten that to classify exactly these fossils, a considerable number of specimens is frequently necessary, and that a collection of the varieties found together in the same soil is often one of the most important results; that consequently, especially in distant localities, the greatest number of specimens possible should be collected and sent.

Specimens should especially be procured which present the stamps of leaves entire and perfectly marked, the trunks which show still the carbonised bark which covered them, and the impression of the insertions of the leaves that it bore, besides characterised fruits, such as those analogous to the cones of the pines, the fruits of the palm trees, etc.

Coal-land, although more rich, in general, than any other in vegetable fossils, is not the only one which contains them; the secondary formation, and the tertiary, present also numerous impressions of leaves, of branches, of flowers even and of fruits, whose succession at different epochs of formation, and comparative structure in various countries of the world, is not less interesting. Their acquisitions cannot be too strongly recommended; but it is necessary, as much as possible, to join to these fossils the animal fossils which may accompany them, which will better tend to determine the epoch of the formation of the deposit which contains them.

There is still another class of vegetable fossils which,

in latter times, has acquired more importance than has been given to them before; they are petrified woods which by a new process of preparation, permit to study their interior organization, and to compare them to living woods; these woods are found in the deposits of every epoch, and in countries the farthest separated. They belong to families and classes very different; thus their examination is very important. It should be recommended to persons, who encounter them, to collect them with great care, in choosing pieces which appear to differ, not so much by their exterior form as by their interior structure.

It is not necessary to send large samples of the characteristics which distinguish them as regards their interior structure, and especially for the dicotyledonous woods with concentric layers; it is best, on the contrary, to break them neatly with the hammer and reduce them about 1 decimetre cube. The only large pieces which ought to be preserved are those of the monocotyledons, such as the woods of palms and the woods which would be analogous to the trunks of the tree ferns, for there, it is necessary, as much as possible, to have the trunk entire from the centre to the surface and in length of eight to twelve inches. Among places where the most remarkable and varied fossil woods have been found, we would cite the little Antilles, above all Antigua, Saint-Lucy and the Martinique. The museum possesses but few specimens from these places.

All the specimens of fossil plants, which may be addressed to the museum, should be wrapped with care, in two or three papers; those which have delicate impressions should be covered in their face with cotton or lint,

above all if the rock or stone is tender; if the samples are thin and fragile, as often arrives with impressions upon slates, they should be placed in separate boxes. The boxes should be proportionate to the size of the samples, so as to be filled compactly that they may not be shaken in transportation: fossils should not be put in the same case with dried plants or glass cases. Without these precautions the samples would rub and the impressions be effaced.

## CHAPTER III.

### ZOOLOGY.

*Zoophytes, Worms and Mollusca.* The sea is peopled by an infinity of animals soft or gelatinous, grouped as mollusca, worms or zoophytes, of which some live isolated, others in society. The greatest part of these animals are unknown, and their study is very important, as they give general notions on the organization of beings and on the diversity of forms under which living nature shows herself.

Surgeons and amateurs of natural history traveling on board ships might procure us a great number of these curious animals.

It is sufficient to take them with a net, to wash them well in warm water, to put them in alcohol with the precautions that we shall point out, and to prepare a note which indicates the latitude of the place where they are taken, if they live solitary or in society, if they are phosphorescent, if they inhabit a certain depth or the surface of the sea. The colors of gelatinous animals not keeping well in alcohol, it is very important to mention them.

Rocks, sea-weed, the bottom of the sea, are covered

with shells of a gelatinous or flesh-look aspect of very bright colors, that may be mistaken for lifeless bodies; yet they are formed by the aggregation of a crowd of little microscopic animals, whose organization is very varied; care should be taken to remove them with the blade of a knife, and these beds, not generally very thick, should be plunged in spirits of wine, taking care to note their color, which quickly disappears.

It would be useful to collect numerous sponges, and to preserve them in alcohol.

There exist, in the depths of the sea, a multitude of animals which do not appear on the surface, and which are entirely unknown. They are obtained with the drag; frequent use should be made of the drag from several fathoms up to the greatest depths, that is, as far as 150 fathoms.

Not less care should be taken to collect the land shells than those of the sea. Fossil shells are likewise of great interest.

Very frail shells, oursins, sea-stars, etc., should be wrapped in cotton, and placed, each one apart in a box. It would be well to wash in chalk water oursins and sea-stars; the greatest number possible of these animals should be preserved in spirits of wine, taking care to surround them with thread, or even fine linen or cotton, and, afterwards, wound with thicker linen or several turns of thread, so as to hinder the points or spines from falling. The madrepores of a certain volume should be fixed by wire to the bottom of the box in which they are placed, but these frail substances would arrive in better order, if each specimen was placed in a box apart.

The shell-fish should be placed in alcohol. The outer shell, when it is spiral, should be broken at the upper

part and at several points of the spire, to let the liquor run in, so that the whole animal may be preserved; it is possible, following this indication, to have shell-fish in such order that they may be dissected, even after being a very long time in the collections.

In calm or gentle breezes, it is well to have ready a gauze net to seize the sea mollusca, whose number is considerable. They should be watched and drawn several times a night, for it is probable that the spirule will be found at the surface of the water. Fishes should be opened to find this same spirule which is doubtless caught by them; the other cephalopodes are not less numerous or less curious to study.

There is a class of beings called marine worms or annelides, of which but a few kinds are known, because little pains have been taken to collect them; these animals frequent generally the shores of the sea; a great number live in the interstices of madrepores, several make deep holes in the sand or in the mud. With spades and hammers they could be easily procured; it would be necessary to preserve them in alcohol; as the greatest part of these kinds make themselves sheaths, it would be well to collect them and put them in spirits of wine. Ordinarily these animals quickly change color; it would be well to note their color; it would be always well to do this for the leeches, whose colors disappear as soon as they are dead. The attention of naturalists should be directed towards the lombrics or earth-worms. These animals could be sent us alive as well as all the land mollusca, by sending them in closed boxes containing a little earth or damp moss.

It would be well to look for the entozoaires or helminthes

of different animals and send them, declaring at the same time the animal and viscera whence the worm is extracted.

*Articulated animals.* Articulated animals (viz: insects, spiders, crustacees, etc.), compose the principal family of the animal kingdom: collections made in distant countries include generally a considerable proportion of new varieties, and the capture, preservation and transport of these little beings offer no serious difficulties. We recommend in a special manner to the attention of travelers entomological researches; undertaken with zeal and intelligence, even by a person who is not a naturalist; they cannot fail of being useful to science and important for the museum. In this, as in the other branches of zoology, it is not only the large and brilliant kinds which are more valued by the naturalist; generally it is, on the contrary, among the small insects or those of plain colors that the more novel forms are found; for collectors have ordinarily neglected them, and even in the best explored regions (in the environs of Paris, for example) are discovered varieties which, till now, have escaped attention. As for the manner of forming these collections and the particular indications relative to the classes into which is divided this vast division of the animal kingdom, we shall give to each of these groups a separate article.

*Insects.* What we have said of articulated animals in general, is particularly applicable to insects, whose number is immense, and whose forms vary beyond all imagination. The kinds differ extremely from one country to another, often even from one locality to another, and it is rare to find perfect identity between insects which inhabit

different regions, though often, at the first glance, no difference can be detected between them; besides, there is no point on the globe, where the entomologic faun is completely known, and although our museum has about eighty thousand kinds, our galleries do not include half that are seen in looking through the different collections of Europe. It results that, in all countries, travelers who occupy themselves with entomology, can render themselves useful to the museum, and, in distant countries, they should not neglect collecting all the insects they find, even when the kinds do not appear to differ in anything from those found every day at home. There are some parts of the globe, which, entomologically, deserve to fix the attention of the collector, either by reason of their extraordinary richness or on account of the small number of parcels yet sent to the museum. Such are: the west part of Africa, from the gulf of Beninso to the cape of Good Hope; the Birman Empire; Assan, and even the interior of India, whence the English entomologists receive so many remarkable varieties; Borneo, the Phillipines and the neighboring isles; the western and northern part of Australia; the west cost of North America, from Mexico to Behring's strait, and the great basins of the Amazon.

In general entomologists content themselves with collecting insects without studying the manners and mode of life of these animals; yet they thus fulfill but a part of their duty, for it is necessary for the progress of science to have exact notions on this subject. Thus, it is well to indicate, whenever it is possible, not only the locality where the insect is found, but, besides the nature of the locality, the names of the plants on which the variety is

found, and all the particulars relative to its manner of life. It would be interesting to have samples of the products of the industry of these little beings, nests of bees and ants, the combs of wild bees, cocoons, etc. The stuffs supplied by insects and used in the arts, are equally important to collect and study with regard to their mode of production. Besides, we shall call the attention of travelers to the alteration made by insects in the plants they inhabit, the manner many of them pierce the bark of trees or even the wood; eat or roll the leaves, or cause in them, by their stings, excrescences, etc. Specimens of these alterations would be of great interest to entomology, especially when united with the insect that occasions them.

We urge travelers, likewise, to look for cheniles and the other larvæ, and to preserve some of them alive, in order to obtain a perfect insect, or at least, a crysalis. Larvæ whose origin is unknown would be of scarce any interest to the museum, while a collection in which each larvæ is united with the perfect insect would be of great interest.

Besides the insects that live as parasites on other animals should not be neglected.

Insects are easily caught and need few instruments. The best way to take a great number of these animals at a time is to throw quickly on the plants of the meadows and lawns a cloth sack whose mouth is attached to a circle of iron, fixed at the end of a stick. By directing this instrument alternatively right and left, even the fleetest insect cannot get out, and all those that are caught by its movement, are driven to the bottom of the sack; they should be taken out one by one, either with the

hand or pincers, and pierced immediately with a pin proportioned to the size of the animal. The coleopters should be pierced on the right wing (clytze), the hymenopters, dipters and lepidopters in the middle of the waist, the orthopters and nevropters a little behind, between the base of the wings.

For the small kinds, it is better not to fix them in this manner, and to preserve those whose shell is hard enough, the coleopters and the most part of hemipters, for example, it is sufficient to place them in little bottles or in flasks full of rolls of paper (or even cotton, if paper is wanting). This way is even applicable to the great kinds and should be employed when there is not time to impale with care the insects that are caught. The small kinds with soft shells should be preserved in alcohol, for drying frequently deforms them to such a degree that they cannot be recognized. It is, also, in this liquor that the caterpillars* should be preserved, as well as other larvæ, and it would be well to place with them a certain number of dried insects so that a part might be taken for anatomical researches.

Butterflies are taken by the aid of a gause net or pocket. The insects are found chiefly in fields where flowers abound, and on the leaves of trees; but they must be sought too in dark places, for, during the day, the night kinds are here asleep upon walls or the bark of trees.

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* Caterpillars which infest our trees and shrubs and gardens, and of which we have at least 450 species, may be well preserved in the following preparation: Alcohol, 1 pint; Rain Water, filtered, 1 pint; Corrosive Sublimate, 2 drs.; Burnt Alum, 3 oz.. Mix and let it stand 24 hours; when used add one-third water. The phials should be, at least, a third or more larger than the insect.

With a little skill, they can be pierced without seizing them beforehand, and if there is fear of missing them thus, they should be covered with the gauze pinews, through which the pin can be passed. When the air is calm and the night obscure, they can be easily taken by means of torches, for it is sufficient to place a light in a low and open place to attract a multitude of phalenes and other nocturnal insects. But to have handsome lepidopters, it is best to obtain caterpillars, feed them with the leaves of the plant on which they are found, and pierce the butterfly as soon as he has undergone his change, for the specimens caught in their flight are rarely fresh.

For the coleopters, it is not sufficient to beat the bushes and herbaceous plants, these insects should also be sought under the bark of trees, in the interior of mushrooms, under the stones and even in the soil: for this, it is well to be provided with a paring-knife, an instrument which is much like a carpenter's chisel, but which is slightly curved, and ends in a kind of pointed spatula.

Aquatic insects are taken by the help of a net like that used for insects of the air, but whose bag should be of canvas instead of cloth. In fine, to catch the hymenopters, whose sting is often formidable, it is necessary to have a pincers whose prongs are disposed like rackets and armed with coarse lace.

The preservation of insects that have been pierced requires some care; to prevent the lepidopters from injuring their wings in struggling, it is well, directly after they are caught, to press the throat down; but, generally, it is necessary, on returning from the chase, to kill quickly all the insects that have been caught, and, to attain this end, the best way is to place them dry in a tumbler sur-

rounded with boiling water, for a high temperature kills them in a few minutes. The boxes designed for the reception of entomologic specimens should be of light wood, and, at least, $2\frac{1}{2}$ inches deep: the bottom should be lined with cork or some other very soft vegetable substance, and the pins should be pressed in as much as possible. When the insects are large, it is necessary, besides, to fix them by means of several pins placed around; for if one of them gets loose, he not only injures himself, but likewise damages all which he jostles. As soon as the box is full and the insects dry enough, it should be shut and pasted with bands of paper on all the joints; but in warm countries, where destructive insects abound, this precaution is not sufficient; the boxes should, besides, be placed in a tin chest, soldered on all sides.

*Arachnides.* Animals of this class are less numerous than insects, but they merit the attention of travelers; certain kinds live in the water, but the greatest part are land animals, and live in shrubs or in holes, either in old walls or in the ground. The industry that many spiders display in the construction of their dwellings or the snares designed to catch their prey, is very remarkable; the nests of the mygales, for example, is very curious. It would be interesting to have a collection of threads spun by exotic spiders, and the preservation of their delicate tissues is easy enough, if they are spread out on a leaf of paper dipped in gum-water. It is perhaps superfluous to add that these specimens would have little value, unless each one is accompanied by the spider that belongs to it. In fine, we will point out to travelers the kinds reputed venomous, and those which live as parasites on other animals.

The preservation of the arachnides* offer some difficulties; in drying, those animals lose their shape, and in alcohol, their colors; so it is necessary, as much as possible, to preserve specimens of the same kind by both these processes, and to take care to number them so that they may be easily identified.

*Crustacea.* These animals are almost all aquatic and the greatest part in the seas. Crabs are found generally near the shore in the hollows of the rocks and under the stones; but there are kinds which hide in the sand or which live at great depths; some live entirely in the sea. It is the same for the decapodes macroures, such as the langoustes and the salicocs; and it is generally by the aid of drags and nets that they are taken; but a more successful way of fishing is to sink to the bottom an open case, a kind of basket whose mouth is in the form of a reversed cone; some carrion placed in the interior of this snare attracts the crabs, and when once in they cannot get out.

The small kinds of crevettines are found, in great abundance, in the midst of the sea-weed; and to catch them, it is necessary to place a certain quantity of marine plants in a vase full of sea-water; the little animals that are in it quickly exhaust the oxygen dissolved in this liquid and they rise to the surface, where it is easy to take them with a spoon.

Other crustacea of small size are found in the deep

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* The following preparation may be relied upon, and as the best out of a number of experiments for the preservation of this class. I have specimens of spiders which have been preserved in this solution nearly ten years, and yet with their colors perfect:—

Alcohol, (80°) 2 parts—water, 3 parts—alum, 2 oz.—to one pint.

sea and are taken in nets like the sea mollusca. Besides, there exist a great number of these animals, who live as parasites on fish (about the gills especially), and by a collection of them science would be enriched by a multitude of new and curious specific forms. Until now travelers have almost entirely neglected the little crustacea of the order of the entomostracea, which are found in fresh water; and it is desirable that they should be collected in all localities.

The best means of preservation of the crustacea is to plunge them in alcohol from 20 to 25°, after having wrapped them in linen or leaves. The large kinds should be dried, by taking care first to take out the viscera that are under the shell; but the crustacea preserved in this manner are extremely fragile, and it is rare to preserve them entire.

*Fish and reptiles.* Although among sea fish there are several kinds which are found on different coasts, the greatest number inhabit particular shores and gulfs. It would be useful then to send those that are found in countries not yet visited by naturalists, and even the common market fish.

As for the fresh-water fish, they differ, not only according to the country, but according to the rivers and lakes where they live. It would be well to send all that can be found.

Generally, any fish brought from a foreign market, with the name that it bears in the country, would be an acquisition interesting for science.

They should be put in alcohol, or, if too large, only the skin well dried, taking care to preserve the head, teeth and fins. It is essential that the fins should be stretched

out in order to dry them well. For this they should be glued on paper.

Reptiles should also be put in alcohol, even if their great size only permits thus to preserve the skin, which is much better than to send it dried. In skinning snakes, it is necessary to leave the head, and to take care not to injure the scales. Great care should be taken too, not to break the tails of lizards.

It would be desirable to send the skeletons of fish and reptiles too large to be sent in spirits.

These skeletons need not be perfect. It is sufficient to take off the flesh, and, afterwards, to dry perfectly, without taking them to pieces. The whole skeleton should be placed in a box with cotton or with very dry and fine sand. If it is too long, it should be separated into two or three parts.

The following indications will point out the reptiles which, in the present state of science, would offer the greatest interest for the collections of the museum:

*North America.—Testudo polyphemus* or gopher.
*Cistudo blandingii*, Holbrook.
*Emys rubridentris*, Leconte.
*Emys floridaua.* ib.
*Emys mobylensis*, Holbrook.
*Emys insculpta*, Leconte.
*Emys aregoniensis.* Holbrook.
*Emys hyeroglyphiea*, Holbrook.
*Emys cumberlandensis*, Holbrook.
*Emys conciuna*, Leconte.
*Emys troostii*, Holbrook.
*Emysaura serpentina*, Dum. Bib. (large ones.)
*Chlonura temminckii*, Holbrook, (young and grown.)

*Trionyx muticus*, (large ones.)

*Trionyx spiniferus*, (large ones.)

As much as possible some living specimens of each of these kinds, as well as of all the other chelonians; these reptiles, whose flesh is eaten, abound in the markets of the United States.

*Rana mugiens* or bull-frog; (living subjects.)

All the small kinds of lizards and serpents and all the batraciens urodeles, with persisting gills.

Rattle snakes from the south which differ from those of the north, (in alcohol.)

We have nothing, or almost nothing, in reptile from the Californias, Yucatan and Guatemala; *boas*, the *crested basilisk*, and the *horrible heloderme*, a great lizard with tuberculiform scales, should be sent us.

*Antilles.* Cuba nourishes an immense quantity of reptiles which are entirely unknown to us.

The museum possesses only some kinds of this class of vertebres from Jamaica.

*Birds and mammiferes.* The study of zoology in the museum of natural history is not confined to the observation of the forms of animals, to the description of their organs; it proposes, besides, to examine their habits, their development, their instinct, and to see if they can be of any use. Formerly, nothing could be learnt of these essential objects but by the relations of travelers. Establishments formed at great expense by princes or rich amateurs to collect and take care of rare animals, were rather objects of luxury and curiosity than an object of study. But since we have had a menagerie at the museum, a new career of observation is open to naturalists. There, animals can be followed in all degrees of their

developments, and their manner of living can be compared with their organization, that anatomy discovers after death; positive knowledge, acquired on the so important phenomena of copulation, gestation, birth; the varieties which depend on age distinguished from those which are produced by climate, nourishment, by crossing races, and the difference determined which really exists between species. If these animals are of a nature to render services to domestic economy or agriculture, and if they breed, there are the means to raise and domesticate them, and, so, to procure new resources. The vigogne, the lama, the alpaca, the tapir, the kangaroo, the casoa, and many others, will perhaps one day be very useful.

Considered with relation to science, there are few animals strangers to Europe which are not useful as a study. The history of the greatest part of them is yet very incomplete. That of the lion was not well known until after the lioness of the menagerie had whelps; it is also since two elephants have died at the menagerie of the museum that an exact knowledge of the anatomy of this great quadruped has been acquired.

Travelers cannot be too strongly recommended to neglect nothing in order to send animals to us when they have it in their power to find them living.

The small quadrupeds, chiefly those that burrow and hide themselves in the ground, are the least known. The bat tribe are still less so, and merit not less the attention and care of travelers.

Animals can easily be procured by applying to the natives of the country who know where they are to be found and frequently meet them. They can take them in snares

and bring them in alive. It will not be more difficult for them to take in their early youth the quadrupeds whose lurking-places they know, and birds whose nests they have seen.

The younger the animals are, the easier it is to accustom them to live in cages. They will require, at first, particular care; it will be well to feed them for some weeks on shore before shipment, and too much pains cannot be taken to tame them. An animal that is not frightened at the sight of those who take care of him, is always in better health and resists more easily the fatigues of a sea-voyage than one who remains wild, and there is scarce any animal that does not yield to kind treatment.

Nourishment in excess, when they are shut up, and without the power of taking exercise, would be injurious. The surest way of keeping them is merely to give them what is necessary.

After a suitable nourishment, cleanliness is most necessary to them. Often, on shipboard, some one would be found who will take care of them, either for amusement or a slight remuneration. It is essential to take precautions to prevent the animals being teased or irritated by passengers.

As there are always difficulties in the transportation of living animals, there is an easier way whose results are more extended; that is the spoils of dead animals.

Quadrupeds can be procured either by sending hunters into the interior of the country, or by applying to the natives of the country.

They will content themselves with bringing the skin, the bony head and feet of the great animals that they have killed in places too remote to be preserved or transported entire.

The mammifers of a size small enough to be enclosed in a jar or cask, should be put in alcohol. Those that are too large to preserve in this manner should be skinned, and care should be taken to send with the skin the feet and head, with the brain taken out, or if that cannot be done, the jaws, at least, should be sent. In preparing the head, care should be taken not to damage the skull. The brain can be extracted with care without increasing the occipital hole.

We shall speak, further on, of the means to be employed and the precautions to be taken for the preservation of the skins and for that of animals placed in alcohol.

When the skeleton of the animal can be joined to the skin, a great service will be rendered to science. The officers can entrust with this care the surgeons of the ships, for whom this operation will be easy.

It is not necessary that the skeletons should be set up. After having boiled the bones, taken off the flesh and dried them well, all those of the same animal should be put in a cloth-sack with moss, sea-weed, rolls of paper, or some other soft and dry matter, that they may not rub one against the other. Those that are very frail should be enveloped with paper, and care should be taken not to lose any.

Hunters ought to take care to proportion their shot to the size of the birds, so as not to injure them. As soon as a bird is killed, the blood should be staunched as soon as possible, and a little cotton placed in the bill and nostrils of the bird, so that the blood that comes out may not injure the feathers, especially those of the head. If blood has been spilt on the feathers, dust should be put on them

and renewed until they are dry; they can be made bright by rubbing them lightly between the fingers. After the bird is cold and the blood coagulated, it should be taken by the claws and tail, to place it in a bein of paper; these beins are arranged in a box, so that the feathers may not rub.

Birds should be skinned like quadrupeds, and care should be taken to preserve with the same precautions the bills and heads. Birds should be skinned more promptly than quadrupeds, because as soon as putrefaction begins, the feathers fall off. In opening the skin on the belly, care should be taken to separate the feathers *so that they be not injured.* Plaster or dust should always be put on the skin, in order to thoroughly absorb the moisture. The coccygis should be left with the skin; without this, the feathers of the tail are in danger of falling off. It will be the same with the bones of the extremities of the wings. If the bird has a fleshy crest, the head should be preserved in alcohol. When there are several specimens of the same class, it will always be useful to send one in this liquor.

It is desirable to procure, at the same time, the male and female, and specimens of the same kind, some young, others old, birds differing much according to their age. It is well to have also the eggs and nests.* To preserve eggs, a little hole is made in both ends, they are emptied

* A nest, before being placed in the cabinet or packed for transportation, should be thoroughly baked to destroy the insects. When it consists in whole or in part of animal matter, as feathers, wool, and the like, soak it with "Smith's Liquid."

Eggs are best prepared thus:—Pierce one end, break the yolk with a needle, shake the egg till the yolk and the white are mixed; then pierce the other end and blow out the contents; rinse the shell clean with water by a small pointed

and packed in bran or very fine dust. Care should be taken to indicate by numbers corresponding to those of the skin that laid them. Without this, these sorts of collections are useless. The same precaution should be taken with the nests, which should always be packed in a different box from the eggs.

The skeletons of birds too large to be put in liquor should be sent, if possible.

It is useless to stuff birds. They take up too much room; and this operation, which can only be done by experienced persons, it is better to postpone till they arrive at the place of their destination. It is enough that the skins be prepared and well preserved.

After having pointed out, in a general manner, what would enrich our collections, we think it necessary to specify the animals, whose existence is known, which the museum is without, or has not in good order, or desires to procure.

*North America.*—All the mammiferes which resemble our mole, preserved in alcohol.

The grizzly bear of the mountains; grown and young.

The empetra and all the marmots, especially the small kinds.

The different kinds of condylures.

The saccomys.

The kinds *pseudostoma* and *diplostoma* of American naturalists.

The bearich porcupine, hedge-hog.

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syringe. If there be a chick within, stick it in as many places as you can with a needle, and insert a strong solution of fixed alkali, or salt of tartar; shake it, and leave it until the next day—by this time a portion of its contents will be decomposed, and you can blow it out.

The lemming of Hudson's bay.

The wolf and carnivorous animals of the same region.

The antelope of the rocky mountains.

The mountain sheep.

The different kinds of foxes.

The ovibos or musk ox, an animal yet scarcely known in Europe.

*Labelling and packing collections.*

It is desirable that each one of the animals sent as skin, skeleton, or in alcohol, should be accompanied by a note which indicates with precision:

The country where the animal is found;

Upon what it lives;

Its habits, if they are known;

Its common name;

If it is useful or otherwise;

The uses of its skins, flesh, grease, etc.;

Popular and superstitious opinions concerning it among the natives of the country;

Its sex and age, if these are known;

The season in which it has been taken.

These notes written in a little note-book should have each a number corresponding to that attached to the objects to which they relate.

That there may be no confusion with regard to the place where the objects and notes are deposited, it would be for the person who sends them to verify all the numbers and arrange them in such a manner that they form a series, so that it may be certain that such a butterfly belongs to such a crysalis, such a shell-fish to such a shell. These numbers should be written on parchment or squares

of lead, attached with strong thread, either to skins inclosed in boxes or to jars or casks containing animals. It is easy to have the numbers distinctly marked on bits of lead; then there will be no uncertainty about the characters.

Thin pieces of tin can also be used with the numbers engraved with a steel-point, and these can be attached to animals immersed in alcohol.

A little cord with knots should be attached to objects thus preserved and to those which are in bones and very dry. These knots form two series separated by an interval; the first series marks the tenth, the second, the units; by this means any number can be specified. We even know by experience that the name of an object written with ink on a piece of parchment can be attached with a thread; alcohol does not alter it.

We have now to speak of the means of packing the objects of zoology, so that they may arrive in France in a better state of preservation.

Objects sent are either parts of animals, or animals preserved in alcohol.

The skins of animals and birds may be attacked by dermestes and other analogous insects, in warm countries especially, unless great care is taken to prevent it.

The surest means is to use the arsenic preservative known by the name of Becœur's soap.*

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* The following recipe for a preservative against the ravages of insects is easily prepared, and if not the identical "Becoœur's soap," it will answer the same purpose as above:—

Arsenic, pulverized, 1 lb.—Salts of Tartar, 6 oz.—Camphor Gum, 1 oz.—White Soap, 1 lb.—Lime in powder, 2 oz.

Shave the soap into small pieces, put it in an earthen pan over a slow fire, add a little water, and while it dissolves, stir with a wooden spatula; take it off and

This is the preservative employed in the museum and its success is certain. It is well to use it especially for rare and precious specimens, about whose preservation there is any cause of anxiety. It is wise to plaster the skins of birds with it, especially the claws and bill.

It is well, likewise, to plaster the naked parts of quadrupeds, such as the face and hands of apes.

Each bird or quadruped of small or middling size, thus prepared, and in the inside of which a little cotton is put, not to give it a form, but that the different parts of the skin need not touch, should be placed in a sack or enveloped in paper well closed, and these sacks should be ranged in a box, which should be well pointed, so that not only dampness but even air may be excluded.

The skins of large animals, too thick to be preserved by means of arsenical soap, should be rubbed with salt. The skin of the animal should be stretched, covered carefully with salt within and without, and when, after several days it is sufficiently saturated, it should be folded with the epiderm inside, and put in a box, or simply wrapped in cloth, straw or any other dry substance, and kept as much as possible beyond the reach of dampness.

The means that we have pointed out are simple, easy and require little time.

We come now to the way of preserving animals in alcohol.

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add the tartar in powder; stir it well till the whole is amalgamated, then add by little and little the lime and arsenic; as it grows stiff, stir it until a complete mixture is effected. Grind up the camphor in a mortar with a little alcohol; add this to the mixture when quite cold, but not before, as the least heat would cause it to evaporate; stir it well and it is fit for use. If too thick, soften with little water; if too thin, add little lime. It may be used with a piece of sponge or a small brush, and should be kept, of course, from children. Placed in a cool cellar it will keep a number of years.

If they are quadrupeds, birds, reptiles or fish of considerable size, each specimen should be wrapped in linen tied round the body with thread; if the animals are very small, like mice, small vipers, shell-fish or worms, the linen should be large; a certain number of these animals are placed upon it so that they do not touch; then the linen is rolled upon itself, so as to make a doll sowed with thread, that it may not unwind; afterwards, place the bundles side by side in a cask. When the cask is full, so that the bundles are packed close, it should be filled with brandy, rum or whiskey; generally some strong liquor; afterwards it should be pitched with care, so that the liquor may not escape. This method has two advantages: 1° Animals wrapped in linen cannot tear each other with their nails or spines; 2° The linen having imbibed the alcohol, if the cask leaks, the animal will not be entirely dry; and when the casks are opened, as they should be several times on a long voyage, there will be an opportunity of filling them again with alcohol.

The spirituous liquor must be from 16 to 22° of the thermometer of Baume; stronger, it destroys the colors of animals; it is used at 22° only for mammifers. All spirituous liquors are equally good. The colorless are preferable.

Before wrapping vertebrated animals in cloth, an incision should be made in the breast and abdomen, to let the liquor run in the inside of the body. The opening should be very small, in the side, and not in the middle. If the mammifers are large, it is well to pour the alcohol in the intestine canal, either by the mouth or anus.

It is well to renew the liquor, after the animal has remained in it some time; this precaution is absolutely

necessary, when there are several animals in the cask; if it is neglected, they may corrupt.

It is well to arrange the animals so that they may not touch the bottom of the cask.

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The following list of works published in this country, may be consulted with advantage by those who may desire to study any of the branches treated of in the "Instructions":

*Botany.*

Torry & Gray's—Flora of North America.

Gray's—Botanical Text Book.

Gray's—Manual of the Flora of the Middle and Northern States—*just published.*

Emerson's—Trees and Shrubs of Massachusetts—*Report.*

Dewery's—Herbaceous Plants, Massachusetts—*Report.*

Wood's—Class Book of Botany.

Beck's—Manual of the Northern and Middle States.

Torrey's—Manual of the Northern States.

Browne's—Sylva Americana.

Muhlenberg's—Grasses.

Nuttall's—Introduction to Botany.

Lincoln, Mrs.—Introduction to Botany.

Torrey's—New York Plants—*just published.*

Bigelow's—Plants of Boston.

*Conchology.*

Gould's—Invertetrata of Massachusetts—*Report.*
Warren's—The Conchologist.

*Zoology.*

Emmons'—Quadrupeds, Massachusetts—*Report.*
Godman's—Natural History.
Reports on Zoology, New York State.
Agasiz & Gould's—Zoology—*now publishing.*

*Entomology.*

Harris'—Insects of Massachusetts—*Report.*
Reports—New York State.

*Mineralogy.*

Alger's Philip's ———
Cleaveland's ———
Comstock's ———
Reports on New York State.
Trimner's—Mineralogy and Geology.

*Geology.*

Jackson's—Maine Reports.
" New Hampshire Reports.
" Rhode Island "
Hitchcock's—Massachusetts "
" First Principles.
New York State Reports.

# COMMUNICATION OF STEPHEN EMERY,

*Chairman of the Board of Education of the State of Maine.*

*(C.)*

*To his Excellency, the Minister of*
*Public Instruction of France:*

The undersigned, in behalf of the Board of Education of the State of Maine, tenders respectful and grateful acknowledgements for the distinguished honor conferred on the State of Maine, and the perfect demonstration of unbounded regard to the great and holy cause of education on the part of your excellency, by your notice of the northernmost portion of the United States of America, in the presentation of valuable works to our State on the subject of education, through the honorable Mr. Vattemare.

The elevation of rank, the glory of mental excellence, the affectionate respect and admiration of the great and the good, enjoyed by your excellency, are made more elevated, more glorious, more admirable, by acts like the one so gratefully acknowledged.

You have taught the sublime truth, that *mind* is not a creature of points and parallels, that it knows no geographical limitations, that in its all-pervading beneficent

operations, it is not confined within the beautiful and sunny domain of noble France; but transcending the artificial boundaries of a magnanimous and enlightened people, it bears its rich blessings across continents, and seas, and oceans, to nations and people in the far distant portions of the earth, spreading intelligence, virtue, joy and gladness in its course. From the splendid city of Paris, it comes across the broad waters, and wins its way to the mountains and vales of Maine, because the elements of immortal mind are there—because little children and youth are there—because the future arbiters of our young and vigorous state are there,—destined, we hope, like our own aurora borealis, to throw a bright radiance over the northern portions of our new and beloved country.

The blessings of our thousands of children await you—the thanks of our warm and manly hearts attend you—the crown of glory, which even many kings might covert, that of liberal, enlightened, universal philanthropy, is yours.

May your life be rich in years and in happiness, as it is in works of beneficence; works, whose benign influence future generations will enjoy,—and your expanded heart, abounding in love to your kind, bear into a future state of existence its happy and everlasting rewards.

Permit the expression of an ardent hope on our part, that the work of national interchanges, so auspiciously commenced through the unwearied and successful labors of the worthy and honorable Mr. Vattemare, may be continued, till "knowledge shall cover the earth, as the waters do the sea"—till we can all feel, as brethren of one common family—children of one common Father,—in-

spired with one hope, active in one work, as the distinguishing glory of human character, love to God, and love to man.

With sentiments of high consideration and respect, I am your obedient servant,

STEPHEN EMERY,

*Chairman of the Board of Education of the State of Maine.*

AT THE STATE HOUSE,
Augusta, July 24th, 1847.

# MESSAGE AND COMMUNICATION.

*To the members of the Senate*
*and House of Representatives:*

I herewith transmit a communication received this day, from Mons. Alexandre Vattemare, agent for the State of Maine, for the purpose of international literary and scientific exchanges.

JOHN W. DANA.

COUNCIL CHAMBER,
July 31, 1847.

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*To the Governor of the State of Maine:*

SIR:—Allow me on leaving the capitol of Maine, to express to yourself and the executive council, to the legislature and citizens of your state generally, my grateful acknowledgements for the courtesy and kindness with which they have welcomed me as the humble advocate and exponent of a system which has received the sanction and cordial commendation of the moral and intellectual, of the good and the great in two hemispheres, but which has nowhere met with a more cheerful, prompt, and efficient co-operation than in Maine, which was the first state in the Union to give the system of international exchange, effectual aid.

In 1844 your legislature appropriated the sum of three hundred dollars towards defraying the expenses of the agency of exchanges between Europe and America in which I am engaged, which appropriation has been continued annually to the present time. This, with such other sums as have been necessary for the payment of freights, and also liberal sums for my own personal expenses, have been promptly and enthusiastically voted without any solicitation on my part.

This exhibition of liberality on the part of your government, and of friendly feeling on the part of all your citizens, by whom I have been entertained in the most hospitable manner, has laid me under obligations and awakened sentiments of gratitude on my part which I am unable to find language to express.

I desire also to express my sincere thanks to the joint committee of the two houses of your legislature for the very flattering terms in which they have been pleased to notice my efforts to establish a system of international exchanges. In the report and resolves presented by them to your legislature, they recommend the re-publication of the instructions by the professors and administrators of the museum of natural history, which I published in my account of the movement of international exchanges between France and America, and authorize the secretary of state to put at my disposal all the superfluous volumes now in the State Library.

I also congratulate your state on the appointment of a state naturalist, and cannot doubt that the greatest advantages will be derived from his labors both to the state and to the system of scientific intercourse with other countries.

The letter of Hon. Stephen Emery, chairman of the board of education, to the secretary of public instruction in France, will be duly appreciated by the minister of that department.

I am happy to inform your excellency that by the active co-operation of the secretary of state, librarian, and several officers of the legislature, we have been able to form out of the superfluous works in the State Library, a collection of more than one thousand volumes of legislative documents, historical and political works, maps, &c., published within the state, or in other parts of the American union, which will be held in the highest estimation in Europe, and which will be presented in the name of your state, to the legislative chambers of France, the several ministerial departments, and to the city of Paris.

I trust, sir, that the returns which I shall have the honor of transmitting, will be fully adequate to the magnitude of this donation, and that the fraternal feeling which has been so strongly manifested here will be fully reciprocated by such European nations as have or may hereafter adopt the principles of this intellectual union.

The enlightened and generous policy of Maine presents an example worthy the imitation of other countries, and cannot fail to give the world an exalted idea of the intelligence and hospitality of her citizens and of their ardent love of knowledge and their desire for its general diffusion.

From what has already been done by Maine the world will judge, what such a people, actuated by such principles, will hereafter accomplish in this great enterprise.

As a slight token of my regard to yourself personally,

and to the citizens of your state for their kindness to me, permit me to tender through you to the State of Maine, my "ALBUM COSMOPOLITE," to be deposited in the public library of the state.

In conclusion, permit me to express the hope that the blessings of that all-wise Being who controls the destinies of men and of nations, may be long continued to the enlightened and hospitable people and rulers of your state, and to yourself personally.

I have the honor to be,

Your excellency's ob't serv't,

ALEXANDRE VATTEMARE.