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between France and North America from January 1845 to May, 1846

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from January 1845 to May, 1846

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*** START OF THE PROJECT GUTENBERG EBOOK MOVEMENT OF THE INTERNATIONAL
LITERARY EXCHANGES, BETWEEN FRANCE AND NORTH AMERICA FROM JANUARY 1845 TO
MAY, 1846 ***

Note de transcription: La ponctuation et les erreurs clairement introduites par le typographe ont   t   corrig  es. Cependant, le texte anglais a   t     crit par des personnes dont la langue maternelle   tait le fran  ais et leurs erreurs d'orthographe—et il y en a beaucoup—ont   t   conserv  es.

La table de mati  res a   t   cr  e  e pour ce livre   lectronique et ne figure pas dans le texte d'origine.

Transcriber's note: Punctuation and obvious printer errors have been repaired. However, the English text was written by people whose native language was French and their spelling mistakes —and there are a great many—have been preserved.

The table of contents was created for this eBook and does not appear in in the original text.

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MOVEMENT
OF THE
INTERNATIONAL LITTERARY EXCHANGES,
BETWEEN
FRANCE AND NORTH AMERICA,
From January, 1845, to May, 1846.
WITH INSTRUCTIONS FOR
COLLECTING, PREPARING, AND FORWARDING
OBJECTS OF NATURAL HISTORY

Written by the Professors Administrators of the Museum of natural History at Paris.

AND INSTRUCTIONS RELATIVE TO
ANTHROPOLOGY AND ZOOLOGY,
BY
M. ISIDORE GEOFFROY St-HILAIRE,

(Both series translated by an American Lady.)

PUBLISHED BY REQUEST.

PARIS:

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1846.

INTRODUCTION.

In the month of January last, I received the following letter:

Paris, December 24th, 1845.

MONSIEUR ALEXANDRE VATTEMARE,

Sir,

The undersigned young men, citizens of the United States of America, now in Paris, have heard so much about the successful realisation of your scheme of international exchanges between France and their

native land, that they are induced to take the liberty of requesting from you a narration of the results of your indefatigable exertions in the cause of science during the past twelve months. They avail themselves of the occasion to testify their gratitude for your desinterested toil and the high respect with which they have the honor to subscribe themselves,

Your very obedient and humble servants,

BENJ. PERLEY POORE, of Massachusetts.
W. C. ALLAN, of Kentucky.
F. S. AINSWORTH, M. D., of Massachusetts.
J. HUNT, of Massachusetts.
BENJ. APTHORP GOULD, of Massachusetts.
EDWARD MONROE, of New-York.
JAMES M. HOPPIN, of Rhode-Island.
GEO. H. HALL, of North-Carolina.
BENJ. CHAMPNEY, of Massachusetts.
HENRY WILLARD, of Massachusetts.
W. J. PARKERSON, of Massachusetts.
H. H. J. GIBSON, of New-York.
SAMUEL WANSLOW, New-York.
GEO. C. MASON, Rhode-Island.
JNO. C. MARTIN, New-York.
FLELCHER DERBY, New-York.
J. SUMNER, Massachusetts.
HENDERSON POPE, So. Carolina.
J.-S. HARRIS, Mississippi.
THOMAS DUSTIN, Indiana.
E. HARTSHORN, Pennsylvania.
JOHN S. MILLER, Pennsylvania.
J. C. CROSS, Kentucky.
NORWOOD PENROSE, New-Jersey.
MORTON STILLE, Pennsylvania.
GEO. CATLIN, New-York.

Considering myself highly honored by this kind invitation, I felt it necessary to endeavour at once to gratify a desire expressed in such flattering terms.

But, after mature reflection, I resolved to confine myself to the publication of official documents; and it was again necessary to choose from these on account of my limits. I have thus been prevented from publishing letters of the honorable president of the Court of accounts; the director of the King's library; the secretary of the society for the encouragement of silk culture; the president of the Royal academy of Rouen; the perpetual secretaries of the Royal and central agricultural society; of the academy of science, of the academy of moral and political science. All these letters were accompanied by documents and books which have been faithfully transmitted to their respective destinations in the United States.

It can be easily understood, that, obliged even to reduce the number of documents which each testified to the positive results of the system of exchanges, I have entirely omitted those which merely contain promises. In the present state of things, I can only with propriety present the public with accomplished facts.

Why should I add any reflection to these authentic documents which I publish? It does not become me to tell the care and anxiety which the already acquired results have cost me. As for the kindness and liberality of which so many proofs have been given me both in France and America, it is visible enough through this publication. If, on this occasion, I express my unbounded gratitude, I cannot nevertheless forget that these favors have been granted less to my exertions than in consequence of the hopes thereby created, and the ends foreseen.

I hope that this pamphlet will not be without fruit. From what has been done, we can judge of what may be done, and inspired by the confidence imparted by the success of the three past years, I confidently trust that these facts will give the system of exchange a new impulse.

For this reason, I have determined to conclude the publication by the instructions prepared by the administrative professors of the Museum of natural history. Our American Brethren will be kind enough to follow the advice of these literati in prosecuting their researches, and sending their fruits.

I beg leave to recommend them to the particular attention of those societies and gentlemen in the new world who make natural history a special study.

The French and English languages being so familiar to the two nations, I thought it better to keep the following Documents in the language they were writt, fearing they might lose their originalety by being translated.

Paris, may 1846.

A. VATTEMARE.

OF THE
SYSTEM OF INTERNATIONAL LITERARY EXCHANGES
BETWEEN
FRANCE AND NORTH AMERICA.

EXTRACT *from the* JOURNAL DE L'INSTRUCTION PUBLIQUE (March 4. 1846.) (*Published under the auspices of the Department of public instruction.*)

Nos lecteurs savent que M. le Ministre de l'instruction publique a porté au budget soumis en ce moment à l'examen de la Chambre, une somme de 3,000 francs destinée à acquitter les frais auxquels donnera lieu le système d'échange de livres commencé par l'entremise de M. Vattemare entre la France et les pays étrangers.

La lettre suivante, adressée par M. Alexandre Vattemare à M. le Ministre, est une histoire abrégée mais complète du système d'échange de livres, d'objets d'art et d'histoire naturelle entre les nations jusqu'au 7 août 1845. Nous livrons les faits qu'elle révèle à l'appréciation de nos lecteurs. Nous devons ajouter seulement que, depuis cette époque, les États de New-York, de la Virginie, de l'Indiana, de l'Illinois, de Rhode-Island, le gouvernement du Canada ont fait à M. Vattemare des envois qui ont été répartis entre les diverses administrations et les établissements scientifiques de Paris; en sorte qu'il faut aujourd'hui porter le mouvement des échanges à plus de 7,000 volumes.

Nous savons de plus qu'un savant américain, M. Jewett, récemment arrivé d'Allemagne, a affirmé à M. Vattemare qu'il a vu tout préparé pour les échanges à Dresde, à Munich, à Berlin et à Vienne; que les bibliothécaires de ces villes lui ont parlé des promesses du système dont ils attendent impatiemment la réalisation.

A Son Excellence M. le comte de Salvandy, Ministre de l'instruction publique.

En 1694, on échangea les livres doubles de la Bibliothèque royale contre les livres nouveaux qui s'imprimaient dans les pays étrangers. Cette sorte de commerce autorisé par les ordres exprès du roi, et qui dura quelques années, ne laissa pas que de fournir une assez grande quantité de bons livres, surtout d'Angleterre et d'Allemagne.

En 1697, le P. Bouvet apporta 149 livres chinois en échange desquels le roi donna le recueil de toutes ses estampes.

(Essai historique sur la Biblioth. du Roi, p. 67.)

Colbert fit faire des copies de manuscrits pour les échanges. C'est aussi par les ordres de Colbert qu'on fit un état des livres doubles susceptibles d'être échangés contre d'autres qu'on ne possédait pas.

(PAULIN, PARIS, les Manuscrits franç. de la Bibl. du Roi, p. 1.)

Monsieur le Ministre,

Autorisé par les exemples que je viens de citer, dans mes démarches pour établir entre la France et les nations civilisées des deux mondes des relations régulières et permanentes d'échange de livres, d'objets d'arts et d'histoire naturelle, je n'entreprendrai pas de développer ce que j'appellerai la théorie de mon système. Je parlerai seulement des faits. Vous n'avez pas besoin d'un commentaire des actes de Colbert et de Louis XIV, et je n'ai pas besoin auprès de vous d'apologie. Ce que j'aurais l'honneur de vous dire, vous le savez déjà; vous l'avez vu dans les textes des *Manuscrits français* et de l'*Essai historique*. Je veux être ménager d'un temps que vous employez si utilement pour l'éducation de la jeunesse et pour l'avancement des lettres.

Permettez-moi, Monsieur le Ministre, de vous donner d'abord un aperçu des doubles qui existent dans quelques bibliothèques de l'étranger et de la France. C'est un essai de statistique qui fera comprendre, mieux que tous les raisonnements, les profits que l'on doit attendre des échanges. La bibliothèque de Munich a 200,000 doubles; celle d'Iéna, 12,000; celle de Saint-Pétersbourg, 54,000; à Vienne, plus de 30,000 doubles, parmi lesquels un grand nombre d'incunables, sont enfouis dans des magasins. A Vienne encore, 25,000 doubles encombrant la section d'entomologie du musée brésilien. Breslau possède l'un des plus précieux manuscrits de Froissart. On trouve à Munich le cinquième volume du roman des *Quatre Fils Aymon* dont les quatre premiers sont à la bibliothèque de l'Arsenal; et à Bruxelles, dans la bibliothèque de Bourgogne, des doubles de manuscrits précieux pour notre histoire. En France, la bibliothèque de Metz contient plus de 500 doubles; celle de Douai, 250; celle de Colmar, 100; des matériaux importants pour l'histoire de diverses villes sont réunis dans la bibliothèque d'Aix, assez indigente sur sa propre histoire: et ainsi Lyon, Arles, Nantes sont privés de documents précieux pour leurs anciennes annales. Les archives de la préfecture de Dijon renferment des titres et des chartes du duché de Savoie, en échange desquels le roi de Sardaigne nous donnerait tout ce que nous voudrions.

J'avais reconnu cet état de choses pour l'Allemagne, pendant les divers voyages que j'ai faits dans ce pays. J'en avais entretenu des savants, des hommes d'État, les rois eux-mêmes. Voici ce que m'écrivait à cette occasion M. P. Lichtenthaler, directeur de la bibliothèque de Munich, le 22 janvier 1833.

«Vous vous souviendrez que dans nos entretiens je vous ai aussi parlé de nos doubles dont nous gardons une immense quantité. Ne vous serait-il pas possible, par vos relations à Paris, d'engager l'administrateur des beaux-arts à entrer en échange avec notre bibliothèque?»

Le 6 décembre de la même année, M. le comte Maurice de Dietrichstein, directeur général du musée à Vienne, m'adressait une lettre dont j'extrais le passage suivant:

«Soyez sûr que je ne négligerai ni le catalogue des doubles ni celui des ouvrages dépareillés de la grande bibliothèque impériale.»

«Le plan que vous m'avez communiqué de créer un système d'échange de doubles, entre les différents cabinets de l'Europe mérite la plus grande attention,» m'écrivait le 20 janvier 1834 M. le comte de Brühl, intendant général des musées du royaume de Prusse, «Soyez assuré de l'empressement que je mettrai à entrer dans vos vues à cet égard aussitôt que l'établissement des médailles du musée sera assez avancé pour permettre de reconnaître l'effectif des doubles existant dans les différentes parties de l'Institut.»

D'autres lettres d'adhésions et d'encouragements m'ont été écrites, le 1^{er} août 1834, par M. le comte de Benkendorff, au nom de l'empereur de Russie; en 1834 encore, par M. de Hauh, au nom du roi de Danemark; le 13 janvier 1837, par M. le comte d'Appony, ambassadeur d'Autriche; les 16 et 19 mai 1838, par MM. Spring Rice et Poulett Thompson, ministres d'Angleterre; le 9 mars 1839, par M. le comte de Lowenhjelm, ambassadeur de Suède.

Il résulte de cette correspondance, dont je serais heureux de mettre les originaux sous les yeux de Votre Excellence, Monsieur le Ministre, que partout mes ouvertures ont été accueillies avec empressement; qu'en Bavière et en Autriche il a été donné à mon plan un commencement d'exécution, c'est-à-dire qu'on s'est préparé à entrer en échange aussitôt qu'il conviendra à la France de consentir à ces relations de mutuelle bienveillance.

Je ne vous ai parlé que des assurances officielles de concours qui m'ont été adressées. J'aurais pu y ajouter les nombreux témoignages de sympathie que j'ai reçus de la part des écrivains, des savants, des artistes les plus illustres; mais j'aurais été trop long. Je suis prêt à vous soumettre à cet égard toutes les justifications que vous pourrez désirer.

Dès 1835, j'étais revenu en France une première fois, et je m'étais empressé d'écrire à M. le duc de Broglie, alors ministre des affaires étrangères, au nom duquel il me fut répondu le 12 juin:

«L'utilité des travaux entrepris par M. Vattemare pour faciliter les échanges ne paraît point contestable; et le ministre des affaires étrangères saisira la plus prochaine occasion pour entretenir son collègue le Ministre de l'instruction publique du plan formé par M. Vattemare.»

M. Pelet de la Lozère, ministre de l'instruction publique en 1836, m'écrivait:

«En ce qui concerne ce projet, il est impossible que le gouvernement n'en approuve entièrement la conception et qu'il ne fasse en même temps tout ce qui dépendra de lui pour en favoriser l'exécution. L'intérêt avec lequel les deux chambres et l'administration se sont empressés de l'accueillir et de s'en occuper ne saurait vous laisser de doute à cet égard. Il est un sûr garant de l'importance que le gouvernement lui attribue et des résultats qu'il en attend.»

L'intérêt des deux chambres, dont il est parlé dans cette lettre de M. Pelet de la Lozère, s'était manifesté par une double décision prise le 6 mars par la chambre des députés, par la chambre des pairs, le 26. J'avais, au mois de novembre 1836, adressé aux chambres une pétition dont les rapporteurs furent, à la chambre des députés, M. de Guizard, au Luxembourg, M. le duc de Fezensac. M. de Guizard avait dit dans son rapport que «la commission ne pouvait méconnaître les résultats importants qu'on devait raisonnablement se promettre de l'application du système proposé; qu'elle y voyait l'avantage immense pour nos bibliothèques, si pauvres en ouvrages étrangers, de se compléter sous ce rapport au moyen de leurs doubles; et que, se bornât-on à faire l'application de ces idées aux établissements nationaux, il y aurait encore la promesse certaine d'une vie nouvelle pour nos bibliothèques.» Le rapport de M. le duc de Fezensac n'avait pas été moins favorable. «On peut compter, avait dit le noble rapporteur, sur le concours loyal et éclairé des gouvernements étrangers. M. Vattemare en a reçu plus d'une assurance; et déjà des offres particulières d'échanges sont arrivées à la Bibliothèque du roi. Le moment paraît favorable pour s'occuper sérieusement de ce travail. On doit en espérer d'heureux résultats auxquels M. Vattemare aura eu la gloire d'attacher son nom.»

Et les deux chambres avaient, à l'unanimité de leurs membres présents, renvoyé ma pétition à M. le Ministre de l'instruction publique.

Cependant les affaires de l'État, les événements de la politique détournèrent de la question des échanges l'attention du gouvernement. Après trois ans de nouveaux travaux et de nouvelles sollicitations, je me décidai à provoquer encore une fois le concours des chambres législatives. Je présentai une seconde pétition qui, comme la première, fut renvoyée au Ministre de l'instruction publique avec l'assentiment du parlement tout entier. Je ne citerai ici, pour abrégé, aucun extrait ni des rapports faits au nom de la commission des deux chambres, ni de la lettre de M. Villemain en date du 31 août 1839, ni de celle de M. Duchâtel en date du 14 août de la même année. Qu'il me suffise de dire à Votre Excellence que c'étaient les mêmes félicitations, les mêmes encouragements, les mêmes promesses.

C'est alors qu'un honorable député, que j'avais eu l'honneur d'entretenir quelquefois de mes idées, de mes travaux, de mes espérances, me conseilla d'aller aux États-Unis pour y préparer le terrain, comme je l'avais fait en Allemagne, en Angleterre, en Russie. La tâche était laborieuse, difficile; je ne me le dissimulai pas; mais les résultats devaient être féconds. Si l'Amérique a peu de livres à nous donner, elle peut nous fournir un très-grand nombre d'admirables échantillons pour nos collections de minéralogie, d'entomologie, de botanique, etc. Elle s'est d'ailleurs occupée avec succès de l'application des sciences et des arts à l'industrie. C'est, en un mot, une nature et une civilisation différentes des

nôtres. Je partis.

Embarqué au Havre le 20 octobre 1839, j'arrivai à New-York le 29 novembre. En Europe j'avais recueilli le suffrage des savants, des publicistes, des hommes d'État, un à un, dans la solitude et la paix du cabinet. Je m'adressais à des esprits éclairés, à des intelligences exercées à méditer sur les avantages de l'étude et sur les voies de la civilisation. En Amérique j'ai eu affaire à des corps législatifs, à des assemblées populaires. J'ai développé mon système dans l'agitation contenue des meetings.

Je ne veux vous exposer, Monsieur le Ministre, que les résultats dont j'ai entre les mains les preuves authentiques, officielles. Je n'essaierai donc pas de vous montrer la jeunesse de New-York, de Boston, de Baltimore, du Canada, s'associant puissamment à mes efforts par des résolutions délibérées en assemblée publique; pourtant vous seriez touché, j'en suis certain, de la voir à Montréal voter une messe solennelle avec *Te Deum* d'actions de grâces. Je ne vous dirai pas davantage que toutes les opinions, tous les cultes se sont réunis pour m'entendre, pour me seconder, pour me soutenir; que des associations ont été formées dans l'unique but d'appliquer mes idées; que des établissements scientifiques ont été créés. Plus tard vous voudrez peut-être vous faire rendre compte des faits que j'ai négligés pour être plus bref. Je serai toujours à vos ordres, Monsieur le Ministre.

C'est l'État de la Louisiane qui, le premier, a consacré mon système par une mesure législative. Le 26 mars 1840, le sénat décidait «qu'une somme de 3,000 piastres serait mise à la disposition du gouverneur, du secrétaire d'État et de trois personnes nommées annuellement par le gouverneur et le sénat, afin d'être employée par eux ou par une majorité d'entre eux à procurer les curiosités que renferme la Louisiane, tant en objets d'art que de science ou autres, pour établir avec les musées et les bibliothèques de l'Europe les premières communications et les premières opérations d'échange.»

Quelques mois après, à l'autre extrémité de l'Union, l'État du Maine suivait l'exemple donné par la Louisiane. La législature votait cinquante exemplaires de chaque volume des lois, résolutions et documents publics, et 1,000 dollars (5,000 fr.) qui devaient être employés à recueillir des spécimens d'histoire naturelle et des productions des arts utiles pour les échanger, sous la direction du gouverneur.

Le bill du congrès américain a été rendu les 10 et 17 juillet 1840. Le voici textuellement: 1° Le bibliothécaire, avec l'autorisation du comité de la bibliothèque, pourra échanger tous les doubles qui se trouvent dans la bibliothèque; 2° il est autorisé également à échanger les documents; 3° à compter de ce jour, cinquante exemplaires de chaque volume des documents, publiés par ordre des deux chambres, seront imprimés et reliés pour être échangés avec les puissances étrangères.

Au Canada, par une loi du conseil spécial, approuvée par le gouverneur général, le 6 février 1841, 50,000 livres sterling (1,250,000 fr.) ont été votées pour subvenir aux frais de construction d'un édifice dans lequel se trouveraient réunis un musée, une bibliothèque, un cabinet d'histoire naturelle, une grande salle pour les réunions publiques, et dans laquelle se tiendraient les séances des Sociétés scientifiques, formant ainsi un Institut, d'après les plans suggérés par M. Alexandre Vattemare.

Avec ces bills et ces résolutions, dont des copies authentiques m'ont été remises officiellement, j'ai rapporté en France plus de 1,200 volumes, des cartes géographiques, des herbiers, et un morceau de fer oxydulé des montagnes du Missouri, que j'ai distribués entre les divers ministères, les bibliothèques des deux chambres, de la ville de Paris, de l'Académie des sciences, etc. M. Dufrénoy m'a fait l'honneur de m'écrire au sujet du morceau de fer que j'avais offert à l'École des mines: «Je vous remercie au nom de l'École de ce magnifique échantillon. Malgré ses dimensions presque gigantesques, plus de 0,66 de diamètre, il est pur dans toutes ses parties..... Outre son intérêt sous le rapport minéralogique, l'envoi de M. le sénateur Lynn est précieux pour nous parce qu'il commence le système d'échange que vous avez cherché à établir entre toutes les nations de l'ancien et du nouveau continent, et qui peut seul permettre aux collections d'histoire naturelle de se compléter.»

De ce moment, en effet, Monsieur le Ministre, le système d'échange était établi. L'Amérique était venue au-devant de la France; et la France l'avait accueillie avec empressement. Quoique abandonné à mes propres forces, j'ai entretenu avec quelques succès les relations que j'avais eu le bonheur de nouer entre les deux nations. De l'époque de mon retour à Paris jusqu'à présent, il y a eu un mouvement d'échange qui peut se calculer de la manière suivante:

6,000 volumes,
316 cartes géographiques,
240 gravures,
150 médailles,
2 plans en relief,
5 caisses de minéraux,
Des herbiers.

Une personne, que sa position m'autorise à croire bien informée, m'a affirmé que le commerce de la librairie avait ressenti utilement l'influence de ces échanges, qu'il s'en était accru d'une manière notable. Je n'en sais rien; mais il m'a semblé que je devais vous soumettre cette observation dont je n'ai pas eu le temps de chercher la preuve, et qu'ainsi je ne puis garantir. Toutefois, j'ajouterai qu'elle a pour moi un grand caractère de probabilité, et que je l'avais depuis longtemps pressentie.

Les ministères et les administrations publiques sont entrés pour la plus grande part dans ce mouvement; mais il est de mon devoir de dire que ni écrivain, ni publiciste, ni artiste ne m'ont refusé leur concours; et parmi ceux qui m'ont encouragé par leurs présents, je compte les membres les plus illustres des deux chambres législatives.

Dans la séance du 21 mai 1842, la chambre des députés, sur la proposition de son bibliothécaire, a ajouté à son budget une somme de 3,000 fr. pour les échanges; et le 14 novembre de la même année, M. Carrey, bibliothécaire de la chambre des pairs, m'a annoncé que M. le grand référendaire lui avait

ordonné de tenir à ma disposition 120 volumes de documents émanés de la pairie pour le sénat des États-Unis. Par plusieurs délibérations, dont la première est du 21 décembre 1842, le conseil municipal de la ville de Paris est entré en relation d'échanges avec les principales villes de l'Union américaine, New-York, Boston, Baltimore, Washington, etc.

De leur côté les États du Maine et du Massachusetts ont, par des bills en date du 22 mars 1844 et 7 février 1845, voté chacun une somme de 300 dollars (1,500 fr.) pour les frais des échanges; et un acte de la législature du Michigan (12 mars 1844) ordonne que l'ingénieur en chef de l'État recherche les doubles qui existent dans les collections d'histoire naturelle de l'Université, qui sont sous sa direction, et qu'il en fasse un rapport dans la plus prochaine session de la législature.

Ce ne sont là, Monsieur le Ministre, que les faits les plus saillants qui se sont produits dans ces dernières années et depuis mon retour d'Amérique. Je pourrais en soumettre beaucoup d'autres à l'appréciation de Votre Excellence; mais j'en ai dit assez pour justifier votre bienveillant intérêt si vous daignez me l'accorder, et je craindrais d'abuser du temps que vous voulez bien me donner si j'insistais davantage.

Vous voyez, Monsieur le Ministre, que l'impulsion est donnée; que le mouvement des échanges est accepté, encouragé par le zèle des particuliers et par le concours de la puissance publique; que le système d'échange tend à devenir ce qu'il doit être, un lien intellectuel entre les nations, un instrument de civilisation et de progrès. C'est aujourd'hui plus qu'une idée, une théorie; c'est un fait. On peut en mesurer dès à présent la portée pour l'instruction des peuples, pour l'avancement des sciences, pour le bien de l'humanité. Croyez, Monsieur le Ministre, que si tant de personnages éminents, tant de pouvoirs publics se sont montrés accessibles à mes sollicitations, c'est qu'il y a une sorte de conscience universelle qui s'attache à l'accomplissement de mon œuvre comme à une espérance de grandeur et de gloire pour les nations.

J'ai l'honneur d'être avec le plus profond respect,
Monsieur le Ministre,
De Votre Excellence,
Le très-humble et très-obéissant serviteur,
ALEXANDRE VATTEMARE.

Pièces jointes à la pétition de M. Vattemare.

Traduction du Document officiel qui accompagnait les 64 volumes présentés le 19 février à S. E. M. le Ministre de l'instruction publique au nom de l'État de l'Indiana.

Résolution adoptée par les deux chambres législatives de l'État d'Indiana, relative aux échanges internationaux.

Attendu qu'un système d'échange scientifique et littéraire entre les nations a été conçu par Alexandre Vattemare, citoyen distingué en France, et réalisé avec succès par des échanges de précieux ouvrages, cartes, objets d'histoire naturelle, etc., faits entre la France et les États-Unis;

Attendu qu'un tel système de bon vouloir et de courtoisie entre les nations ne peut que servir les intérêts de la religion, de la morale, de la littérature et des arts, et qu'il tend à faire de toutes les nations civilisées un corps de travailleurs attentifs à leur avancement mutuel; pour ces causes:

Il est résolu par l'assemblée générale de l'État d'Indiana que le secrétaire d'État est par les présentes autorisé et invité à faire rechercher dans les archives publiques et relier d'une manière convenable et durable, huit collections de toutes les lois publiques et particulières, résolutions et documents législatifs, publiés par ordre de l'État, ainsi que des exemplaires des rapports de Blackfort, du rapport de l'ingénieur des mines de l'État et de l'histoire d'Indiana et de les transmettre audit sieur Alexandre Vattemare pour être distribués par lui ainsi qu'il suit: 1^o aux chambres législatives de France; 2^o au ministère de l'instruction publique; 3^o au ministère de la justice; 4^o au ministère de l'intérieur; 5^o au ministère de la marine; 6^o au ministère de l'agriculture et du commerce; 7^o au conseil municipal de la ville de Paris; 8^o à l'Académie des sciences morales et politiques. Chacune desquelles collections devra être accompagnée d'une copie, dûment certifiée, de cette résolution.

Le secrétaire d'État est, en outre, invité par les présentes à transmettre annuellement, ainsi qu'il a été ordonné ci-dessus, toutes les lois publiques et particulières, documents, etc., jusqu'à ce qu'il en soit ordonné autrement par la législature; et les frais nécessaires pour la réalisation des échanges seront pris sur le contingent et ordonnancés par l'autorité légale.

A.-L. ROBINSON,
Président de la chambre des représentants.

Approuvé
15 janvier 1844
JAMES WHITE.

JESSE D. BRIGHT,
Président du sénat.

Je soussigné, John H. Thompson, secrétaire d'État, certifie que cette copie de la résolution ci-dessus est en tout conforme à l'original inscrit sur le registre conservé dans ce bureau. En foi de quoi je l'ai signé et y ai fait apposer le sceau de l'État.

Fait à Indianapolis, le premier jour d'août de l'an de Notre Seigneur 1844, la trentième année de l'État et de l'indépendance des États-Unis la soixante-dixième.

JOHN H. THOMPSON,
Secrétaire d'État.

Lettre de lord Sydenham (Poulett Thomson), ministre du commerce d'Angleterre et gouverneur général du Canada.

Maison du gouvernement, 13 décembre 1840.

Monsieur,

Ayant déjà eu l'occasion, en Europe, de vous témoigner l'admiration que j'éprouvais, tant pour votre système d'échange que pour le zèle que vous mettez à son perfectionnement, il est presque superflu de vous le répéter; mais je ne puis me refuser le plaisir de vous en renouveler l'assurance depuis que j'ai vu l'extension que vous lui avez donnée en Amérique, et surtout au Canada.

Je ne voyais autrefois dans vos travaux qu'un moyen puissant d'augmenter les richesses littéraires des divers pays, par l'échange de leur superflu; mais je reconnais maintenant un but encore plus noble et plus utile: vous servir du terrain neutre des sciences et des arts pour faire taire les haines de race ou de parti, et unir, par un lien commun, les hommes estimables que des différences politiques ou personnelles ont trop longtemps séparés.

Veillez croire, Monsieur, que mes vœux les plus sincères accompagnent vos efforts, et que je serais flatté de pouvoir leur prêter mon faible appui. Votre triomphe sera celui de l'humanité.

Agréez l'assurance de mon sincère dévouement,

SYDENHAM.

Traduction d'une lettre de M. T. W. Murdoch, secrétaire en chef du gouvernement du Canada à M. Vattemare.

Montréal, 19 décembre 1840.

Monsieur,

Je reçois l'ordre du gouverneur général de vous informer que, dans le but de favoriser le projet pour l'accomplissement duquel vous êtes venu dans ce pays, c'est-à-dire l'échange, parmi toutes les nations, des publications d'un intérêt général, Son Excellence a ordonné au greffier du conseil spécial de mettre à votre disposition un exemplaire complet de tous les journaux du conseil législatif et de la chambre d'assemblée de cette province, de même que tout autre document public dont il aurait le double. Ces documents, destinés par son Excellence à être présentés à la chambre des députés et des pairs de France, vous seront adressés où vous le désirerez, et au moment que vous jugerez le plus convenable; et Son Excellence espère qu'en échange vous pourrez obtenir pour ce pays un exemplaire des documents publiés par le gouvernement français. *La commune origine des lois de ce pays et du Bas-Canada, ainsi que la similitude de langage existant entre les Français et une grande partie des habitants de cette province, rendront un tel échange intéressant et avantageux.*

Traduction d'une lettre de M. A. T. Holmes, président de la Société d'histoire naturelle de Montréal.

22 janvier 1841.

Monsieur,

Officiellement constitué comme Président de la Société d'histoire naturelle, l'organe de la partie scientifique de notre population, je ne puis vous laisser partir pour les pays où votre présence se fait désirer, sans vous exprimer notre reconnaissance pour les bienfaits immenses dont vous sont redevables cette ville et ce pays. Vous êtes venu parmi nous étranger, dont le nom était connu, il est vrai, lié qu'il était à cette grande idée d'échanges internationaux, système de peu d'intérêt pour nous, qui étions trop insignifiants pour y participer. La surprise et l'incrédulité, quant au succès, furent donc les premières émotions soulevées par votre proposition de rendre le Canada partie intégrante de cette grande union nationale que vous avez en partie établie dans l'ancien monde, et dans laquelle vous vous efforcez, avec un zèle philanthropique et désintéressé, de faire entrer le nouveau. Ces sentiments ont fait place à l'admiration, lorsque, après avoir fait connaître vos plans, vous avez commencé avec énergie et persévérance à engager la coopération des corps publics et des individus, et à combattre les obstacles que les circonstances malheureuses dans lesquelles se trouve ce pays ont semés sur votre route. Vous avez enfin réussi, et, en nous quittant, vous emportez la preuve de l'utilité de votre visite et de votre résidence prolongée. Vos ardents désirs pour notre bien vont être satisfaits, et nous espérons voir bientôt s'élever dans notre ville un monument qui, sans porter le nom de Vattemare, sera désigné comme son œuvre aux générations futures. Vous aurez ainsi créé les moyens d'unir le Canada avec les autres nations dans le magnifique et bienveillant système d'échanges internationaux, plan qui ne doit pas seulement être considéré sous le point de vue commercial, mais comme un grand levier moral qui resserrera les liens qui unissent les différentes nations de la terre en une seule famille. *Le Canada* ne manque, sous aucun rapport, des richesses nécessaires pour venir au-devant des offres de nos frères transatlantiques; car, quoiqu'il ne possède aucun des trésors fruits d'une longue civilisation, comme des antiquités, des ouvrages de littérature et d'arts, *les productions naturelles de nos pays*, estimées comme elles le sont en Europe, et qui ne demandent que de l'industrie pour être rassemblées, seraient cependant tout à fait dignes d'être échangées contre les livres, modèles et spécimens qui ne manqueraient pas de nous être envoyés des plus anciennes contrées. Je suis, etc.

Montréal, 23 novembre.

Monsieur,

J'ai toujours considéré le genre humain comme ne formant qu'un même corps, qui a pour membres toutes les nations du globe, et pour âme la divine Providence qui préside à tous les événements d'ici-bas. Un des grands bienfaits du christianisme est d'unir intimement tous ces membres dispersés par toute la terre; et si les passions humaines ne venaient pas rompre ces liens sacrés que la religion tend sans cesse à former, tous les peuples ne formeraient plus qu'un même peuple, ne seraient plus qu'une seule et même famille dont Dieu serait le père.

Toute institution qui tendra à cimenter une union aussi parfaite sera donc à mes yeux une œuvre éminemment utile; voilà pourquoi je ne puis m'empêcher de donner toute mon admiration à ce plan par lequel vous travaillez à unir toutes les nations dans une immense association de science, de lumière et d'industrie.

Par vos efforts, toutes ces richesses deviendront un trésor commun où les plus pauvres pourront puiser avec abondance. Aussi, nul doute que vous ne rencontriez de toutes parts la sympathie et le concours le plus empressé; ce sont, du moins, les sentiments qui animent à votre égard l'évêque de Montréal et son clergé.

Je prie Dieu, qui vous a déjà donné tant de succès, de vouloir bien couronner par vous cette œuvre excellente, dont toute la gloire sera à lui et le profit au genre humain. Ce sera sans doute pour vous une récompense telle que vous ne pouvez en espérer une plus grande ici bas.

J'ai l'honneur d'être, etc.

Ic., év. de Montréal.

In 1844, I addressed a memorial to the several members of the French cabinet, requesting their support; this memorial, somewhat similar to the above, to His Excellency count Salvandy, minister of public instruction, was supported by the following postscripts, from peers and deputies belonging to the several political parties.

PEERS.

Le zèle désintéressé de M. Vattemare, l'idée généreuse et grande qu'il a conçue d'établir, entre les différents États de l'Europe et de l'Amérique, un échange de livres et d'objets d'art, ont mérité et obtenu à plusieurs reprises l'intérêt de la Chambre des pairs, qui, dans sa dernière session, avait émis le vœu qu'une Commission permanente fût instituée dans le but de régulariser et de faciliter ces échanges.

Ces témoignages de haute sympathie ont été jusqu'à présent stériles. Persuadés qu'il est digne de la France d'établir ainsi la première un lien intellectuel entre les peuples des deux continents, les soussignés recommandent avec la plus vive instance la pétition de M. Vattemare.

Paris, le 25 février 1844.

MM.

Le comte DARU,
Le comte DE GRAMMONT,
C. DE VANDEUL,
M. BÉRENGER (de la Drôme),
H. PASSY,
Le baron DE MAREUIL,
C. PERRIER,
F. FAURE,
V. COUSIN,
Le lieutenant général baron DARIULE,
Le lieutenant général baron GOURGAUD,
Le duc DE FEZENSAC,
PERSIL,
Le vicomte SÉGUR-LAMOIGNON,
Le baron DE SAINT-DIDIER,
KERATRY,
Le général BAUDRAN,
Le comte BEUGNOT,
Le comte TASCHER,
Le lieutenant général DE CUBIÈRES,
LE BRUN,
Le comte DE PORTALIS,
Le baron DE BUSSIÈRE,
Le baron DE BARANTE,
Le marquis BARTH
ÉLEMY,
Le marquis D'AUDIFFRET,
Le général comte DE MONTESQUIOU,
Le baron DE VANDEUVRE,
A. prince de WAGRAM,
Le comte DUROSNEL,
Le lieutenant général baron PELET,
J.-E. GAUTIER,

DEPUTIES.

Les soussignés, bien pénétrés de l'avantage de consolider et d'étendre, au point de vue de la science, de la littérature, des arts, et aussi au profit de la civilisation, le système d'échanges établi par M. Alexandre Vattemare entre la France et les États-Unis, avec une intelligence, une persévérance et un désintéressement dignes des plus grands éloges, prennent la confiance de recommander de la manière la plus vive et la plus instante la requête ci-jointe.

Les soussignés, en prêtant leur appui à cette demande, s'associent, autant qu'il est en eux, à une grande pensée, à une belle et noble tâche dans laquelle M. Vattemare a besoin d'être encouragé et soutenu pour qu'il puisse la continuer et entreprendre, avec les divers États de l'Europe, ce qu'il a si heureusement tenté avec l'Amérique du nord.

Paris, le 28 février 1844.

MM.
BIGNON,
Le comte d'ANGEVILLE,
ARMEZ,
Le général BELLONET,
Le lieutenant général baron DE BERTHOIS,
Le baron BOISSY-D'ANGLAS,
DE CARNÉ,
CRÉMIEUX,
DALLOS,
A. DENIS,
DUGABÉ,
DUVERGIER DE HAURANNE,
DE L'ESPÉE,
DE LAFAYETTE,
G. LAFAYETTE,
LE PRÉVOST,
J. DE LASTEYRIE,
LEDRU-ROLLIN,
CHAPUYS DE MONTLAVILLE,
F. BARROT,
G. DE BEAUMONT,
BILLAULT,
AD. CHASLES,
C. CLÉMENT,
DE CORMENIN,
VIVIEN,
ESTANCELIN,
Le comte d'ETCHEGOYEN,
ÉTIENNE,
FULCHIRON,
Le comte DE GASPARIN,
E. DE GIRARDIN,
DE GOLBÉRY,
A. GOUIN,
V. GRANDIN,
Le comte d'HAUTERIVE,
Le général comte d'HOUDETOT,
LACROSSE,
Le baron LADOUCETTE,
Le vicomte DARU,
Le vicomte N. DE MONTESQUIOU,
ODILON BARROT,
C. DE RÉMUSAT,
Le comte ROGER,
SAINT-MARC-GIRARDIN,
DE SAINT-PRIEST,
L. TALABOT,
A. DE TOCQUEVILLE,
DE TRACY,
TUEUX,
J. VATOUT,
VITET,
SAINT-ALBIN.

Extract from the report on the Budget for 1847, presented april 15th 1846 to the chamber of deputies, by M. Bignon, chairman of the committee of the budget. Read and passed May 26.

CHAMBRE DES DEPUTES (Session 1846.)

CHAPITRE XIX.

Service des bibliothèques publiques, 170,223 francs.

Une dépense nouvelle de 3,000 fr. est introduite dans ce chapitre; elle couvre, sous un faible chiffre, une

question importante, celle des échanges de publications littéraires, scientifiques et artistiques avec l'étranger. Quel que soit le bénéfice que nous attendions du développement de cette pensée, nous ne vous exprimerions pas la nôtre si elle devait engager l'État dans des dépenses de quelque importance; mais, heureusement, votre commission n'éprouve aucun embarras à cet égard, car il ne peut être question que de quelques frais d'emballage et de transport. Nous ne pouvons que féliciter M. le ministre de l'instruction publique d'avoir compris tout l'avantage que pouvait recueillir le pays d'un vaste système d'échange et de chercher à en réaliser le bienfait en plaçant cette opération sous son patronage. Que d'ouvrages restent enfouis dans les dépôts publics, dans les divers ministères, aux archives des chambres législatives, qui proviennent des publications et des souscriptions, qui n'ont aucune valeur pour la France, parce que toutes les bibliothèques les possèdent, et que les collections étrangères accepteraient avec empressement et recueilleraient avec soin et réciproquement. Si nous devons en juger par quelques essais tentés avec les États-Unis, ces propositions d'échanges, étendues à tous les États civilisés, se trouvent bien accueillies, car, presque partout l'Union américaine a témoigné, par son empressement à répondre à cet appel et par sa libéralité, et nous dirons presque par sa magnificence, de l'intérêt qu'elle portait à ces communications de la pensée, qui ne peuvent que fortifier les bons rapports qui existent entre eux et nous.

Nous vous proposons d'accorder le crédit de 3,000 fr. qui vous est demandé, et d'inviter M. le ministre à donner à sa pensée tout le développement qu'elle comporte.

From the minister of public works.

27 juin 1844.

Monsieur,

J'ai reçu votre lettre, en date du mois dernier, par laquelle vous demandez, pour l'Institut national, et pour les États du Maine et du Massachusetts, en retour de divers dons faits à l'École des mines, trois exemplaires de la carte géologique de la France.

Je me fais un plaisir de vous annoncer que je viens d'inviter M. l'ingénieur en chef des mines Dufrénoy à faire préparer et à vous adresser, pour la destination indiquée dans votre lettre, trois exemplaires de la carte et du premier volume de texte, le seul qui ait paru jusqu'ici.

Recevez, etc.,

Le ministre secrétaire d'État des travaux publics,
S. DUMON.

From the same.

18 décembre 1844.

Monsieur,

En réponse à votre lettre du 3 de ce mois, je vous adresse, pour l'Institut national des États-Unis d'Amérique, un exemplaire de la médaille frappée en commémoration de la loi du 11 juin 1842, qui a classé les grandes lignes des chemins de fer du royaume.

Recevez, etc.

Le ministre des travaux publics,
S. DUMON.

From the minister of agriculture and commerce.

25 décembre 1844.

Monsieur,

J'ai reçu, par votre intermédiaire, les lettres de MM. les secrétaires d'État de la Pensylvanie et du Massachusetts, m'accusant réception des collections de la Statistique générale de France, que je leur ai adressées à votre demande.

Je m'empresse de leur envoyer deux nouveaux volumes de ce grand ouvrage; et je vous prie de prendre les précautions nécessaires pour qu'ils leur parviennent; car le petit nombre d'exemplaires de cette continuation du travail général en fait des livres rares qu'on ne pourrait remplacer.

Je suis bien aise d'apprendre, Monsieur, que les États-Unis apprécient, ainsi qu'on le fait ici, les soins nombreux et persévérants, que vous prenez pour l'échange, entre les deux pays, des travaux qui peuvent étendre le domaine des connaissances utiles à l'amélioration de la société.

Recevez, etc.

Le ministre de l'agriculture et du commerce.
Pour le ministre:
Le conseiller d'État secrétaire général,
CAMILLE PAGANEL.

From H. E. the keeper of the seals, minister of justice and religious worship.

Paris, janvier 1845.

Monsieur,

J'ai l'honneur de vous adresser, suivant la demande que vous m'en avez faite, cinq exemplaires de chacun des comptes généraux de l'administration de la justice criminelle et de la justice civile et commerciale en France pendant l'année 1843.

Ces exemplaires sont destinés l'un au congrès des États-Unis, les autres aux États de New-York, de Pensylvanie, de la Louisiane et du Missouri.

Je vous serai infiniment obligé de vouloir bien, en transmettant ces comptes, interposer vos bons offices pour me procurer les documents de même nature qui seraient recueillis et publiés dans les États de l'Union.

Recevez, etc.,

Le garde des sceaux ministre de la justice et des cultes.

Par autorisation:

Le maître des requêtes directeur,

MEILHEURAT.

From the honorable count de Rambuteau, prefect of the Seine.

Paris, le 20 février 1845.

Monsieur,

J'ai reçu avec la lettre que vous m'avez fait l'honneur de m'adresser le 17 janvier dernier, les ouvrages dont la ville de Baltimore a bien voulu faire hommage à la ville de Paris.

Suivant votre désir, j'ai mis sous les yeux du conseil municipal le présent qui lui est offert ainsi que la lettre de M. le maire de Baltimore. Les sentiments qui y sont exprimés ont été dignement appréciés et je me fais un plaisir de vous rappeler tout l'intérêt que j'attache aux témoignages de sympathie que reçoit la ville de Paris.

Recevez, etc.

From H. E. the minister of marine and the colonies.

Paris, le 22 février 1845.

Monsieur,

J'ai l'honneur de vous donner avis que, pour vous procurer des facilités dans les échanges de livres, entre les États-Unis et la France, et conformément à la demande que vous m'en avez faite, j'ai prévenu M. le commissaire général, chef de la marine au Havre, que je vous autorisais à lui adresser les ballots de livres que vous auriez à faire passer de France aux États-Unis.

M. le commissaire général m'a répondu qu'il a donné des ordres pour que ces ballots soient reçus et emmagasinés au Havre; et il s'entendra avec vous pour les expédier vers leur destination, à mesure que les occasions viendront à se présenter.

Recevez, etc.

Le vice-amiral, pair de France, secrétaire d'État de la marine et des colonies,

BARON DE MACKAU.

From the professors, administrators of the Museum of natural history.

Paris, le 28 février 1845.

Monsieur,

L'administration du muséum vous remercie des soins que vous avez bien voulu donner à la réception de deux caisses de géologie et minéralogie et d'un exemplaire de la géologie de Jackson offert au muséum par l'État du Maine.

Vous savez que trois exemplaires des archives du muséum, que M. le ministre de l'instruction publique avait bien voulu, sur notre demande, accorder à plusieurs états de l'union américaine, ont été adressés par lui immédiatement, et, à ce qu'il paraît, à d'autres établissements que ceux que nous avons indiqués. Déjà nous avons signalé cette erreur à M. le ministre et nous avons demandé qu'elle fût rectifiée, s'il était encore possible, d'après l'état des exemplaires en disponibilité au ministère. Nous n'avons pas encore reçu de réponse et nous comptons faire de nouvelles démarches à ce sujet.

On achève en ce moment l'impression des nouvelles instructions pour la récolte et la préparation des objets d'histoire naturelle. Dès qu'elle sera achevée, nous vous en adresserons quelques exemplaires pour les transmettre à vos correspondants d'Amérique.

Recevez, etc.

Les professeurs administrateurs du muséum.

Le directeur,

E. CHEVREUL.

Le secrétaire,

B. GEOFFROY SAINT-HILAIRE.

Le trésorier,

DE JUSSIEU.

From the department of war.

4 avril 1845.

Monsieur,

Je me suis empressé de donner des ordres pour que la carte des limites du Canada fût jointe à celle que le dépôt général de la guerre a déjà reçue. Veuillez agréer mes remerciements de la remise de cette carte qui m'a doublement intéressé en raison de son origine et des localités qu'elle représente.

Vous trouverez ci-joint une collection complète de toutes les cartes publiées à la fin de 1844 sur le nord de l'Afrique, qui comprend la régence de Tunis, l'Algérie et l'empire du Maroc. Je vous adresse également une de nos plus belles cartes autographiées, celle du département de la Seine-Inférieure. Vous voudrez bien envoyer ces cartes aux États-Unis d'Amérique, en les répartissant comme vous le jugerez convenable.

Recevez, etc.

Le pair de France, lieutenant général, directeur,
PELET.

From M. Dufrénoy, chief engineer, inspector of the royal school of mines.

10 août 1845.

Monsieur,

J'ai l'honneur de vous remercier des trois caisses de roches que vous avez adressées à l'École des mines de la part de l'État du Maine. Je vous prierai, en accusant réception de cet envoi, qui fait connaître la constitution géologique de cet État, de demander que les échantillons soient emballés avec plus de soin; car une partie d'entre eux s'étaient frottés les uns contre les autres et avaient perdu cette fraîcheur qui est utile pour l'examen de leur caractère extérieur; dans la circonstance présente, le dommage n'est pas considérable, attendu que ce ne sont que des roches que l'on peut retailler; mais pour des minéraux, le mal serait irréparable.

Je vous remercie aussi du rapport de M. Jackson; cet ouvrage, accompagné de son atlas, a été déposé dans la Bibliothèque de l'École des mines.

Je profiterai de cette lettre pour vous demander si vous pourriez nous procurer quelques échantillons des minéraux décrits récemment par M. Schepard, notamment le Warwickle et l'Edwarszte; dans le cas où vous pourriez le faire, je vous demanderai la permission de vous en adresser une liste.

L'École des mines est fort reconnaissante des ouvrages que vous lui avez déjà procurés; elle regarde que, grâce à votre persévérance, le système d'échange qui peut enrichir les établissements publics sans de grandes dépenses, prendra une grande extension; et vous pourrez alors vous féliciter d'avoir rendu un service important aux pays qui l'auront adopté.

Recevez, etc.

L'inspecteur de l'École,
DUFRÉNOY.

From the secretary of state from the department of the interior.

27 octobre 1845.

Monsieur,

J'ai reçu avec votre lettre du 7 de ce mois, celle qui m'a été adressée par M. le secrétaire d'État du Massachusetts pour m'accuser réception de médailles et documents émanés de mon ministère, que je vous avais remis pour cet État; j'ai reçu en même temps les publications suivantes:

1° Trois volumes contenant les rapports officiels et les lois votées par la législature du Massachusetts pendant la session de 1845.

2° Rapports scientifiques sur la géologie et l'histoire naturelle de cet État, 4 volumes in-8° et 1 volume in-4° avec cartes et planches.

3° Une carte générale du même État.

J'ai l'honneur de vous remercier de l'envoi de ces documents, ainsi que de l'avis que vous me donnez de la décision prise par l'État de Massachusetts de me faire adresser régulièrement chaque année tous ceux qui pourraient intéresser mon département. Je continuerai, de mon côté, à disposer en faveur de ce gouvernement des documents publiés par mon ministère qui seront de nature à présenter un intérêt général d'administration.

Pour le ministre de l'intérieur,
Le sous-secrétaire d'État,
A. PASSY.

From the minister of the navy and colonies.

Paris, 3 février 1846.

Monsieur,

Vous m'avez prié de mettre à votre disposition quelques exemplaires des documents publiés par la direction des colonies, afin de les distribuer entre plusieurs États de l'Union américaine que vous me désignez comme étant entrés dans la voie du système général d'échange de livres que vous vous efforcez d'introduire et de faire prévaloir parmi les nations civilisées.

Dans le désir de ne laisser échapper aucune occasion d'augmenter les bonnes relations qui existent entre la France et les États-Unis et de concourir au progrès des sciences et des lumières, j'ai l'honneur de vous annoncer que j'ai accueilli votre demande.

Je donne en conséquence l'ordre de vous envoyer six exemplaires de chacune des publications suivantes: (*Suit la liste.*)

Recevez, Monsieur, l'assurance de ma considération distinguée.

Pour le vice-amiral, pair de France, ministre secrétaire d'État de la marine et des colonies,

Le sous-secrétaire d'État,
JUBELIN.

From the minister of the interior.

Paris, le 11 février 1846.

Monsieur,

J'ai reçu la collection des documents publiés par la législature de l'Indiana (États-Unis d'Amérique), en 64 volumes reliés, que vous m'avez adressés pour la bibliothèque de mon département, en même temps que votre lettre du 28 janvier dernier.

Je vous remercie de l'envoi de ces publications intéressantes dans lesquelles mon administration pourra trouver des renseignements utiles. J'ai fait placer ces volumes conformément à vos intentions, dans la bibliothèque administrative de mon ministère.

Je vous prie de transmettre mes remerciements à M. le Secrétaire d'État du gouvernement de l'Indiana, et de lui faire connaître que je saisirai toutes les occasions qui me permettront de mettre à la disposition de la législature de cet État les publications administratives émanées de mon ministère et qui seront de nature à l'intéresser.

J'ai pris en considération la demande que vous m'adressez dans le but d'obtenir, pour les autres États de l'Amérique du nord, quelques-uns des ouvrages auxquels mon département souscrit; et je me ferai un véritable plaisir d'y donner suite.

En accueillant cette demande avec la faveur qu'elle mérite, je serai heureux de pouvoir coopérer à l'échange international des productions de l'esprit humain dans les deux hémisphères, et de contribuer ainsi au progrès général de la civilisation.

Recevez, etc.,

Le ministre de l'intérieur.
Pour le ministre:
Le sous-secrétaire d'État,
A. PASSY.

From His. Ex. the minister of public works.

Paris, 26 février 1846.

Monsieur,

J'ai reçu, avec la lettre que vous m'avez fait l'honneur de m'écrire le 10 février, divers documents relatifs aux travaux publics.

Je vous remercie de l'envoi de ces documents, que je viens de faire déposer au bureau central de statistique du ministère des travaux publics.

Il m'est agréable, Monsieur, de pouvoir vous adresser, pour contribuer à la réalisation de votre projet d'échanges internationaux, un certain nombre d'ouvrages, documents, cartes et médailles; vous en trouverez le bordereau ci-joint.

Recevez, Monsieur, l'assurance de ma considération distinguée.

Le ministre des travaux publics,
S. DUMON.

From the prefect of the Seine.

Paris, le 26 mars 1846.

Monsieur,

J'ai reçu avec une vive satisfaction les divers ouvrages qui, par votre intermédiaire, ont été adressés à la ville de Paris par les États du Maine, du Massachusetts, de l'Indiana et des villes de New-York et de Baltimore, ainsi que du Canada.

J'ai mis ces ouvrages sous les yeux du conseil municipal, qui s'est montré extrêmement sensible à cet hommage, ainsi qu'aux témoignages de sympathie exprimés par les résolutions dont vous avez bien voulu me transmettre une copie.

Je lui ai soumis en même temps des propositions pour l'envoi par la ville de Paris de nouveaux documents administratifs, en échange de ceux qui lui étaient si gracieusement offerts.

Le conseil n'a pu encore délibérer sur ces propositions; mais j'espère qu'il lui sera possible de s'en occuper incessamment.

Les États et villes d'Amérique qui entretiennent ces relations amicales avec la ville de Paris peuvent être assurés de tout l'intérêt que j'attache à cet échange de sentiments mutuels d'estime et de sympathie.

Agréez, Monsieur, l'assurance de ma considération très-distinguée.

Le pair de France, préfet,
Comte DE RAMBUTEAU.

From His Ex. the minister of the interior.

Paris, le 22 avril 1846.

Monsieur,

J'ai l'honneur de vous annoncer que, par ordonnance du 5 avril, le roi a bien voulu, sur ma proposition, accorder à l'Institut national des États-Unis d'Amérique, un exemplaire, papier fin, du grand ouvrage sur l'Expédition d'Égypte

M. Jomard, conservateur de la Bibliothèque royale, tient dès ce moment cet exemplaire à votre disposition.

Je me félicite, Monsieur, d'avoir pu faire en cette circonstance une chose qui soit agréable à l'Institut national des États-Unis.

Recevez, Monsieur, l'assurance de ma considération distinguée.

Le ministre secrétaire d'État de l'intérieur,
DUCHATTEL.

A M. Vattemare.

LOUIS-PHILIPPE, ROI DES FRANÇAIS,

A tous présents et à venir, salut:

Sur le rapport de notre ministre secrétaire d'État au département de l'intérieur;

NOUS AVONS ORDONNÉ ET ORDONNONS CE QUI SUIT:

ART. 1^{er}.

Un exemplaire papier fin du grand ouvrage de l'Égypte est donné à l'Institut national des États-Unis d'Amérique.

ART. 2.

Notre ministre secrétaire d'État au département de l'intérieur est chargé de l'exécution de la présente ordonnance.

Au palais des Tuileries, le 5 avril 1846.

Signé: LOUIS-PHILIPPE.
Par le roi:

Le ministre secrétaire d'État au département de l'intérieur,
Signé T. DUCHATEL.

Pour ampliation:

Le sous-secrétaire d'État au département de l'intérieur,
A. PASSY.

Such are the feelings towards the establishment of the system of international literary exchanges in France; as for those of your own country, although each one of you is already acquainted with the warm sympathy with which my proposals were received, while in the U.S., yet I thought it well to publish the following documents showing not only the continuation but the increased favor bestowed upon my humble efforts in the consolidation of this additional link so well adapted to strengthen more and more our fraternal union, but as a stimulus for those states who have not yet entered into this enlightened and peaceful confederacy, and to bring forth the true character of this generous nation, whose love for the propagation of knowledge would prevent her from shrinking from any sacrifices calculated for the improvement of the human race.

STATE OF MARYLAND.

RESOLUTIONS

Adopted by the first and second branches of the city council of Baltimore and submitted for the approval of the Mayor, February 26th, 1844.

Resolved by the mayor and city council of Baltimore, That the thanks of the city of Baltimore be, and are hereby presented to the city of Paris for the splendid donation of books which have been presented by the said city to the city of Baltimore. She cordially reciprocates the sentiment that such testimonials presented by *the cities of France* to those of the *United States*, have a favorable effect on literature and science and on the fine arts, and on the sympathy and ancient friendship so happily existing between the United States and France.

Resolved, That the following books and maps be presented in the name of the city of Baltimore to the city of Paris, as a testimonial of the sense entertained of the friendship of the said city in presenting sundry valuable books to the city of Baltimore.

And be it resolved that the chairman of the committee be authorised by and with the approbation of the mayor, to draw on the Register for the sum necessary to carry the foregoing resolution into effect.

T. YATES WALSH, president, first branch.
ROBERT HOWARD, president, second branch.

STATE OF MAINE.

RESOLVE to promote Mutual Literary and Scientific Exchanges with Foreign Countries.

Resolved, That there be hereafter fifty additional copies of each volume of laws, resolves, and public documents printed by order of the Legislature, be printed and bound for the purpose of exchange in foreign countries^[1].

Resolved, That the Governor be authorized to transmit any of the above extra copies to the agents of foreign countries in the United States, authorized to receive the same for the above purpose, and that he be further authorized to make exchange of the same.

Resolved, That a sum not exceeding one thousand dollars be appropriated from the Treasury, for the collection and exchange of original specimens of natural history and productions of useful art, to be expended under the direction of the Governor for the purpose aforesaid.

In the House of Representatives, March 19, 1841. Read and passed,

JOSIAH S. LITTLE, Speaker.

In Senate March 20, 1841.

R. H. VOSE, President.

March 20, Approved,

EDWARD KENT.

RESOLVES authorizing the appointment of an agent of international exchanges with foreign countries.

Resolved, That the Governor, with the advice and consent of the council, is hereby authorized to appoint some suitable person, residing in the city of Paris, France, to be the agent of the state of Maine, for the purpose of receiving and transmitting to and from the secretary of state, all such books, documents and other objects of international exchange as may be directed to his care in pursuance of certain «resolves to promote mutual literary and scientific exchanges with foreign countries» approved March twentieth, eighteen hundred and

forty one. «Resolves in favor of the American Athenæum» at Paris, approved March twenty second, eighteen hundred and forty three.

Resolved, That the Governor and council are hereby authorized to audit and allow all necessary charges of such agent for receiving, packing up, carriage and exportation of said objects of international exchange; provided the sum shall not exceed three hundred dollars; and the Governor is hereby authorized to draw his warrant upon the treasurer, for the payment of such charges, out of any moneys not otherwise appropriated.

In the House of Representatives, March 22, 1844. Read and passed.

DAVID DUNN, Speaker,

In the Senate, March 22, 1844. Read and passed.

JOHN W. DANA, President.

March 22, 1844. Approved, H. J. ANDERSON.

To Alexander Vattemare, of the city of Paris, kingdom of France, greeting.

In conformity with the provisions of a Resolve of the Legislature of this state, entitled «Resolve authorizing the appointment of an Agent of international exchanges with foreign countries» Approved March twenty second, one thousand eight hundred and forty four, I have, with the advice and consent of the executive council of Maine, appointed you an Agent to execute any and all of the duties required by said Resolve, and as contemplated in your communication to the executive of this state, under date of October tenth, eighteen hundred and forty three.

H. J. ANDERSON.

(L. S.)
By the Governor,

WITNESS, HUGH J. ANDERSON our Governor, and the seal of the state hereunto affixed this twenty sixth day of March in the year of our Lord one thousand eight hundred and forty four, and of the independence of the United States the sixty eighth.

PHILIP C. JOHNSON,
Secretary of state.

STATE OF MICHIGAN.

Preamble and joint resolutions relative to Mons. Vattemare's system of international literary exchanges.

WHEREAS Mons. Alexandre Vattemare, a citizen of France, has with an unexampled zeal devoted his time, his energies and his fortune to the philanthropic effort of establishing an intellectual confederacy among the nations of the earth; AND WHEREAS his system of international literary exchanges is not only promotive of science and the improvement of literature and the arts, but is also conducive to the fraternization of governments and the diffusion of civilization through out the globe;

AND WHEREAS the project has been approved by the chambers and ministers of France, by the congress of the United States and the legislatures of several of the States, and by the statesmen and literati of both nations,

Be it therefore *resolved* the senate and house of representatives of the state of Michigan that in grateful acknowledgment of his disinterested labors in the cause of humanity and for the valuable works presented by him to the state, the thanks of the people of Michigan are respectfully tendered to Mons. Alexandre Vattemare by the representatives of the people in legislature convened.

Resolved that his excellency the governor be and he hereby is authorized and requested to receive the parcel of books transmitted by Mons. Vattemare through Lewis Cass Jr. Esqr. to the state of Michigan and also the parcel consigned to E. Thayer and Co., forwarding merchants in the city of New-York, and to place the same in the state library.

Resolved that his excellency be and he hereby is further authorized and requested to transmit to Mons. Vattemare a copy of the revised statutes and session laws of the state of Michigan together with the journals and documents of both houses of the legislature and such maps of the several counties as are now completed.

Resolved that the state geologist be and he hereby is authorized and requested to examine and report to the next legislature what duplicate specimens of the natural history of Michigan are in his department of the University.

Resolved that our senators in congress be instructed, and our representatives be requested to use their best efforts to obtain the appointment of Mons. Alexandre Vattemare as an agent of the general government to act in behalf of this state, with power to conduct literary exchanges between France and the United States.

Resolved that his excellency be and he is hereby requested to transmit a copy of these resolutions and the report of the committee on education to Mons. Alexandre Vattemare and to each of our senators and representatives in congress.

EDWIN N. LOTHROP,
Speaker of the house of representatives.

EDWIN M. CURT,
President of the senate, (*pro tem*).
Approved, March 12, 1844.

JNO. S. BARRY.

STATE OF ILLINOIS'S.

Historical Society, Upper Alton III, August 15th, 1844.

To A. VATTEMARE, esqr.

Dear sir,

.....On the 24 July your letter and communication for the governor of the state were both read and afforded much gratification. Thanks were voted to the liberal donor the marquis de Pastoret for his present of books, "Histoire de la législation des peuples". The society feel greatly indebted to you for the interest you have exhibited in its prosperity and advancement.

Mr. senator Brease delivered an address of three hours length before the society, describing Lasalle's discoveries and the labors of the French missionaries among the Indians in this state 150 years ago. He was directed to transmit your communication to the governor and urge its importance upon the legislature. A strong impulse was given us by your zeal and our hopes greatly encouraged.

We shall soon make up a box for you of minerals—lead ore from Galena and the South part of the state—Coal—specimens of rocks and boulders found on our large praries, and if possible, a prarie hen or grouse as the English call it, etc., etc.

Respectfully,

ADIEL SHERWOOD.
Corresponding Secretary.

DISTRICT OF COLUMBIA.

War Department, Washington, December 30th, 1844.

Sir,

I had the honor on the 1st of november to acknowledge the receipt of your letter of the 7th of September last, presenting to this department in the name of M. Dumon, minister of public works, the beautiful and interesting geological map of France, and at the same time I desired you to convey to M. Dumon the thanks of the department for so valuable an acquisition to its library.

Your desinterested and persevering efforts to establish a system of international exchanges of works of science and art are duly appreciated in our country. The results of those efforts we have all witnessed with great admiration in the fine engravings and rare books and medals, the contribution and donations of some of the highest and most meritorious men of France to the library and museum of the National Institute.

Allow me, in the name of this department to send to your care a complete series of an illustrated history of the Indian tribes of North-America exhibiting likenesses of their most distinguished leaders, which you will please to present to the minister of public works with the assurance of my distinguished consideration and regard.

Your obedient servant,

WM. WILKINS,

Alexandre VATTEMARE, Esq.;
Paris.

From the Honorable Reverdy Johnson, U.S. senator from Maryland.

Senate chamber, February 18, 1846.

My dear Sir,

I have just had the gratification of receiving your letter of the 28th of January. From the manifestation already evinced by this body, I am sure that they will liberally meet all your wishes about the exchanges.

Just before I got your letter they passed unanimously a resolution providing that the librarian of Congress transmit to the Minister of Justice of France "*a complete series of the reports of all the decisions of the supreme court of the U.S., and of the circuit and district courts thereof, and a complete copy of the public statutes of the United States,*" and making an ample provision for executing it. This resolution will no doubt receive the sanction of the House of representatives.

Your presents to the National Institute I received and delivered, paying all the charges. Any other gift which you may wish to forward to me will be gratefully received.

I hope that the day is now come when your spirit will animate the enlightened men of both Nations and Sciences, and the Arts be found the leading objects of all.

Not despairing of having again the pleasure of seeing you, I am truly your friend,

REVERDY JOHNSON.

From the Hon. R. B. Taney, Chief Justice of the U.S. Supreme Court.

March 21 st 1846.

Sir,

I have at length the pleasure of announcing to you that congress have passed a resolution authorising the transmission and presentation to the minister of justice of France of the reports of the decisions in all of the different courts of the United States as far as they have been published since the foundation of the Government; together with a copy of the laws passed by congress. Inclosed I send you a copy of the resolution, wich was passed unanimously.

There is now preparing under the authority of congress, a new edition of the laws of the United States much more complete and satisfactory than any heretofore published, which is not yet quite ready for delivery. And as I wish to send all of the books at the same time I shall delay the transmission of the reports, until I can send with them this new edition of the acts of congress. They will however I hope be ready in a month or two; and I shall take much pleasure in transmitting them with the reports as early as practicable.

You know how much I have regretted the delay in acknowledging the courtesy of the minister of Justice of France, by a suitable return. But feel assured that he as well as yourself will impute it to accidental causes wich I have heretofore explained.

With great respect, I am, Sir,

Your obedient servant,

R. B. TANEY.

Mr. ALEXANDRE VATTEMARE, Paris.

TWENTY-NINTHE CONGRESS OF THE UNITED STATES,

At the First session, begun and held at the city of Washington, on monday the first day of December, one thousand eight hundred and forty-five.

A RESOLUTION, to authorise the transmission and presentation of books to the minister of justice of France, in exchange for books received from him.

Resolved, by the senate and house of Representatives of the United States of America, in congress assembled, that the librarian of congress be, and he hereby is, authorised and directed to procure a complete series of reports of all the decisions of the Supreme Court of the United States, and of the circuit and district courts thereof, wich have been heretofore published; as also a complete copy of the Public Statutes at Large of the United States, now being edited by Richard Peters, esq, by authority of congress, the whole to be uniformly bound and lettered, and to cause the same under the direction of the chief justice of the said Supreme Court, to be transmitted and presented to the minister of justice of France, in return and exchange for works of French Law heretofore presented by the minister to the Supreme Court aforesaid.

SECTION 2. *And be it further Resolved*, that for the purpose aforesaid, there be appropriated, out of any money in the treasury not otherwise appropriated, a sum not exceeding five hundred dollars.

JOHN W. DAVIS,
Speaker of the house of Representatives.

Approved, March 4 th, 1846.

JAMES K. POLK.

THE NATIONAL INSTITUTE. *From an article in the New-York Review of September, 1845, by the Hon. Joseph Ingersoll, Senator from Pennsylvania.*

In the beginning of the year 1842, an intercourse was opened which has been already productive of rich results, and may in the future confer immense advantages. Dr. Linn, of the United States Senate, sent to the *School of Mines*, of Paris, a specimen of oxide of iron taken from the iron mountain of Missouri. It was done at the request of Mr. Alexandre Vattemare, of that city, who had not a great while before visited Washington, and communicated to Dr. Linn, and through him to the "National Institution," the letter of Mons. Dufresnoy, "Chief Engineer and Director of the Royal School of Mines." It is declared to be the ornament of their collections. In the name of the Council of the School he returns thanks "for this magnificent specimen," which he pronounces, notwithstanding its almost gigantic dimensions, (sixty-six millimetres in diameter,) complete in all its parts. Besides its interest in a mineralogical point of view, he adds that the present of Mr. Linn is highly esteemed by them, because it commences the system of exchange which Mr. Vattemare had sought to establish between all the nations of the new and the old continents, and which he says alone can secure the completion of their collections. From the period when this correspondence took place, Mr. Vattemare seems to have devoted his intelligent and active mind to this object. He has been the means of procuring and forwarding to Washington a perpetual supply of splendid and valuable productions. His countrymen are always on the march of improvement in the various departments of the elegant arts. Every description of magnificent engraving has been communicated. Box after box of books has come from him in unmeasured profusion. It would be endless to recapitulate the objects of his friendly contribution. They are referred to emphatically because they have especially served to set in motion that system of exchange, without which nothing can be completely deserving of the name of a collection. That Mr. Vattemare does not weary in his efforts needed no new proof. As lately as the 9th of June, 1845, he announces that he has received for the National Institute, from M. Le Brun, Peer of France, Director of the Royal Printing-office, etc., the complete collection of the *Journal des Savans*, from 1816 to 1845, twenty-nine quarto volumes, bound. "This most interesting and valuable collection," he says, "was last year granted to the National Institute at the request of M. Le Brun, by the Minister of Justice, etc. M. Le Brun has also sent to me a copy of his works, to be presented to the Institute as a token of his friendship and good wishes. From the War department of France, a complete collection of all the documents and works, illustrated with a great number of maps, etc., of the French possessions in North Africa, including the neighboring States, viz., the Empires of Morocco, Tunis, etc., published by order and under the superintendence of the Minister of War—sixteen volumes, folio, quarto, and octavo. From the Minister of Agriculture and Commerce, twenty-five works on Agriculture and Commerce. From the Minister of the Interior, a beautiful collection of *bronze medals*, commemorative of national events, from 1830 to 1844 inclusive. From M. M. Flourens, Perpetual Secretary of the Academy of Sciences, Member of the Académie Française, etc., his last two works. From M. M. Barre and Danton, sculptors, two beautiful little statues, one of the late Duc d'Orleans, the other of Miss Adélaïde Kemble as Norma. From M. Picot, Member of the Academy of Fine Arts, etc., two fine engravings, taken from two of his pictures. From the Société Séricicole, (founded in 1838, for the encouragement and promotion of silk manufacturing in France,) the complete collection of its annals from its foundation to the present year—nine volumes, octavo." "All the above works, with many others, are heaped up, and occupy so much room in my office, that I can scarcely move about in it, and this number is daily increasing." One is impressed with mingled feelings of pleasure and mortification at reading this letter, for while it thus exhibits a prolific interest in the Institute, it unfolds in the following paragraph how little is the encouragement or gratitude for his substantial friendship and zeal:

"It is a matter of great distress to me not to have it in my power to defray all the expenses of packing, of custom-house dues, commissions, and transportation from Paris to Washington, but I really cannot do it. Recollect that since 1839 to the present time, I have devoted all my time, industry and fortune, to the exclusive object of establishing an intellectual union between Europe and America; that *I have never received the slightest pecuniary assistance from my own country*; and that the first and only encouragement of that character ever vouchsafed to me was the amount of *two hundred dollars*, so generously subscribed last year by the members of the National Institute, and two hundred and fifty dollars (out of three hundred) voted by the State of Maine. For the maintenance of an agency in Paris for national literary interchanges, the State of Massachusetts, stimulated by an enlightened and patriotic spirit, voted, during the last session of its Legislature, a like most generous allocation. Were all her sister States to follow so noble an example, by voting a small sum, according to their population and their intellectual wants, a fund might easily be established, amply sufficient to cover all the expenses incurred in maintaining an United States scientific and literary agency in Paris, the benefits of which would be incalculable."

On this vital point (of exchanges) a report was made in February, 1842, by Mr. Markoe, the accomplished and indefatigable Corresponding Secretary. It exhibits the very great importance of them, as entering essentially into the plan of every society constituted like this and having like objects in view, and it shows that no occasion has been omitted to acquaint societies and individuals, whose correspondence has been sought or offered, that a system of general exchanges would be entered upon as soon as a plan should be matured. Under that assurance, and independently of it also, (it is added) valuable collections of various kinds have already been received, which render it incumbent on the directors to redeem the pledge that has been given. For this object the members are informed that they have already in hands the most abundant materials, which were increasing, and would continue to increase every day.

STATE OF PENNSYLVANIA.

Secretary's office. Harisburg Oct. 25th 1844.

To Alexandre Vattemare esq.

Sir,

I have had the honor to receive your letter of the 6th september last, addressed to the Honorable A. V. Parsons secretary of this Commonwealth, informing him that in November 1842 and January 1843, you had transmitted to his Excellency David R. Porter for the library of this State certain valuable books obtained from the ministers of the several departments of the French government, and desiring an Acknowledgement of their receipt.

It is a cause of sincere regret that your Kind attention and that of the heads of the departments of the government of France has not since received the acknowledgement which it so highly merits. This has not been owing to an improper appreciation of its value, but to circumstances which I trust are sufficient to exculpate the government of this state from the charge of wilful neglect.

The books transmitted in 1842 arrived here at the time that Mr Persons was about to retire from the office of secretary of state. They were placed in the state's library and upon my assuming the duties of the office in february 1843 their receipt did not come under my observation. Those sent in January et February 1843 *remained in the custom house* at New-York until a short time ago when they were forwarded by the collector of Customs at Philadelphia, who had received information that they were remaining in New-York. When these arrived they were immediatly placed in the state's library, there was not any letter accompanying them stating by whom they had been forwarded.

I request that you will receive this explanation and if you deem it necessary, communicate it to the ministers of the departments of France interested in it. It is desired that the ministers may not entertain the belief that their attention is improperly understood by the authorities of this state.

It is hoped that our legislature stimulated by a sense of your very valuable efforts will adopt measures to reciprocate the kindness and aid in your laudable exertion to promote the friendship at present happily existing between the people of France and those of the United States.

Annexed is a list of the books received from Paris and in the library of the state.

Agreeable to your request I send herewith letters of acknowledgement, addressed to the ministers of finances, war, navy, justice and commerce.

I have the honor to be, with profound regard your obedient servant.

CHAS. M^c CLURE,
Secretary of the Commonwealth of Pennsylvania.

COMMONWEALTH OF MASSACHUSETTS,

In the year one thousand eight Hundred and forty Five.

Resolves to promote mutual literary and scientific exchanges with foreign countries.

Resolved that the secretary of the commonwealth, under the direction of his Excellency the Governor, be authorized to exchange copies of the state map of Massachusetts, not exceeding twenty in number, and bound copies of the laws and legislative documents of the commonwealth for the current political year, not exceeding fifty volumes of each for books and other works of science and art from foreign countries, to be deposited in the library of the general Court. And the secretary is hereby authorized to cause fifty copies of each of the said documents for every future year to be printed over and above the number to be bound in volumes and set aside for the purpose of effecting therefore said exchanges hereafter^[2].

Resolved that his Excellency the Governor be authorized to appoint some suitable person, residing in the city of Paris, France, to be the agent of the commonwealth, in transmitting to, and receiving from the secretary's office all such books and other works of science and art, as may be addressed to his care, in pursuance of the object of the preceding resolve, and to audit and allow all reasonable charges of said agent, for the receiving, packing carriage and exportation of said objects of exchange; provided, that the total sum so expended, shall not exceed three hundred dollars.

House of Representatives, February 26, 1845. Passed.
SAML H. WALLEY JR., Speaker.

In Senate, February 27, 1845. Passed.
LEVI LINCOLN, President.

February 27, 1845.

Approved.

GEO. N. BRIGGS.

Secretary's office, March 15, 1845.

A true copy.

Attest.

JOHN G. PALFREY,
Secretary.

My dear Sir,

I send you herewith a copy of Resolves passed by our legislature at its present session.

I have it in charge from his excellency the Governor to say that he requests you to accept the appointment of agent under the second of the resolves, and that he has no doubt that this commonwealth will derive important benefits from your enlightened and liberal exertions.

"I am, dear sir, with the highest regard
Your friend and servant,

JOHN G. PALFREY,
Secretary of the commonwealth.

To A. VATTMARE, Esq.
Paris,
France.

STATE OF VIRGINIA.

Executive Department, Richmond Virginia, August 19, 1845.

Sir,

Your letter of the 28th December last to the Governor of Virginia has been placed in my hands and will be submitted to the committee of the Legislature on the state library at its annual meeting in December next.

This Institution, founded by the state for the use of several departments of the government comprises the departments of Law, literature, science and arts. It is under the direction of the Legislature through a committee of both houses, and possesses the following works which have been published by the state, and which are occasionally interchanged with other states, and public institutions, viz:

The statutes at large being a collection of all the laws of Virginia from the year 1619 to 1808, in 16 volumes;

Laws of a later date;

Reports of the state convention in 1776;

Journals of the legislature from 1776 to 1790 and from 1831 to the present time, a map of Virginia published in 1826, and consequently at this day incomplete, yet probably valuable for your purpose.

The geological survey of the state has been completed and will probably be published in the course of another year.

If any of or all these publications would be acceptable to you, authority will be given for exchanging them upon the terms indicated in your letter, and I shall be happy to be the organ of communication in this interchange should you think proper to transmit any publications equivalent: so far at least as the before stated collections of the library institution will supply it.

At any event I shall be gratified by having it in my power to lay before the committee any communication you may think proper to address to me.

I am, sir, with high respect, your obedient servant,

WM H. RICHARDSON,
Secretary of the com. of Virginia, and ex officio librarian.

STATE OF NEW-YORK.

From the Regents of the university of the state, trustees of the State Library.

Albany, June 21, 1845.

M. ALEX. VATTEMARE,

Dear sir,

I had the honor to receive your letter of the 10th April on the 1st of June and two days since I received the books mentioned in it. I have replied as directed by the regents to M. the Count de Salvandy and must ask you to present the letter to him.

The legislature of this state adjourned about the middle of May, the laws, journals and documents of the two houses which are now directed by an act passed this session, to be sent to the government of France (duplicate copy), have not yet come from the hands of the printers and binders—probably it may be two months, before they are completed, as indexes are to be compiled for each; but as soon as I receive them (and it is my duty by law to forward them), they shall be sent.

Meanwhile I have collected from the various departments a few publications which I trust may be interesting. They are, as you are probably aware, not for sale and of course cannot readily be obtained out of this city. I send parcels for the minsters of *public instruction*, of *finances*, of *agriculture and commerce*, of *justice* and of the *marine*.

There is a law of the state directing the presentation of the volumes of the natural history of the state of New-York, to foreign governments and bodies and persons making donations to the state library. The governor and secretary of state are charged with this duty. I had an interview with these gentlemen during the present week and they assured me that they would in a few weeks at most, give the necessary directions for their transmission. Of course, a copy will be sent to his majesty and another to the royal library of France. And I have reason to suppose that copies will be sent to several of the ministers who have made donations through you. Certainly, to count de Salvandy. I have no doubt but every thing will be done in a manner acceptable to you^[3].

I am extremely happy to learn that you have for us a copy of the judicial statistics of France. This is a most valuable donation. That of the Count de Salvandy is a splendid one and will be duly noticed to the Legislature, when they meet in 1846.

The regents of the University deeply feel their indebtedness to you for your kindness in forwarding.

I have honour to remain with respect, your truly,

J. ROMEYN BECK,
Secretary.

Mercantile Library Association, Clinton Hall. New-York, November 24th, 1845.

DEAR SIR,

I am greatly pleased at being able to state that the books for the city of Paris have at length been forwarded by our city council through M. Edward Bossange, and I trust they may reach their destination in safety.

They have been bound in uniform style and form a handsome collection. The survey of this state, which forms a part of it, is a fine work. I trust that the delay which has occurred may leave no unfavorable impression in the minds of the gentlemen composing the council of the city of Paris.

I have urged forward the sending as much as proper and M. Valentine, the clerk of our city council, has taken an active interest in the matter. All have desired to make the collection worthy of the distinguished body for whom it is designed, and it has been found necessary to delay some time until certain books could be procured not readily met with.

A communication from the mayor of the city accompanies the books.

I have taken the liberty of sending with them two copies of the catalogue of our library, one for yourself and one for the city council of Paris, and also a small packet addressed to yourself containing a number of letters of acknowledgement for the works you kindly forwarded to our association.

With sentiments of the highest respect I remain,
Your most obedient servant,

H. K. BULL,
Corresponding secretary.

STATE OF RHODE-ISLAND.

Brown University, Providence, January, 29th, 1846.

DEAR SIR,

..... Your letter to the Governor has been received, presented to the legislature and referred to the committee on education. The chairman of the committee, M. Goddard, formerly a professor in our college, presented a report with resolutions thanking you for your generous exertions, and particularly for your handsome presents, and voting several extra copies of all reports and documents published by the state and authorising the governor to pay all charges that may occur for the packing up and transportation of said books and any others to be sent to us from Paris, through your agency. This was carried through the House and the senate unanimously and it is I believe the only question which has been decided unanimously in our legislature for a long time.....

You will probably receive the report and the votes, by this steamer or the next.

The Rhode Island-Historical Society have also passed votes of thanks and resolutions in favor of your project which you will receive soon.

As to the books I shall make up a box and forward it to you as soon as I can.

I write in great haste at the last moment before closing of the mail thinking it better to write an unfinished account of the affairs than to keep you longer in suspense.

I beg your to believe me with the greatest respect,
Your obedient servant,

C. C. JEWETT.

MR. A. VATTEMARE.

COMPARATIVE

Of the Scientific Exchange between France and America

SENT FROM FRANCE TO AMERICA.

From His Majesty Louis Philippe I	20 volumes.
— Her Royal Highness Madame Adelaide	5 medals.
— The Chamber of Peers	150 volumes.
— The Chamber of Deputies	200 —
— His Excellency Minister of Justice and Divine Worship	250 —
— — — War	50 —
— — — —	60 maps.
— — — Navy and Colonies	150 volumes.
— — — —	334 maps.
— — — Interior	200 volumes.
— — — —	50 medals.
— — — Commerce and Agriculture	259 volumes.
— — — Public Instruction	60 —
— — — Public Works	534 —
— — — —	33 maps.
— — — —	2 medals.
— — — Finances	128 volumes.
— the City of Paris	200 —
— — Director General of Customs	69 —
— — Royal Library	10 —
— — — —	36 engravings.
— — — —	40 maps.
— — — Academy of Sciences	50 volumes.
— — — — Moral and Political Sciences	12 —
— — — — Medecine	6 —
— — — — Sciences and fine Arts at Rouen	46 —
— — — Museum of Natural History (specimens of minerals)	2 cases.
— — — And Central Agricultural Society	156 volumes.
— — — Geological Society of France	13 —

--- M. Edward Alletz, Consul general at Genoa	18—
--- the Sericicle Society	27—
--- M. Barre, sculptor	2 <i>statuettes.</i>
--- M. Bovy	1 <i>medal.</i>
--- The Viscount de Cormenin, Deputy	5 <i>volumes.</i>
--- M. de Chaucheprat	2—
--- Lieut. General de Cubières	1—
--- M. Dantan	1 <i>statuette.</i>
--- Count Daru, Peer	10 <i>volumes.</i>
--- M. A. Denis, deputy	10—
--- M. A. Deville, President of the R. A. de Rouen	16—
--- Baron Charles Dupin, Peer	17—
--- M. Durat La Salle	3—
--- M. Duvergier de Hautranne, Deputy	4—
--- M. Dubufe	1 <i>engraving.</i>
--- M. Milne Edwards	4 <i>volumes.</i>
--- M. Elie de Baumont	1—
--- M. Estancelin, Deputy	6—
--- Faugère	2—
--- Count de Gasparin, Peer	2—
--- M. Gayrard	1 <i>statue.</i>
--- M. Jubinal	10 <i>volumes.</i>
--- Count d'Hauterive, Deputy	10—
--- Viscount Hericart de Thury	10—
--- M. Jomard	6—
--- M. Jal	6 <i>portraits.</i>
--- M. Laurentie	10 <i>volumes.</i>
--- Count de Las Casas, Deputy	3—
--- Count Leon de Laborde	12—
--- M. Le Brun, Peer	4—
--- M. Ledru-Rollin, Deputy	4—
--- M. L'Herbette, deputy	25—
--- Count de Marcellus	1—
--- M. Guerin Melville	6—
--- M. Nisard, Deputy	2—
--- M. D'Orbigny	2—
--- — —	10 <i>maps.</i>
--- M. Hippolyte Passy, Peer	4 <i>volumes.</i>
--- The Marquis de Pastoret, Deputy	60—
--- — — — — —	4 <i>engravings.</i>
--- — — — — —	6 <i>medals.</i>
--- M. de Remusat, Deputy	2 <i>volumes.</i>
--- Baron de Schauenburg, Deputy	4—
--- M. Amedee Thierry	6—
--- M. Thomas	6—
--- M. Ravaisson	2—
--- M. Alexandre Vattemarre	16—
--- M. Vitet, Deputy	5—
--- M. Champollon Figeac	6—
--- M. Faustin Hélie	2—
--- M. Michel Chevalier, Deputy	2—
--- M. Wolowski	—

=====
3,488 *objects.*
=====

RECAPITULATION.

Volumes.	2,894
Maps.	477
Engravings.	48
Pieces of Sculpture.	3
Medals.	64
Cases of Minerals.	2

TABLE

From February 1845, to May 15th, 1846.

SENT FROM AMERICA TO FRANCE.

From the Federal Government (War Department)		15 <i>volumes.</i>
---		12 <i>maps.</i>
--- — National Institute, Washington		25 <i>volumes.</i>
--- — Legislature of the State of Maine		94 —
---		3 <i>maps.</i>
---		1 <i>herbal.</i>
---	(specimens of minerals)	4 <i>cases.</i>
---	Massachusetts	195 <i>volumes.</i>
---		20 <i>maps.</i>
--- — Hon. John G. Palfrey		23 <i>volumes.</i>
--- — Mercantile Library Ass'n		1 —
--- — Hon. Josiah Quincy		2 —
--- — M. Bowen		20 —
--- M. B. P. Poore		10 —
--- the Legislature of the State of New-York		200 —
---		10 <i>maps.</i>
--- — Corporation of the City of New-York		18 <i>volumes.</i>
---		2 <i>maps.</i>
--- — N. Y. Mercantile Library association		2 <i>volumes.</i>
--- — Corporation of the city of Baltimore		16 —
---		3 <i>maps.</i>
--- — Brantz Mayer, Esq.		1 <i>volume.</i>
--- — Legislature of the State of Indiana		512 —
--- — Hon. Henry Ledyard, Esq., of Michigan		1 <i>maps.</i>
--- — Professor James C. Cross, of Kentucky		1 <i>volume.</i>
--- — Government of Texas		10 —
--- — Hon. Ashbel Smith		3 —
--- — Prof. S. F. B. Morse of New-York		1 —
--- M. Alfred Vail of Philadelphia		1 —
--- M. Hermann E. Ludwig of New-York		1 —
--- M. Vauzand		10 —

(I do not mention books which I have been officially informed, are on their way here from Congress, and the states of Maine, Massachusetts, Rhode Island, Virginia, Michigan, Illinois, Indiana, etc., in accordance with recent laws and resolutions, as the number of volumes is in no instance given.)

From the Government of Canada		60 <i>volumes.</i>
		=====
		1,267 <i>objects.</i>
		=====

RECAPITULATION.

1,211 Volumes.
51 Maps.
4 Cases of
Minerals.
1 Herbal.

Making a total amount of 4,749 objects exchanged through the Agency in the course of the past sixteen months between France and North America.—The Hon. *Secretary of war*, the states of *Maine*, *Massachusetts*, *New-York*, and *Indiana* with the cities of *Baltimore* and *New-York*, being the only respondents to my call, by transmitting important works and voting generous allocations to pay the necessary expenses. From these facts, all can see what the operations of the scheme have been, and judge what important results may be confidently relied upon, if the other states, corporations and

institutions of the flourishing and happy Republic would but enter fully and seriously in this peaceful *Intellectual Union* of the two Hemispheres.

ALEXANDRE VATTEMARE.

NOTA. It may perhaps be well to mention that the greater part of the books I have received here for the United States have been merely stitched, because no appropriations are made for binding public documents. The usefulness of the scheme of international exchanges is however becoming so apparent, that I hope generous appropriations will be made this year to enable several ministerial departments and the chambers to have their documents which are destined for exchange, properly bound and lettered. I would also express an hope that means may be provided to enable me to publish a quarterly account of the movements of the scheme, giving all the transactions effected, and also serving as an organ announcing all the superfluities of intellectual riches possessed by different countries and the Legislative, scientific and useful works published by their governments and scientific bodies, which could only be procured by exchange. Such a publication would be, and I may say is the only means of securing the permanency of the system of exchanges, and remove the apprehensions of those who see its existence limited by the perseverance of my efforts.

INSTRUCTIONS

ON THE BEST MODE OF

COLLECTING, PRESERVING AND TRANSPORTING

OBJECTS OF

NATURAL HISTORY.

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 travellers 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 travellers 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^o The manner of collecting and preparing objects of Natural History.
- 2^o The choice and form of the notes which should accompany them.
- 3^o 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 Nat. His. 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 envelopped 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 cristals, or in more or less irregular masses.

Among cristals there are some so situated that they can be separated without injury from the matter that envelopes 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 cristals enveloped in surrounding matter, particles of this matter should be detached with them (varying from 8 to 10 centimetres) so that 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 travellers. 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 cristals.

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 obsidiennes, 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 neighbouring 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.

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 informations 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, travellers 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 homogeneous 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 aerolithes; other may be transported by the revolutions of the globe.

In gathering fragments of rocks, mines, volcanic products and organised 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 or prisms, and what is their arrangement. It must be remarked if they contain the remains of organised 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. Haüy merit the same attention. They are distinguished above all by primitive porphyries, intermediate or secondary, by the absence of quartz and the presence of pyroxène or titanised 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 labours of the geological traveller.

Too large samples must not be taken, samples of 10 to 8 centimètres, by 3 or 4 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. Vattémaré.

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

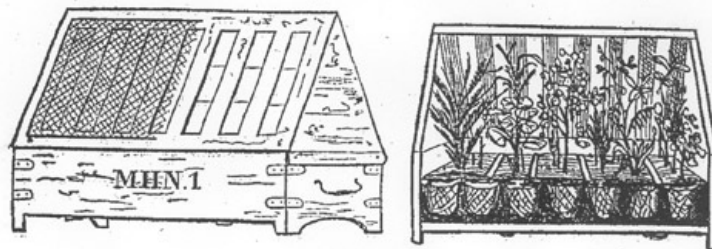
In the transportation of living plants, distinction should be made of the ligneous plants, young trees, shrubs, and herbaceous plants, which are neither pulpy plants, tubercles or roots, from that of these last vegetables.

The transportation of the roots, underground bulbs and tubercles, such as those of the lily tribe, irides, dioscarea, land archides, aroidees, gesneria, of many of the Oxalis, Trospoculum, etc., is easily effected by packing these parts carefully in dry moss, or very dry sand, with wich 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 dampnes, as hairwool 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 or 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:



9 to 11 decimetres long, 5 wide, 7 to 40 high.

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

The two smal 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 25 to 30 millimetres thick, dry and joined with groves, so that there may be no fissure.

The glassed frames are divided by cross pieces from 4 to 5 centimetre wide, extending from the upper to the lower edge, from 7 to 8 centimètres 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 prevend their fracture.

A bed of 4 or 5 centimetres 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 15 or 20 centimetres; the plants are embedded 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 sealed, 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 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 exotics, the seeds of our climate, cocorus, chesnust, bechnuts; and among exotics, 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. Five or 6 centimetres of earth are 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 three centimetres, then a bed of seeds, and so on up to 3 or 4 decimetres in height. 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 labelled—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° An 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 particularise all the plants we desire, because our wants vary every year by new acquisitions and losses; but the administration will endeavour to give them to the inhabitants of distant countries who are willing to lists of 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) chailletices, connaracies, burmaniacees, xyridee, Eriocolons, Podostemees, the loranthus parasites, lardizabalees, Pistias.

Among the Fern, Gleichenias, 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 contains:

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 medicine or the arts;

6° Samples relative to anatomy and vegetable physiology.

The care necessary to enrich these collections are generally less than those 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). Or 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 alternatively 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 (2 to 3 decimetres at most) it should be pressed between two pieces of paste board 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 tissue 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 several time 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 packets 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 leaves 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 accessory 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 50 centigrades 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. Doyère, 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 it 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 traveller 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 one 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 cases, all the parts should be sent separately.

There are families of plants that require peculiar processes 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 carymbs 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 of. 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 travelling, as they often require much care, unless the traveller is skilled in the art. Samples preserved in alcohol would be useful for anatomical researches.

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 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 with 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 traveller 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 traveller 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 traveller 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^[4].

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 bignonias, bombacees, sterculiacees, especially deserve to be collected separately.

Pulpous fruits should be sent in weak alcohol at 18°, in acetic or pyro-liqueous acid dissolved in water, or in water saturated in marine salt, if these two first liquids can not 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 envelopped 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 Capparidees, Papayers, the soft-fruited Cucurbitacees, 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 acid much weakened with water; such are those of the Orchides, Balisiers, Aroïdes, 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 viol. 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 viol nor alcohol, the flowers may be dried in the air without pressing, and then folded in paper and labelled; 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 the 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 solution of corrosive sublimate (15 to 20 grammes for a litre of alcohol at 36°), 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 sulphur, 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 travellers, 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, Arkanzas and Texas, a great part of Mexico, particularly the northern part, as well as California, the southern part of Mexico, and the countries comprehended between that state and the isthmus of Panama; the great isles of the Antilles, Haïti, Cuba and Jamaïca, though formerly explored, are now scarcely represented in our herbals.

Botany is already cultivated with success in many countries. Travellers 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.

Collections 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 affected without difficulty or expense. But when the size of the trunks and difficulties of transportation are so great that it can not be conveyed entire, it should be sent in three pieces of 50 centimetres 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 clusters 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 round pieces cut cross wise from 6 to 10 centimetres thick.

For the dycotelodons vegetables one of the principal trunks or a perfectly healthy branch should be taken, and a portion of it 40 or 50 centimetres long preserved; the size best suited for samples is from 10 to 20 centimetres 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 5 to 6 centimetres 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 names 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 particularise 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 dyeing; 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 different sorts of cabinet woods, from 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 Cedrelacees 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 8 to 10 centimetres 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 Diemen'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, Colombia 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 is 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 if 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 should 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 centimetres thick, as their organisation 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 a 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 earthen 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 particularised; 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 parasites 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 travellers and correspondents of the establishments will soon give them still more 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 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 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 later 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 organisation, 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 to reduce them about 1 decimetre cube. The only large pieces which ought to be preserved are those of the monocotyledons, which 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 2 to 3 decimetres. 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; fossil 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 Molluscs.—The sea is peopled by an infinity of animals soft or gelatinous grouped as molluscs, 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 us general notions on the organisation of beings and on the diversity of forms under which living nature shows herself.

Surgeons and amateurs of natural history travelling 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 liquor, 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 organisation 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 as 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 molluscs, 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 being 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 molluscs, 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 travellers entomological researches; undertaken with zeal and intelligence, even by a person who is not a naturalist, they can not 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, and, consequently, 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, travellers 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 the cape of good Hope; the Birman Empire, Assan, and even the interior of India, whence the English entomologist receive so many remarkable varieties; Borneo, the Phillipines and the neighbouring isles; the western and northern part of Australia; the west coast 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, the nest 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 travellers 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 escrescences, etc. Specimens of these alterations would be of great interest to entomology, especially when united with the insect that occasions them.

We urge travellers, 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 whith 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 flacks 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 recognised. 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 gauze net or pocket. The insects are found chiefly in fields whose flows 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. With a little skill, they can be pierced without seizing them before hand, 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 canvass 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 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 surrounded 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, two inches and a half 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 those whom he jostles. As soon as a 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.—Animal of this class are less numerous than insects, but they merit the attention of travellers; 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 dwelling 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 these 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 those specimens would have little value, unless each one is accompanied by the spider that belongs to it. In fine, we will point out to travellers 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.

Crustacees.—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 salicoes; 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 crustacees of small size are found in the deep sea and are taken in nets like the sea mollusques. 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 form. Until now travellers have almost entirely neglected the little crustacees of the order of the entomostracees, 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 crustaces is to plunge them in alcohol from 20 to 25°, after having wrapped them in linen or leaves. The large kinds shall be dried, by taking care first to take out the viscera that are under the shell; but the crustacees 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 in 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 should 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 of 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 could 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, id.

Emys mobylensis, Holbrook.

Emys insculpta, Leconte.

Emys aregoniensis, Halbrook.

Emys hyeroglyphiea, Holbrook.

Emys cumberlandensis, id.

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 Californio, Yutacan and Guatemala; *boas*, the *crested basilic* and the *horrible heloderme*, a great lizard with tuberculiform scales, should be sent us.

Antilles.—Cuba nourishes a prodigious quantity of reptiles which are entirely unknown to us.

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

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 travellers. 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 organisation, 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 Casoar and many others, will pershaps 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 lionness of the menagerie had whelps; it is also since two elephants have died ad the menagerie of the museum that an exact knowledge of the anatomy of this great quadruped has been acquired.

Travellers 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 travellers.

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 nets 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 pain 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 and 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 in 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 alchool.

When the skeleton of the animals 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 of 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 putrefactions 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 the eggs, a little hole is made at both ends, they are emptied 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 skeleton 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 well 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 bearish porcupine, hedge-hog.
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 animals 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 superstitions opinions concerning it among the native 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 chrysalis, 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 they will be no uncertainly 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 10th, the second, the units; by this means any number can be specified. We even know by experience that the same 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 entire 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.

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.

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 it self, 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^o animals wrapped in linen cannot tear each other with their nails or spines; 2^o 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 be an opportunity of filling them again with alcohol.

The spirituous liquor be from 16 to 22° of the areometer of Baumé; stronger, it destroys the colors of animals; it is used at 22° only for mammals. All spirituous liquor are equally good. The color less 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 mammals are large, it is well to pour the alcohol in the intestinal 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 is 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.

INSTRUCTION

RELATIVE

TO ZOOLOGY AND ANTHROPOLOGY

By M. ISIDORE GEOFFROY SAINT-HILAIRE.

Generation of the Pouch-Animals.—Mexico and especially Brazil produce, as it is known, several varieties of the Marsupial Mammifers, all the family of the Didelphides, but some, such as the Didelphes, provided with a true pouch, other, such as the Micoures and the Hermiures, without pouch properly so called, doubtless it will be possible to procure live specimens of both sexes. We cannot too strongly urge the naturalist to neglect nothing to clear up the mystery, yet but partially penetrated, of the manner these mammifers reproduce kind. We are far indeed, from the period, when it was believed that the animals were formed at the dugs of their dams. The labors of Hunter, Home, Geoffroy Saint-Hilaire de Blainville and other observers, have long since removed from science this inadmissible anomaly; some years ago, M. Owen, having the fortunate opportunity of examining the uterus of a female Kangaroo, that died in bringing forth, and of dissecting the embryo it contained has developed several facts of great interest.

But the intra-uterine gestation of the marsupials, and the second singular gestation peculiar to them, still remain new and important subjects of study for anatomy and comparative physiology. Animals or parts of animals sent in alcohol from America, the Indian Archipelago, or New-Holland, some cases of reproduction occurring in Paris and London, such are the imperfect elements which the French and English physiologists possess; their efforts to procure a certain number of specimens have always been unsuccessful. This determined Geoffroy Saint-Hilaire to draw up in 1824, and the administration of the museum to send to all the countries where the Marsupials are found, detailed information on the state of the question at that time, and of the researches imperiously required by the wants of science from observers in those regions.

1° If learned naturalists could send a series, so that the evolution of the ovula, the embryo, and the egg could be studied from its fecundation to its discharge from the uterus, they would thus supply Zootomists with all the elements of the great work we have just pointed out.

2° To observe with care the circumstances of the passage of the foetus to the vagina of the pouch.

3° To describe in the most accurate manner the way the foetus clings to the teat. They should determine this by observations of several specimens of different ages, and repeat, if possible, on the Didelphides, the curious experiments made by Collie and Morgan on the mammary foetus of a Marsupial of an entirely different family.

4° To determine exactly and analyse the liquids contained in the breasts of the dam, and the digestive organs of the mammary foetus.

5° To examine in the living subjects the remarkable arrangement of the respiratory organs, discovered by Geoffroy Saint-Hilaire, which establish a connexion between the posterior nostrils and the cavity of the larynx.

We are entirely without notions concerning the abdominal folds, which, in this kind, take the place of the pouch, in a certain degree, and know nothing of the modifications these folds pass through in the different epochs of gestation.

Anthropology.—The countries to which these instructions are adressed to are doubtless among those where naturalists can collect the greatest number of interesting facts for this branch of natural history, formerly neglected and to which has been given, for some years past, an impulse worthy of its high importance. In Mexico and in the United States three of the principal human races are found together; the race peculiar to America, the Caucasian race from different countries of Europe, and the Ethiopian carried over in its train. All these races cross-breed, and from the crossing of the half-breeds with them and each other, result many curious combinations, whose scientific study is of the highest interest.

It has unhappily been, for a longtime, as difficult as it is important. If the plain and marked characteristics of the two animal species often disappear; if a skilful analysis, enlightened by direct comparison with analogous objects, can alone discover them, how can the anthropologist size between two neighbouring types, express and transmit by description, light, fleeting distinctions, some times invisible for him, who has not the habit of observing them?

Three inventions or new application, made almost simultaneously, have happily removed part of

the great difficulties, and opened a new era in the natural history of man; the daguerreotype, which fixes and engraves with geometrical precision, the general shape of the body and the features of the face; the Cephalometer of Antelme M. D. which measures and sketches with a process almost as exact, the dimensions and forms of the head, and enables one to determine, as nearly as possible, the mean dimensions and typical form of the head of a people the sex and age: in fine, the perfection and happy application to anthropology of the process of moulding, performed directly, or by the aid of the ingenious physionotype of M. Sauvage; a process by which the whole head and, if necessary, the members of the body are preserved and placed before our eyes.

We have the hope that, with the aid of the Daguerreotype and physionotype, the american naturalists will enrich anthropology with results of great interest. By photographic portraits, such as those presented to the Academy by M. Thiesson; by mouldings to be added to the fine collection made by M. Dumoutier, now in the museum; by colored drawings, by descriptions and measures, they would transmit us information of extreme precision, true scientific elements, to which the committee would attach the greatest importance.

We think it our duty to direct the researches of the american naturalists, not only to the different varieties of the American race, but also to the half-breeds, yet so little known, of both, and, also, to the offspring of the crossing of the first with the Caucasian race. We request them, as soon as they shall have determined exactly the physical characteristics of these difficult varieties, to neglect no information that may enlighten us as to their intellectual capacity.

We would, likewise, entreat these gentlemen to specify exactly and express by colored drawings done with care, the different states of the hues of the American races and half-breeds, from the moment of their birth up to the period that they arrive at the normal color of their kind.

We would desire them, besides, to collect, of these same races, their half-breeds, and the white race, more minute particulars than as yet obtained, on the duration and difficult phases and epoch of puberty.

Chemistry and agriculture.—These are the principal forms that allow the use of Caoutchouc without dissolving it and without altering the heat.

1° Straight tubes; elbowed tubes; tubes in T of different thickness and diameter;

2° Full cylinders, to be cut in France as wanted;

3° Rectangular plates, cut in France;

4° Caps to cork bottles and flasks.

It would be desirable to examine, in an economical point of view, the question of the preparation of preserved sugar, transportable to France, and giving, by a simple preparation, elastic caoutchouc/

Dye woods and other vegetable products.—Details on the working of dye woods, their qualities, uses, marks, would be interesting for technology.

It would not be less useful to send samples, branches, leaves and flowers of the usual plants, whose products are or may be applied to tanning; the extraction of oils, etc.

Remains of animals.—It is known that domestic animals, transported by Europeans to America, have multiplied and spread. It results from this that products which in Europe and particularly in France, are needed by agriculture and the different arts, are in great part lost in Brazil and several countries of south America. To send them to France or our colonies should be prepared:

1° For manure, blood coagulated by heat or lime, and dried;

2° For nourishment or manure, dried flesh;

3° Intestines prepared and dried which, blown up, might be employed to hold and preserve aliments which might be utilised as primary matters for different fabrications, such as for harmonic chords, whip cords, rattles, machines, gold beaters skin and cartridge paper; applications which one of the committee, M. Payen, discovered, by and which would employ all the remains of intestines useless for the usage we have described;

4° Tendons for glue factories.

There are other animal remains whose use has been long appreciated, horns, and feet, and skins. But the transportation of the first might be rendered less expensive by first pressing them down, and the last are, as it is known, often attacked on shipboard by insects. To prevent these injuries so hurtful to commerce the employment of different substances should be tried such as pyroligneous acid, the chloride of lime, the bichloride of mercury.

If naturalists wish to try these different processes, we doubt not that merchants, for whom this question is one of great interest, will assist their experiments by all the means in their power.

An appeal is likewise made to agriculturists for seed of north American forest trees.

FOOTNOTES:

- [1] About two hundred volumes, bound three maps and four cases of minerals were transmitted.
- [2] According to this resolve 150 volumes of legislative documents, 13 copies of the geological reports, 52 scientific reports, 20 maps, have been transmitted.
- [3] About two hundred volumes of legislative documents, and 10 copies of the natural History, of New-York, with 10 Geologic maps, destined to the king, the chamber of peers, the chamber of deputies, the royal library, the ministers of justice, of public instructions, of commerce, of finances and to A. Vattemare, were transmitted.
- [4] On mountains, each species of plants only grows to a determined hight, trawellers 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.

Note de transcription:

La Table des Matières au début de ce livre électronique a été ajoutée pour faciliter la navigation. Les tables, dont l'une se trouvait sur les pages 46 et 48 et l'autre sur les pages 47 et 49, ont été reconstituées.

Transcriber's note:

The table of content at the beginning of this e-book was added for the reader's convenience. The table originally printed on pages 46 and 48, and the table originally printed on pages 47 and 49 have been reassembled into their proper order.

FINIS.

*** END OF THE PROJECT GUTENBERG EBOOK MOVEMENT OF THE INTERNATIONAL LITERARY EXCHANGES, BETWEEN FRANCE AND NORTH AMERICA FROM JANUARY 1845 TO MAY, 1846 ***

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