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#### *About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

EARLY REFERENCES TO MEXICAN PLANTS IN NON-BOTANICAL LITERATURE

1. ANGHIERA, Pietro Martire d' (Peter Martyr)  
DE ORBE NOVO 1501?-1530  
(English translation 1912)
2. FERNANDEZ ENCISO, Martin SUMA DE GEOGRAFIA 1519  
(English translation 1541; reprinted 1932)
- \*3. FERNANDEZ DE OVIEDO Y VALDES, Gonzalo  
SUMARIO DE LA NATURAL Y GENERAL HISTORIA DE LAS INDIAS 1526  
(reprinted 1858)
- \*4 " " HISTORIA GENERAL Y NATURAL DE LAS INDIAS 1535  
(reprinted 1851-1858; English translation 1625)
- \*5. LOPEZ DE GOMARA, Francisco HISTORIA GENERAL DE LAS INDIAS 1552-1553  
(reprinted 1858)
6. EDEN, Richard THE FIRST THREE ENGLISH BOOKS ON AMERICA 1555  
(reprinted 1895)
7. GALVAO, Antonio TRATADO DOS DESCOBRIMENTOS ANTIGOS 1555  
(English translation 1601; reprinted 1862)
8. GRYNÆUS, Simon ed.  
NOVUS ORBIS REGIONUM AC INSULARUM VETERIBUS INCOGNITARUM 1555
9. GIRAVA, Geronimo DOS LIBROS DE COSMOGRAPHIA 1556
10. TAMARA, Francisco EL LIBRO DE LAS COSTUMERES 1556
11. RAMUSIO, Giovanni Battista NAVIGATIONE ET VIAGGI 1563-1565
12. BENZONI, Girolamo LA HISTORIA DEL MONDO NUOVO 1565  
(English translation 1857)
13. LOPEZ DE VELASCO, Juan  
GEOGRAFIA Y DESCRIPCION UNIVERSAL DE LAS INDIAS 1571-1574  
(reprinted 1894)
- \*14. ACOSTA, Jose de HISTORIA NATURAL Y MORAL DE LAS INDIAS 1589-1590  
(reprinted 1940; English translation 1604)
15. BOTERO, Giovanni RELATIONI UNIVERSALI 1591
16. BRY, Johann Theodor de  
AMERICA NONA ET POSTREMA PARS DE NOVI ORBIS NATURA 1594
17. HUYGHEN VAN LINSCHOTTEN, John  
DISCOURS OF VOYAGES INTO YE EASTE AND WEST INDIES 1598
- \*18. VARGAS MACHUCA, Bernardo MILICIA Y DESCRIPCION DE LAS INDIAS 1599  
(reprinted 1892)
- \*19. CHAMPLAIN, Samuel A NARRATIVE OF A VOYAGE TO THE WEST INDIES AND  
MEXICO 1599-1602  
(English translation 1859)

20.	HERRERA Y TORDESILLA, Antonio	DESCRIPCION DE LAS INDIAS OCCIDENTALES	1601
21.	"	HISTORIA GENERAL DE LOS HECHOS DE LOS CASTELLANOS EN LAS ISLAS Y TIERRA FIRME DEL MAR OCEANO	1601
22.	DU BARTAS, Guillaume de Saluste	WORKS (English translation 1935-1940)	1605
*23.	TORQUEMADA, Juan de	PRIMERA SEGUNDA Y TERCERA PARTE DE LOS VEINTE Y UN LIBROS RITUALES I MONARCHIA INDIANA (reprinted 1943)	1612
24.	PURCHAS, Samuel	HIS PILGRIMAGES (HIS PILGRIMES)	1613
25.	BERTIUS, Petrus	DESCRIPTION D'AMERIQUE	1622
26.	ORDONNEZ DE CEVALLOS, Pedro	PARTICULIERE DESCRIPTION DE L'INDE OCCIDENTALE	1622
27.	INGA, Athanasius	WEST INDISCHE SPIEGEL	1624
28.	SOLORZANO Y PEREYRA, Juan de	POLITICA INDIANA (reprinted 1776)	1629-1679
29.	GOTTFRIED, Johann Ludwig	NEWE WELT	1631
30.	LAET, Johannis de	NOVUS ORBIS	1633
*31.	GAGE, Thomas	THE ENGLISH AMERICAN-HIS TRAVAIL BY SEA AND LAND	1648
32.	MARCGRAV DE LIEBSTAD, George	HISTORIA RERUM NATURALIUM BRASILIAE	1649
33.	PISO, Willem	DE MEDICINA BRASILIENSI	1649
34.	" "	DE INDIA UTRIUQUE RE NATURALI	1658
*35.	COBO, Bernabe	HISTORIA DEL NUEVO MUNDO (reprinted 1890-1895; 1943)	1653
36.	PEAKE, Thomas	AMERICA	1655
37.	SANSON D'ABBEVILLE, Nicolas	L'AMERIQUE EN PLUSIEURS CARTES ET EN DIVERS TRAITES	1656
38.	FRANCISCI, Erasmus	OST UND WEST INDISCHER WIE AUCH SINESISCHER LUST UND STATS GARTEN	1668
39.	MONTANUS, Arnold	DIE NIEUVE EN ONBEKENDE WEEWELD	1671
40.	OGILBY, John	AMERICA	1671
41.	EXQUEMELIN, Alexandre Olivier	DE AMERICAINSCHE ZEE-ROOVERS (English translation 1684)	1678
*42.	DAMPIER, William	A NEW VOYAGE ROUND THE WORLD (reprinted 1927)	1698-1709
43.	WAFER, Lionel	A NEW VOYAGE AND DESCRIPTION OF THE ISTHMUS OF AMERICA (reprinted 1904, 1913)	1699

44. BIRON, C.	CURIOSITEZ DE LA NATURE	1703
45. HELLEGARDE, Jean Baptiste	Morvan de (pseud. Moner. Du Perier HISTOIRE UNIVERSELLE DE VOYAGES (English translation 1708)	1707
46. COREAL, Francois	VOYAGE AUX INDES OCCIDENTALES	1722
47. LABAT, Jean Baptiste	NOUVEAU VOYAGE AUX ISLES DE L'AMERIQUE (abridged edition 1931)	1722
48. RIVERA MARQUEZ, Pedro	CONTINENTE AMERICANO	1728
49. BOTURINI BENADUCCI, Lorenzo	IDEA DE UNA HISTORIA GENERAL DE LA AMERICA SEPTENTRIONAL	1746
*50. VILLASENOR Y SANCHEZ, Joseph Antonio	THEATRO AMERICANO	1746
51. PEREZ DE TORRES, Simon	DISCURSO DE MI VIAJE	1749
52. OCH, Joseph	NACHRICHTEN VON SEINEN REISEN NACH DEM SPANISCHEN NORD AMERIKA (reprinted 1809-1811) 1757-1767	1757-1767
53. ANONYMOUS	AN ACCOUNT OF THE SPANISH SETTLEMENTS IN AMERICA	1762
54. "	DAS SPANISCHE REICH IN AMERIKA (sometimes attributed to John Campbell)	1763
55. COOK, LIEUTENANT	REMARKS ON A PASSAGE FROM THE RIVER BALISE IN THE BAY OF HONDURAS TO MERIDA	1769
56. ULLQA, Antonio de	NOTICIAS AMERICANAS	1772
57. WINTERBOTHAM, W.	AN HISTORICAL GEOGRAPHICAL COMMERCIAL AND PHILOSOPHICAL VIEW OF THE UNITED STATES OF AMERICA AND THE EUROPEAN SETTLEMENTS IN AMERICA AND THE WEST INDIES	1796

INFORMATION WANTED PLEASE

Cosineo, Godefredo	De la Naturaleza del Mundo	1614
Postillo, G.	De las Maravillas del Mundo	1553
Wilfliet, Cornelius de	Noticias del Occidente	1598

Prepared by  
Ida K. Langman  
Academy of Natural Sciences  
Philadelphia

Background - collecting in Mexico

Scope

Verdoorn

Olaguibel 1889 Mem Bibl Cient Mex 19th

Leon, 1895 866 items 2 $\frac{1}{2}$  mos

Martinez, 1924

Maldonado, 1947

instructions, Aztec botany,

vocabularies, maize

Guerra

Plan of work

books, periodical literature

Mexican standards and needs

Bol. Soc. Agrop. Mex.

Vol 10 - 1906-7

566-569

El Estado de Oaxaca

599-601

614-616

626-628

with list of important trees

642-645

Common names

previous "

scientific trees

anon

ref.

when done

where done

Phila

other cities in US

Mexico

private libraries

Plan of arrangement

Miscellaneous

travel and description, geographic

economic, anthropologic,

history of botany

vocabularies

text books

Taxonomic ; economic botany; phytogeography

Jl. Sa. Ag. Int.

Vol 35-1911-

Arum

446-447

El. J. n. to Hawaii -

*Arum zibethicum*  
on notes in Van Cuy

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Plan of work

Bibliographies

Union ~~xxx~~ list of serials

~~Max~~ Index Kewensis

Problems

locating the works (citing only  
works seen )

works lost, discarded, not available

incomplete sets of journals

errors - ULS; Ind Kew

citations

various eds

reprints in various journals

publisher's name

annotations, abstracts

*Assis's work* →

Bol Soc Agr Mex

Vol 11- 1887-8

586-7

de la craca o palma Anon  
de que se tejen sombreros de  
Jipijapa

Preparation for printer ---

checking - *show slips needing checking*  
typing triplicate copies - *errors corrected*  
rechecking  
filing  
index *present needs*

Publication *typist*

maps  
slide

Publications

Bol Soc Agr Hort

Vol 35-1911

El garbanzo Anon

Cicero (?) Aristinum

No 4 - No 5

(En Agr Esp de Rio Verde -)

Sept 1963

I've prepared these sheets with the idea of making this report as short as possible. And while you finish distributing them, I'll go right ahead. If you're interested in keeping these lists I'll be very happy to have you take them with you. If not, please pass them back to the aisle when I have finished and I'll collect them.

As some of you know, I have been engaged for several years in the compilation of a bibliography of the literature on Mexican flowering plants. My report today covers the first section of that bibliography (non-botanical works published before 1800) which contain descriptions or references to Mexican plants. To be

700 items

700 items

complete, this report should include also Section 2 of my manuscript, which covers similar works, but works that are limited to Mexico. The titles cited today, you will notice, are wider in scope; dealing with the western hemisphere, or even the entire world at least as it was known at the time of writing. Time will not permit including both sections today.

~~will not permit including both sections today~~, so I am limiting myself to the more general works, omitting the ones dealing specifically with Mexico. In this way, I hope my report today will be of interest not only to those who have botanized in Mexico, but also to those who have collected in other parts of Latin America, and of course, also to those who are just

hem

interested in historical studies of plants in general. I've kept the information on these sheets down to a minimum. If any of you are interested in more data on any of these titles, I shall be glad to supply whatever additional information I may have. Nor do I intend to discuss with you every title I have listed. The starred items, are in my opinion, most likely to be of interest to botanists, but that is of course only one person's opinion.

Many of these works make exceedingly interesting reading in themselves, but only in a few cases have botanists done anything to provide much needed identification of or commentaries on the many plants mentioned. Perhaps this talk will stimulate some of you into undertaking some such project. Let me then offer some brief comments on a selected few of the titles and then if there is time, I'd like to show you a few slides of plates taken from some ~~a few~~ of the books.

1. Anghiera: The first author on the list may be more familiar to you as Peter Martyr. Nicolas Leon, the Mexican bibliographer, cites him as Pedro Martyr de Angleria. Perhaps the Italians

would list him as Martire. In any case, the author in question, an Italian, was at the court of Spain as a chaplain and tutor, when the New World was discovered and he received the first reports as they came in, from Columbus on. He began writing his Decades, as they are called, in 1494; the first was published in Italian early in the 1500's and the first Latin one in 1511. The fourth and fifth decades, the ones in which I am most interested were published early in the 1520's. The fourth refers to Campeche and Yucatan, the fifth to Mexico proper.

2. Fernandez Enciso: The second work was printed in the year that Cortes entered Mexico City so it could be considered a little early for references to Mexico. But Yucatan was discovered, I hate to use that word

for a land already inhabited, by Francisco Fernandez de Cordoba in 1517, and explored by Juan de Grijalva in 1518. so perhaps we're not too early. In fact, ~~some~~ <sup>as a result</sup> of the works I have listed ~~may not~~ refer specifically to Mexico, although they all mention plants found in Mexico.

3. Fernandez de Oviedo y Valdes-Of the two works listed here, the Historia General is by far the more important. By the way, if you have known this author by the name of Oviedo, you have Library of Congress sanction for calling him that, but all my Spanish speaking friends <sup>1711</sup> say Fernandez de Oviedo is correct. ~~XXXXXXXXXXXX~~ ~~XXXXXXXXXXXX~~. In any case, the author was a director of mines in Haiti for 12 years and his

writings cover many topics-navigation, geography, climate, mining, history, government as well as information on the flora and fauna of the region. The section on plants is found in Books 8-11 in Part 1.

5. Lopez de Gomara This author was the official historian for Cortes, and the section which refers to Mexico is sometimes called Historia de la Conquiata de Mexico.

6. Eden-Here you have a writer whose techniques were duplicated many times-by Grynæus, Ramusio, de Bry, Purchas, Gottfriedt, Dampier, Bellegarde, etc. where reports of various travellers were translated, collected and edited, over and over and evidently found a market. The same thing will happen I suppose, when the first space ships return from the moon or Mars, or wherever their first trip will be.

10. Tamara-I call your attention to this author because he devotes a special section of his book to Mexico and Yucatan.

12. Benzoni- was one of many authors to come who showed a particular interest in cacao and chocolate. A little later I'll show you a few pictures from this work-one of them was reproduced, by the way in the most recent Russian work on cultivated plants. Here is Benzoni's description for making chocolate:

*of cacao & chocolate*

Cacavate-fruit like almonds lying in a shell resembling a pumpkin in size. When the season has arrived, they pick out the kernels, and lay them on mats to dry. Then they roast them in an earthen pan over the fire, grind them with the stones they use for preparing bread. Finally they put the paste into cups made out of the calabashes produced by certain tree, and mixing it gradually with water, sometimes adding a little of their spice, they drink it-though seemingly more suited for pigs than for men

Benzoni

14. Acosta: was in Panama, Peru and Mexico between 1570 and 1587. His work is in seven books, the fourth of which is concerned with natural history. The section on plants gives descriptions of about 50 plants common in Mexico.
17. Huyghen van Linschotten: This work was published in 4 books, with the second on Mexico.
18. Vargas Machuca: Of this work Nicolas Leon says: "The greater part of the medicinal plants mentioned belong to the Mexican flora. The entire work is of the greatest importance for the americanist, and equally so for the botanist and medical man".
19. Champlain: Most of us I imagine, associate Champlain with Canada and northern United States, but he wrote this brief yet observant report with an account

of farming in Mexico and references to about 25 plants and their uses. Here is his description of an avocado which he calls accoiate. I'll show you the picture later.

"Accoiate-the size of winter pears; very green outside; when the skin is taken off a very thick flesh is found, which is eaten with salt and has the taste of kernels or green walnuts; there is a stone in it the size of a walnut of which the inside is bitter". (Picture has serrate leaves)

22. DuBartas: I mention this author only because Nicolas Leon lists him as Dubarts, without the title of a work and says "French poem in verse which refers to the maguey. Printed in 1610". And then he goes on to say "In my files I have this note and don't

remember where I got it", You can imagine the ~~ixix~~ time I had tracking it down. The references to maguey, are <sup>in fact</sup> by the Aztec name metl, and are very brief

23. Torquemada: The most interesting parts of this work for the botanist are the two chapters on useful trees in the 14th book of the second volume. Only four copies of the first edition of this work are known-Paris, Valparaiso, RPJCB and Pomona College in California.
30. Last: Here I might remind any of you who have been working in Chiapas, the Mexican state which borders on Guatemala, that until 1820, Chiapas was part of Guatemala; so in early ~~xx~~ works like this one which refers specifically to Chiapas, one must search for it in the section on Guatemala

31. Gage: Here is an author who could be classified as the 17th century tourist. He spent 12 years in Guatemala and I find most Latin Americans quoting him freely. But I came across a criticism of him by another Anglo Saxon by the name of Cullen, who said, "Gage appears to have delighted in the invention of falsehoods".

32 and 33-Marcgrav and Piso

I call special attention to these two writers, because one might not think of looking in works on Brazil for references to Mexican plants. Marcgrav as a matter of fact, quotes extensively from Francisco Ximenez, who wrote the famous *Quatro Libros de la Naturaleza*, based entirely on Mexican plants.

Cobo- 35- Of this work, which was written in Lima in 1653, Nicolas Leon waxes most enthusiastic. He says, "This is a perfectly written work and the plants are described in a masterly manner. It is the finest complement to the work of Dr. Hernandez" who was commissioned, you may remember to go to Mexico at the close of the 16th century and bring back descriptions and illustrations of the Mexican flora and fauna.

37. Sanson-I call this to the attention of Dr. McVaugh who has been workign in the Mexican state of Jalisco. It contains a special section on the region around Mexico City and one on Guadalajara.

39 and 40. Montanus and Ogilby: Sabin, in his monumental catalogue of works on America, says of

Ogilby, "This is an impudent plagiarism of Montanus, even to plates". This criticism is only partly true. Ogilby does seem to base most of his work on Montanus without giving Montanus credit, but as far as Mexico is concerned, Ogilby gives more details than Montanus.

41. Exquemelin-Even a book on pirates turns up information on plants, and this one is of particular interest for Mexico because it is preceded by a poem called *Descripcion de las Islas del Mar Atlantico y de America*, written by Miguel de Barrios. The poem contains very interesting references to Mexico and particularly to the state of Michoacan.

42. Dampier: This might be just another collection of voyages, but the section on plants, while not as extensive as that on animals, was done by the botanist John Ray, and is therefore I think worthy of note.

43. Wafer: Here it is the French versions of around 1706 that are of particular interest, because they had added to them, without any indication that it is not part of the original work, an entire section on Mexico. This was a report prepared by a Spanish ship captain and does not appear on any of the other editions.

46. Coreal: This is of interest because the authorship is uncertain. The work is supposedly a translation from the Spanish, but the Spanish original is lost. There is a manuscript for someone to try to locate.

The last 3 items are works to which I have references but I have not been able to locate copies of them anywhere in this country. If any one can help me with their whereabouts, I shall be most grateful.

*Illustrations are taken from  
Ovidio, Bonzoni, Champlain  
Francisco, Montanus, Pison*

My report will be in the nature of explanatory comments to the list I have put in your hands, but first I want to make some general statements by way of introduction. In the first place you will note that there are many references to works on the West Indies. This is because in the earliest reports on the New World, it is often difficult to distinguish Mexico, or for that matter Florida or northern South America, from the islands. The early travellers just described the regions they visited as a single area without differentiation. In addition, even where the areas can be distinguished, when the plants mentioned are common to both regions, it is extremely interesting to note the early observations, since they are in most cases our earliest descriptions of these plants.

A good example of this would be the letter sent by Dr. Diego Álvarez Chanca to the municipal council of Sevilla. Dr. Alvarez was the physician with Columbus on his second voyage, and as far as I can see, his is the first written document with reference to the natural history of America. The letter was written in 1494. Plants mentioned are not given scientific names, but are compared superficially with those known in Europe at that time. (see card for heading and plants.)

The first visitors to the New World were really quite observant and fortunately interested in natural history, especially plants. They are good illustrations of Darwin's maxim that "A traveller should be a botanist, for in all views plants form the chief embellishment".

It is interesting to speculate on the eagerness with which reports from the New World must have been awaited. I imagine the situation was comparable to that which we may see when our first reports come in from the moon. Francisco Lopez de Gomara, quoted in the Cronica de Nueva Espana says, "The greatest event after the creation of the world, with the exception of course, of the Incarnation and death of Christ, was the discovery of the Indies".

Explain marks on paper.

as the  
W. Indies  
Chanca  
Historia de America  
Lib. de Gomara  
Diplomats

## Introduction

South Phila

negro makeup; graduation speeches

Normal School

scarf, walk to school, Jane Green, Roxborough

Negro History week

Poconos

Negro prejudice in old friends

## Causes of prejudice

Fears; frustrations, miseducation, aggression

Montague maturity p 94; war 171

I don't like that man; but you don't know him.

That's why I don't like him

If I ate spinach I might like and I hate the damn stuff

The man convinced against his will is of the same  
opinion still

~~Who on earth ever loved anything because he was told it was his duty to do so?~~

No one can be expected to love his brother just because he is ordered to do so, nor of the brother is not lovable

## Race Mixture

The sociologist who is satisfied with human society as now constituted may reasonably decry race crossing

But let him do so on social grounds only. He will wait in vain if he waits to see mixed races vanish because of any biological unfitness.

see also Montague p 115

Race problems often caste problems. Caste is a specific group whose social status is limited

Half caste-antisocial, outcast, conqueror  
(compare with lobster and milk)

hybrid vigor; ~~sterility~~ sterility in mule an exception

## Rh factor

Serum from rabbit injected with blood of Rhesus monkey will agglutinate certain human bloods.

The ~~xxx~~ peninsula of bone, cartilage and soft tissue which juts out from the face of the white with its stretched skin which becomes so shiny as soon as the sweat begins to break through its enlarged pores is really something of an atrocity. At least any ape would think so.

If it becomes obvious under liberalism that ground is being steadily lost and things are getting worse instead of better and there seems to be no reasonable hope of a reversal of the trend, then radicalism is the only answer and the price must be paid.

#### Eugenics

Let us first give human beings equal social, cultural and economic opportunities and then we shall be able to judge how many, if any, genetically inadequate individuals we have among us.

Two mediocrities may produce a genius. Two geniuses may produce a mediocrity.

Elimination of defectives Boyd 359

Lothrop Stoddard, Madison Grant, ~~Henry~~  
Henry Fairfield Osborn, Houston Stewart Chamberlain  
Joseph Arthur de Gobineau, Seifriz  
General von Bernhardi war is a universal law of  
nature  
Sir Arthur Keith prejudices are inborn

Facts don't always speak for themselves

Descended from the apes! My dear, we will hope it is not true. But if it is, let us pray that it may not become generally known.

#### References

- Benedict, Ruth and Gene Weltfish The Races of Mankind  
Benedict, Ruth Race, Science and Politics  
Ashley Montague Man's Most Dangerous Myth-the Fallacy of Race good for social and economic factors, psychologic factors and race mixture  
Boyd, William C. Genetics and the Races of Man  
Overstreet, Harry The Mature Mind  
Scientific Aspects of the Race Problem Symposium  
Seligman, Herbert Race Against Man who made world's cultures; race migrations;  
Linton, Ralph The Study of Man  
Fairchild, Henry Pratt Race and Nationality

Muy agradecida, Sra Crawford, por esta presentacion tan amable y generosa. Realmente, no la merezco.

Mucho me gustaria seguir hablendoles en espanol, pero ~~xxxxx~~ dos anos de vivir en Mexico, con una ausencia de siete anos entre un ano y el otro, no bastan para dominar el idioma. Y como estoy segura que ustedes todos entienden ~~mejor~~ el ingles mejor que yo puedo hablar el castellano, ~~preferir~~ ~~continuar~~ ~~en~~ ~~ingles~~ ~~mejor~~ ~~que~~ ~~yo~~ ~~puedo~~ ~~hablar~~ ~~el~~ ~~castellano~~, ~~preferir~~ ~~continuar~~ ~~en~~ ~~ingles~~, y como tengo tanto carino para mi patria chica, Mexico, no quiero maltratar su idioma, voy a continuar ~~en~~ en ingles.

Fall 1949.

First, a few words about the title of my talk. I am not going to talk about the botanical aspects of Mexico. I had considered that title when Mrs. C. invited me to be luncheon here. And that I suppose is how the misunderstanding arose. But I decided against it for various reasons. First I felt that I would need more time-time to prepare the material and time to present it here with pictures. Second I wasn't sure that botny would interest a non botanical audience. My experiecne has been that often just the word botany scares away more people than it brings in. (Of course, had I known that tv would be here and a concert ~~singer~~ added attractions I might have reconsidered. Third, I actually spent very little time in the field this year. My job of compiling a bibliography of Mexican flora, kept me pretty well tied down to Mexico City and to the libraries there, so that I'm

really better prepared to talk on activities in Mexico City than on plant collecting activities in the field. However, I have promised Alec that I will speak to one of the dinner meetings later in the year, and perhaps at that time I'll cover the botanical angles of my Mexican experience.

What I am going to talk about are those aspects of Mexican life that I, as a student living and working in Mexico, found of special interest. When I was first in Mexico, over 8 years ago, I was a tourist collecting plants as I travelled through the country. It was those collections that led me later to work on this bibliography of Mexican botany. I began with material in the libraries of eastern U.S., went to Mexico expecting to cover all the material in Mexican libraries, hoping later to finish with collections in western U.S. However, the

year in Mexico proved to be just long enough to cover only about half the material in just Mexico City libraries so that I hope that some day, in the not too distant future, I can go back and finish the job.

First then, ~~xxxxx~~ ~~xxxxx~~ ~~xxxxx~~ ~~xxxxx~~ ~~xxxxx~~ let me tell you about Mexican libraries, since that was where I spent most of my time. My first surprise came when I realized that there were more than 50 libraries in Mexico City alone that had worthwhile collections of scientific material. True some of them were not very well organized and many of them have lost a lot of the material they once contained. But when one considers the background of political disturbances in Mexico, and all the difficulties under which Mexican libraries have had to function, the wonder is that they have conserved as much as they have. Mexican librarians are notoriously underpaid and partly because of that and partly because

no training is provided, the condition of any library depends entirely on the qualities of the people who happen to be in charge and those who work there. Mexican libraries have suffered from an almost fatal lack of continuity in their personnel<sup>and</sup> that, more than anything else, I think has been responsible for their present condition especially for the disappearance of valuable items. When an employe is miserably paid and has no security in his position, it is not too difficult to tempt him to sell some rare and precious book or manuscript. Much of this material has ~~xxxxxx~~ in this manner reached U.S. libraries, or else in legitimate sales, we of course have been able to outbid Mexican offers. When Mexican first complained to me about how we had ransacked their libraries, I felt very guilty and could only defend myself by saying that I hadn't been a party to any of the sales. Later, I stopped apologizing. At least, in our libraries

the material has been preserved and nowadays, with microfilms and photostatic copies, no library need be without material it wants from any other library.

However, whether the librarians were well trained or not, whether they were efficient or not, their kindness, their courtesy, their interest in helping those who came to them, could not be beaten anywhere. ~~xxxxxx~~ ~~xxxx~~ And lest I leave the impression that all Mexican libraries are badly organized, let me say that several of them are in excellent condition and the number is growing steadily. In this group I would put the Instituto de Biología, the Museo Nacional, the Secretaria de Hacienda and the Hemeroteca Nacional. You may wonder about the Secretaria de Hacienda-what would a botanist be doing in what corresponds to the Treasury Department? Well, it has one of the finest general libraries in all of Mexico and the same is true of the library of the State Department

I am told, the Secretaria de Relaciones Exteriores, That's one of the libraries I still have to examine and it was partly because ~~that~~ botanical is so widely dispersed in so many unexpected places that my job took so long. At any rate, Sr. Roman Beltran, director of the Hacienda library is doing an excellent job and is one of the kindest, most gracious and helpful persons that it has ever been my pleasure to meet. The same is true of Sr. Rafael Carrasco Puente of the Hemeroteca Nacional. I learned that word in Mexico-a companion to biblioteca-only it has to do with collections of periodical literature-magazines, newspapers, etc. Do we have such a word?

And if you are ~~xxxx~~ one of those who still thinks that Latin Americans always take it easy, stop into the Library of Congress-right opposite the Cafe de Tacubambá evening. It is the only big library I know in Mexico

that is open until ten o'clock at night. It takes care of an enormous number of readers and has the quickest service of any library I have ever seen. In fact every time I was there, I felt as if I were in a railroad station-with people coming, getting their books, returning their books, leaving, all in an endless stream.

libry

Owners of private collections were equally kind. Even such reputedly hard nuts to crack as the two largest librerías that specialize in rare Mexican books—the Porruas—opened up their stacks to me, gave me a desk at which to work and did everything they could to facilitate my researches. As a matter of fact, the only refusal I had was from a non-Mexican—~~an~~ Englishman who was ~~xxxx~~ supposed to have a very fine collection of rare Mexican books but would not give me permission to see it because, he said, it was in the process of being catalogued.

One of my ~~most~~ <sup>most</sup> interesting experiences with Mexican libraries was way down in Chiapas. I arrived in Tuxtla Gutierrez, the capital, ~~xxxxx~~ on one of my field trips when Mexico City libraries were closed for the Christmas holidays. Finding the small library there open, I

went in, found a ~~small~~ <sup>small</sup> very nicely set up library run by a very competent, and very friendly librarian. He not only helped me with the collections in his charge, but put me in touch with everyone in the town who had any kind of collection. And as a result of these contacts, I learned some very interesting things about life in the more remote provincias of Mexico—the places which up until recently were quite isolated from the rest of Mexico—particularly from the capital. In those places, cultural activity, if there was to be any, had to come from the residents themselves. And here, I found a most interesting group of people—people interested in literature, history, archaeology, science, music, art—They have an active Ateneo which meets regularly. They publish several newspapers. One of the men,

director of the Zool Garden and Museum—does everything from going out to hunt the animals, kills and stuffs the museum specimens, mounts and displays them and on the side, carries out magnificent bird studies—writes them up and illustrates them with exquisite water color sketches. The director of the art school has a side interest in anthropology and has made himself a near expert in the folk culture of Chiapas—going as far as several times visiting the Lacandon Indians in the Chiapas jungles—the last time on the expedition that ended so tragically in the death of two of his best friends—Carlos Frey the American discoverer of the wonderful ruins at Bonampak, and Franco Gomez, talented young Chiapas artist whom he had discovered and trained.

In Chiapas, too, I renewed acquaintance with Dr. Jimenez Gamboa, whom some of you may remember when I brought them to one of our summer luncheons some years ago. He is now directing the state hospital there and doing ~~an excellent~~ <sup>very</sup> ~~job~~, although like so many Mexicans, pining to be back in the capital. Speaking of doctors reminds me of Dr. del <sup>U</sup>usto whom others of you may remember. He with a group of young doctors who studied here in Philadelphia has organized a kind of miniature Mayo clinic with doctors of different specialties pooling their knowledge to treat their patients. They have regular staff conferences to discuss their findings and just before I left had been invited to Morelia to present their plan and techniques to a group of doctors there. And while on the subject of medicine, how many of you know that Mexico's Instituto de Cardiología has developed such a high reputation ~~in some of its~~ <sup>in some of its</sup> ~~foundations~~ <sup>foundations</sup> ~~some years ago that~~



The meetings were a wonderful education as speakers ranged from medicine, zoology, paleontology, geology, chemistry, botany, etc. The entire group was an alert stimulating one, fully informed on scientific developments all over the world-not only in Mexico. At one meeting, the guest speaker was Dr. Selman Waxman, discoverer of streptomycin. He spoke in English and ~~the~~ It seemed to me that the entire audience ~~not only~~ followed him closely, ~~laughing~~ laughing at his jokes-which is a real test-isn't it? and then at the end, asking him questions in English. The feminists here will be gratified to know that I was invited to speak at one of the meetings and, at least during my year there, I was the only woman conferencista,

While I'm on the subject of conferencias, I might say a word about the Mexican manner of handling what might be called a program of adult education. Every

department, or school of a university, arranges for its staff members to give a series of lectures during each semester. Every field is covered, and it is the top cadetraticos who give the courses-which are free and open to any one who wants to attend, and they are well attended-even when the courses are on philosophy. This year of course, the drawing card was existentialism and Mexicans were as hotly divided into pro and cons on this topic ~~as~~ Americans or even Frenchmen.

In addition there is a government sponsored Colegio Nacional, which ~~sponsors~~ sponsors lecture courses by every leading figure in Mexico's intellectual life. Artists, writers, philosophers, historians, musicians, scientists, the top names-Rivera, Azeula, Castro Leal, Vasconcelos, Ochoterena Chavez-the doctor and the musician, all are on the program and for their work in this field they are subsidized by the government. Here again the courses are free and open

to the public. They are run on a very business like basis too. They are scheduled for an hour, open promptly close exactly at the end of the hour-except on the case of Diego Rivera who in this as in everything else is a strict non conformist. Oh, as a matter of fact, with the exception of Rivera this meticulous punctuality was ~~most~~ notable that when Dr. Northrop, the American philosopher came to give a series of lectures, I had to apologize to some Mexican friends because his talk extended so far over time.

I don't think I need comment here on the great number and high quality of Mexican art exhibitions-not on the magnificent interest shown in these exhibitions by the public as a whole. But I might say a word about the musical activities in the capital. Mexicans are avid ~~lovers~~ lovers of good music. Orchestra concerts are very well attended and when foreign artists come

and most of them come sooner or later, the house is sold out days in advance. They are wonderful audiences too I'll never forget the concert at which Ruggiero Ricci gave an excellent recital at the end of which he was showered with flowers by the people on the front rows.

In fact, from certain points of view, Mexico is slightly ahead of us I think ~~from the~~ as regards ~~certain~~ aspects of culture. Centennials and bicentennials of world famous figures are matters of year long observance with the newspapers, schools, private societies all taking part. I had a feeling, tho I may be wrong, because I was not here, that Mexicans were much more conscious of Chopin and Goethe and Strindberg than we were.

Even in the field of the theatre, Mexico is waking up. The theatre in ~~Mexico~~ Latin America has

never a particularly bright part of the picture. But Mexico now has an experimental theatre headed by a Japanese Mexican who has studied in England and the U.S. and whose performances, he is the director, are uniformly excellent. Whether it be a performance of The Taming of the Shrew, or an adaptation of Mice and Men or a really outstanding version of Street Car Called Desire, he gives his audiences a never to be forgotten evening. In fact his plays have reached the point where they extend into several month runs that remind one of Broadway, and that I understand is really breaking precedents not only in Mexico but in all Latin America.

I'd think I'd better close now. But I don't want to do so without saying a word about the cultural

activities of our own state department. Whatever disagreements any of us may have with other aspects of state department policy, there can be no question about the wonderful job that is being done in intercultural relations-although perhaps a Mexican would better be qualified to speak on that subject. However, I saw the Benjamin Franklin library in action, and wish I could have seen the branches that have since been established in Guadalajara and Monterrey. When Miss Bertha Harris the director of the Library died recently-very suddenly Mexico lost a real friend. The scholarships provided, the programs planned at the American Mexican Cultural Institute are I think worthy of the highest praise. I just wish more money could be provided to make available more classes in English, the demand is terrific and is never satisfied and I wish the classes could be free. If the Alliance Francaise can do it, why can't we?

Perhaps the best proof of the friends we have made was the Fourth of July program that was prepared by Mr. Raine and his staff in the Cultural Relations Department. I went expecting to see mainly fellow Americans and was agreeably surprised to find that at least two thirds of the audience was Mexican and was even more surprised to find that the whole program was given in Spanish-with the exception of the singing of the Star Spangled Banner of course. I was very proud of us that evening and if the American friends I had brought along that evening can be taken as a criterion, the program was most successful from the Mexican point of view as well.

Bueno, no les voy a cansar mas. Muy agradecida por su amable atencion. He dicho

There will be more highlights of travel than of study I think in my talk tonight. The main reason <sup>is</sup> that I have more pictures <sup>and notes</sup> my travels than my studies, and since <sup>there</sup> ~~there~~ are quite numerous, I'll take just a few minutes to review <sup>some of the</sup> ~~my~~ research activities and use the rest of my time for travel.

My first Mexican trip was a summer <sup>trip</sup> ~~trip~~ in which ~~we~~, my husband and I, visited the usual tourist haunts - from the border to Mexico City, south to Tasco, Cuernavaca and Acapulco, west to Toluca, Morelia, Uruapan and Guadalajara, and south east to Orizaba and Oaxaca. However, the <sup>travelling</sup> ~~outing~~ was combined with a little botanizing - the plant press was in the car and whenever I saw a likely looking specimen, we did some collecting, if I could get Oscar to stop the car in time. When we were

*Is in the same*

on mountain roads, as we often were, we couldn't always find a straight enough stretch where we could stop, so that often I collected something quite different from the plant I wanted. But Mexican flora is so different from that of Pa, that there never was a stop that was wasted.

At the end of the summer, I brought back a fair collection of plants to the Academy of Natural Sci. and along with the collection an overwhelming desire to return to Mexico. This we did the following year when I was on sabbatical leave from school. In 1940 prices were such that two people could live on one salary without too much difficulty. However, the budget had to be watched very carefully, so there was less traveling than we would have liked. We used our previous summer's experience to help us

select the places where we could live most comfortably and then I arranged a schedule that would bring us to each place at ~~about~~ season when I could carry on my collecting. altho with a 6 months dry season that <sup>was</sup> ~~was~~ easier said than done. The first two months, July and August were spent in Mexico City; in September we went back north to Monterrey and stayed ~~for two months stopping at Tampico and Saltillo~~ ~~for two months stopping at Tampico and Saltillo~~ into October, using part of the time to visit Saltillo. Torreon and Durango to the west. On the way back to Mexico City, we stopped at Tampico and San Luis Potosi. After a short ~~stay~~ to send out plants, we left the capital again <sup>stay</sup> this time west to Guadalajara where we stayed for two months, taking a side trip to Colima at Christmas time. January was spent in Uruapan, February in Acapulco and March on the east <sup>side</sup> ~~side~~ - Jalapa, Orizaba, Fortin and Veracruz. April saw us in Oaxaca at the height of the

dry season, and it was dry, and then in May we were on our way home. For <sup>we</sup> ~~we~~ stayed in Cuernavaca while we made <sup>final</sup> ~~last~~ arrangements - driving up to the capital whenever it was necessary. In June, the money having given out, we left for home, wondering when we would return again.

<sup>That</sup> ~~That~~ time my collection was of course much larger and when I started on the task of trying to identifying the <sup>plants</sup> ~~material~~, I found it almost impossible. There was no simple guide to the flora of Mexico nor a simple guide to the literature on the flora. So most of the plants were identified in Washington where I had <sup>sent</sup> ~~sent~~ duplicates. while I kept wishing some one would put out a book on the plants of Mexico. ~~There~~ A beginning toward this end has recently been made, but the project is still in its infancy. In the meantime, I was <sup>still</sup> ~~still~~

to completion

working at Penn<sup>a</sup> for my master's degree and in discussing possible theses problems, my adviser, Dr. Fogg came up with the suggestion that started me off on my present work. I had said I would like to combine my background of botanical studies, with my knowledge of Mexico, such as it was, with my interest in foreign languages. The suggestion was that I prepare a bibliography on the botanical literature of Mexico. That was in 1945 and I'm still at it.

*Thunberg*

I covered first material in Philadelphia libraries, moved on to New York and Washington and the summer after getting the degree was investigating collections farther afield, Harvard, Providence, Cleveland etc. By that time I realized the enormous task I had undertaken but it was too late to turn back. I had been told that the bibliography when and if it were ever finished, would be a

very useful tool for those working in Mexican botany and besides, I was enjoying the work so much that nothing could have persuaded me to drop it. But it also had become clear that to complete the bibliography, I would have to return to Mexico to cover material that had never reached the United States. And that was the opportunity I had last year with the help of a grant from the Cultural Relations Dept of the State Dept.

Although I did get out in the field on several collecting trips this year, the greater part of my time was spent in libraries, checking their catalogue and shelves for material on Mexican plants. The amount of material turned out to be much more voluminous than I had expected and I returned with my job about half done. Whether I shall be able to return to complete the

work is shrouded in the future. Right now I am hard at work putting together the material I collected to turn over to Washington and I rather the opportunity to get away from my files and the typewriter and take a trip if only ~~xxxxxxx~~ second hand by films to my beloved Mexico.

*buy*

I should mention that in addition to the <sup>three</sup> regular botanical trips I took last year, I did sneak in two short trips when my husband finally got down in July. Both ~~was~~ combined travel and research trips for in each case I visited libraries in the cities on the way. In this way we came to know Yucatan and Campeche part of Mexico west of the capital between Pacuca and the coast and the highway from Mexico City south, which had not been open in 1940 to Oaxaca and on to Chiapas practically to the frontier of Guatemala.

*stef*

And now I think we can turn to the pictures. I was helped in making my selection by Miss Eva Auritsky who is helping me also with the projection and who knows Mexico, at least if not better than I do, and by Mrs Chantanel whom some of you may know for her interest in Latin American affairs. As the title suggests, I am touching only on the highlights of the Mexico I know. the picture of the country will be far from compete and well rounded.

*present  
suppl-*

Some of you may recall that the last time I spoke to you I limited my remarks almost entirely to the area bordering the Pan American Highway between Laredo and Mexico City. There were a few side trips off that highway, one from Monterrey to Saltillo, Torreon and Durango; another one east to Tampico, and one west to San Luis Potosi, and finally some excursions in and around the valley of Mexico itself. Tonight, on the other hand, we're going to be all over the map. I'm going to try to give you some glimpses of those other parts of Mexico that I know, altho most of them, I must confess, I know only very superficially.

When I visited the country first in 1939~~1940~~  
~~and~~ I was more a tourist than a botanist, collecting plants only as I travelled—first on a short summer trip, then returning the following summer to stay a year—living in various parts of the country a month or more then moving on (map) Last year I spent most of my time, as

some of you know, working in Mexico City libraries on a bibliography of Mexican botany, and was able to get out in the field only on a few short collecting trips.

These trips included a week's trip to Chiapas at Xmas time, when the libraries were closed, a one day trip to Tepoztlan, arranged by the Mexican botanists for Dr. Harold Moldenke, of the N.Y.B.G., when he passed through Mexico on his way home from South America, a few days back again in Chiapas at Easter and at the end of the summer, and a very quick trip to Vera Cruz and the Yucatan peninsula.

Most of my ~~last~~<sup>these</sup> year's trips were organized by Dr. Faustino Miranda, considered by many the outstanding Latin American taxonomist, and I consider myself very lucky to have been invited to go along. During the last few years, Dr. Miranda, in collaboration with Dr. Sharp of the Uof Tenn has been making a special study of the eastern escarpments of the Sierra Madre Oriental in Mexico, with the emphasis on the

similarities between that region and the eastern, or better, southeastern US. At the recent AAAS meetings in NY Dr. Sharp reporting on one aspect of this study listed over 100 genera common to eastern US, eastern M Mexico and central China. Of those, 35 are common to EUS and EM. Here are just a few very familiar names—Aralia, Aristolochia, Carya, Celastrus, Cheilanthes, Drypteris, Equisetum, Fagus, Fraxinus, Ilex, Juglans, Lygodium, Liquidambar, Nyssa, Prunus, Pteris, Rhus, Salix, Staphylea etc. And Cornus ought to be in that list, C. florida to be exact. The story of how Nyssa was discovered almost simultaneously by Dr. Sharp and Dr. Miranda would be very interesting if there were time to tell it. Liquidambar is important in that list, as a kind of indicator; where it appears many of the other genera mentioned are found, and since the Indians know the tree (they use the aromatic resin)

it is often fairly easy to locate ~~the~~ one of these associations by asking around if any one knows where there are any liquidambar trees.

Since I called my talk, Old Friends and New Acquaintances among Mexican plants, and perhaps it would be well to emphasize the extreme subjectivity of this title. What are new acquaintances to me may be old friends of yours. You see, I've never sailed the Amazon altho—how does the song go? I have seen an armadillo. Most of my collection, before Mexico, was in Pennsylvania—Monroe Co to be exact. So old friends mean to me usually plants that I know from eastern Pa, or better still from the Poconos. I'm going to start with the old friends first, and I have divided them into those we know from our gardens and window sills, and those we know as wild plants (Folder) Rack.

Omitted from ~~this~~<sup>the cultivated</sup> group are the Bouvardias—there is a beautiful white one called flor de San Juan because it

comes into bloom just around that saint's day; also omitted are the Fuchsias; most of those I collected were not quite as showy as the ones that sold here in flower pots. Nor I have shown the figs, of which there are an enormous number in Mexico.

And here is a scattered selection of wild flower friends that are absent-Baccharis, Croton, Solanum, Cornus, Clethra, Vaccinium, Arceuthobium, Ceanothus, Aristotaphylos, Clematis, Carpinus, Convolvulus, Phytolacca, Euphorbia, Hedeoma, Polygonum, Specularia, Cyperus, various grasses, Selaginella, Pedicularis, Poison ivy, Sambucus

New Friends-rack. Omitted from the list of new friends are a great many, some not yet identified-and I know them only by their very intriguing Indian names-chucamay de monte, cajpoqui liso, parahuite. Let me mention on y some ~~plants~~ I saw for the first time ~~plants~~

I have selected because Mexico gave me the first opportunity to sample their delicious fruits-the chicle tree, (chico zapote), the mamey with its cocoa brown skin rose colored pulp and large shiny black stone, the chirimoya whose flesh tasted like a cross between banana, pine apple and strawberry. And there is ~~ixx~~ a vine the passion lower vine-Passiflora, with the delightfully refreshing fruit the grandalillo.

Souvenirs.

Plants common to E. Mexico and s.e. U.S.

*Caryac*  
*Rubiac*  
*M. Tubella*  
Taxus globosa (and T. floridana); Pinus strobus and  
v. chiapensis; Panicum villosissimum; Epidendrum  
conopseum; Magnolia, Liquidambar styraciflua;  
Fagus, Carpinus, Acer, Taxodium, Nyssa sylvatica  
Tovara virginica, Illicium floridanum, Hamamelis  
virginiana, Prunus serotina s.sp serotina  
Cornus florida var Urbiniana, *Carya*

Mexican species resemble those of U.S. not those of Asia  
Most Mexican disjuncts are trees; herbaceous ~~exclusively~~  
endemics of Asia and S.E. U.S. not Mexico

Rainfall probably cause of disjuncts - 40 in. ann. needed  
Eastern Mexico is also related to the Caribbean

Western ~~Mexico related to Northwest~~ U.S. related to  
n.w. Mexico - Calochortus, Zygadenus, Montia, Gaura  
and Pentstemon; but not same species.

2

Epling uses Drosophila in Tertiary to trace resemblance  
Steyermark thinks the relationship between Guatemala  
and eastern N.A. is older than with the west.

Dressler thinks it is the other way around.

McVaugh thinks temperate types may have persisted in  
Mexico since early Tertiary or Cretaceous. Dressler  
thinks this may apply only to herbaceous types like  
Lobelia and Salvia

Miranda and Sharp think temperate types had a northern  
evolution and relationship.

Gentry thinks that for western types, temperate plants  
represent Pleistocene adventives established during  
glacial epochs.

Sharp points out that Mexican flora today in the east  
is very similar to Eocene Wilcox formation.

Miocene - saw uplift of S.M. Occ and S.M del Sur

Pliocene - saw S. M Or, S. M. Sur and Chiapas

Fleistocene saw proper conditions for exchange of plants  
between eastern Mexico and e U.S.

Eastern disjuncts have not developed into separate  
species

Continuity originally probably thru Big Bend  
Area of Texas; separated now because of decrease  
in rainfall in Texas and northeastern Mexico

Flowering herbs

1. Introduction - great number
2. Equipment  
press, blotters, newspaper, cotton batting  
waxed paper; lens; razor.
3. References
4. Flower Structure - uses + fertilization  
use gladiolus + microscope
5. Flower types + inflorescences (charts).  
Tulip; Rose; Sweet pea; Composite. Pansy  
Campanul. catkin; fertilization
6. Fruits + other structures used is ident.  
Dr. Fogg's list; Dr. Howard's list.

7. list of common local plants.  
by families, note habitat etc.

8. Slides relationships geographically  
introductions

(E. N. Am. plants - China)

Tulip Tree

Sassafras

Sweet gum

W. red hazel

Red bud

Spine bush

Skunk cabbage

Jack-in-the-pulpit

Trillium

Lady Slipper

~~Polygonum~~

Spring Beauty

~~Hesperis~~

~~Arbutus~~

~~American~~

China + U.S.

~~Diracodendron~~

~~Sassafras~~

~~Liquidambar~~

~~Cladrastis~~

~~Pternambis~~

~~Cercis~~

~~Benzoin (60 sp. Chin.)~~

~~Podocarpus~~

~~Symplocarpus~~

~~Ailanthus~~

~~Trillium~~

~~Cypripedium~~

~~Polygonum~~

~~Claytonia - Hesperis~~

~~Arbutus - Almond~~