



Hunt Institute for Botanical Documentation
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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.

To Merck, Paul & Davis, Abbott, Warner-Chilcott
Laboratories (112 W. 18 St., N.Y. City), McKesson's Botanical Laboratories
Mokuleia Beach, Waialua,
Oahu, Terr. Hawaii.
Sept. 11, 1954.

Ciba,
Summit, New Jersey.

Dear Sirs:

I wish to draw your attention to the fact that eight or so kinds of Rauwolfia (Rauwolfia in the trade) are peculiar to the Hawaiian Islands, usually a distinct species on each island. You can read the botanical descriptions of these plants in Sherff, "A Preliminary Study of Hawaiian Species of the Genus Rauwolfia," appearing ~~in~~ ^{at} Field Museum Nat. History, Bot. Series (Publication No. 613) 23: 321 - 331. 1947. This article should be available for your study in the Library of the New York Botanical Garden, Bronx Park, N.Y.C. In the Herbarium, there, you can also see specimens of most of the species, many of them collected by myself.

Of course the Indian species Rauwolfia serpentina is the one now so prominent in the drug trade. Who knows, however, if ~~some~~ one of the Hawaiian Island species has not superior therapeutic properties to the Indian plant.

The Haw. plants are too rare to use as a commercial source of any drug. But if studied and found valuable, ^{they} ~~could~~ ^{could} readily be cultivated on a large scale. The plants vary from large shrubs to trees 30 ft. tall.

I am a professional botanist and plant collector, resident in the Haw. Islands since 1922, and have published several books and numerous articles in pamphlet form about my botanical finds. I have been a staff member of the New York Botanical Garden since 1935 as Collaborator in Hawaiian Botany.

If you are interested in having me explore the Haw. Islands for specimens of native Rauwolfia, please let me know. I could devote one full year to the project.

Yours sincerely,

10-A Carolyn Tex.
Roselle, N.J.
Sept. 14, 1954

Dear Otto,

I'm sorry to have kept you in suspense so long about the *Rauwolfia* (somewhere I'm sure I've seen it spelled with a 'w') situation, but your first letter arrived at a rather inopportune time, just before Reed left for Florida for a week. He just had time to forward your letter and reprint from *Flora Hawaiiana* to his department head, who was supposed to send it in turn to the people concerned with *Rauwolfia*. So far he hasn't heard from them, but I'll tell him to build a fire under them so we can let you know their reaction in a couple of days.

Reed was able to gather before he left only that someone at Merck had been working on *Rauwolfia*, though not to a very great extent, as is being done at Ciba. If there was some question of the work's being discontinued, it all being a matter of budget & profit ultimately, of course. Maybe this *Hawa. Rauwolfia* business will stimulate him to get going again. I hope so, for it certainly sounds worth investigating. Someone from Merck may get in touch with you directly, but at any rate, we'll write again before long.

Reed spent several days at the A. O. S. meetings at the U. of Fla. and gave a paper on his antibiotics work. Then he went south and visited a couple of experiment stations to justify the trip. I was a bit worried, because Edna was in the Fla. vicinity at the same

time. I had visions of Reed floating out to sea on a palm, but we got more of a blow in N. Y. than he did in Fla. Neither Carol nor Edna was at all bad in our part of the state. I was even wildly hoping at least one would strike harder - just for some excitement. I still have fond memories of the '38 hurricanes in Mass.

Is Isa in love with Mokuia? I certainly would be, in her place! Better than Naikiki any day! I also wonder what her reaction was to your numerous fascinating Fiji relics. I hope she won't feel compelled to keep them all dust-free! Incidentally, thank you very much for the Fiji reprint. It gave Reed and me a chance to brush up on our German, what little of it we command, at any rate. The photographs were very interesting also.

Sincerely,
Connie

P.S. Give our regards to your wife.

P.S. #2 Reed just came home with the information that he'd just learned someone at Menck had written to you about the Rauwolfia matter.

Mokuleia Beach, Waialua,
Oahu, Hawaii.
Sept. 19, 1954.

Mr. J. D. Garber,
Merck & Co., Inc.,
Rahway, New Jersey.

Dear Mr. Garber:

I have your letter of Sept. 8, and I imagine you have mine, addressed to your company, of Sept. 11 by this time.

As mentioned before, Rauvolfia plants are so rare in the Hawaiian Islands that they cannot be used commercially. The isolated trees that have still managed to survive in spite of the ravages of cattle, wild goats and pigs, and the competition of weeds from all the ends of the earth, could be propagated on a commercial scale by means of cuttings and seeds if the chemistry warranted. This would be a long-range project.

The collecting of material at \$6.00 per sample is impracticable. Every Tom, Dick and Harry can't recognize the plants even if they saw them; and even botanists have a difficult time finding trees because of their rarity. It means a lot of hard work, and expert work at that.

It is my estimate that hunting for Rauvolfias in the Hawaiian Islands - which means visiting all the major islands of the group - would cost \$10,000. Perhaps the funds could come from some foundation like Rockefeller or Guggenheim. Furthermore, there would be no guarantee that all species would be found even if that fund were available for exploratory work. Yet, in the search for the known species, there is the good probability of finding species hitherto unknown. Anyway, it is probable that Rauvolfias vary like Cinchona plants. Plants of the same species may vary tremendously chemically yet otherwise appear the same. Therefore cuttings of each tree should be propagated and eventually tested. Thus, best yielding trees could be multiplied and even used later for hybridization to develop still better yielders.

As mentioned before, Squibbs are interested in Rauvolfia. They have already received a root sample of one species from Oahu. It is either *R. degeneri* or *sandwicensis*. A friend of mine collected it for them.

I can send you material of an Oahu species for \$100 and from some one of the other islands for \$250.

Please give my regards to Dr. & Mrs. Gray when next you see them. By the way, Mrs. Gray taught Botany at the University of Hawaii about twenty years after I taught there. She can tell you something about these plants, and the cost of Botanical Expeditions to outside Islands

Sincerely,
Dr. C. C. Degener

C I B A
SUMMIT, N. J.

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Announcing:

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MERCK & CO., INC.

CHEMICAL DIVISION

RAHWAY, NEW JERSEY

PROCESS RESEARCH AND
DEVELOPMENT DIVISION

September 27, 1954

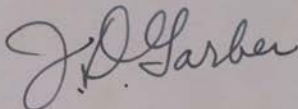
Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Hawaii

Dear Dr. Degener:

Many thanks for your promptness in replying to my letter. I did not appreciate the rarity of Rauwolfia in Hawaii.

I am sending a copy of your letter to our botanist who is presently in Central America. We may wish to contact you later about samples.

Sincerely yours,



J. D. Garber

JDG/rjk

HOFFMANN-LA ROCHE INC.

PHARMACEUTICALS AND VITAMINS • ROCHE PARK • NUTLEY 10 • NEW JERSEY • NUTLEY 2-5000

September 30, 1954

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Terr. Hawaii

Dear Dr. Degener:

In reply to your letter of September 19, may I say that Hoffmann-La Roche cannot undertake any intensive studies of the Rauwolfia group of plants and derivatives and, therefore, we should have to decline your offer of assistance in this program.

Sincerely yours,

Elmer L. Severinghaus

Elmer L. Severinghaus, M.D.
Vice Pres. for Clinical Research

ELS:edr

Parke, Davis & Company



EXECUTIVE OFFICES AND LABORATORIES, DETROIT 32, MICHIGAN, U. S. A.
JOSEPH CAMPAU AVENUE AT THE RIVER

RESEARCH DEPARTMENT

October 6, 1954

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Territory of Hawaii

Dear Doctor Degener:

Dr. Sweet has referred to the Research Committee your letter of September 18 along with his reply of September 30.

It appears now that our sources of supply for Rauwolfia are completely adequate and in view of this I doubt that we would be interested in initiating a program to explore the various species native to the Hawaiian Islands.

We appreciate very much having you bring this matter to our attention and assure you that should there be a change in our present thinking we will contact you again.

Sincerely yours,

W. F. Holcomb, Secretary
Research Committee

WFH:RVR

McKuleia Beach, Waialae, Oahu, Hawaii.
Oct. 8, 1954.

Dear Dr. MacPhillamy:

I have your Sept. 29 letter regarding Rauvolfia.

I know of a tree of R. degeneri growing at the summit of the Kealia Trail, Kawaihapai, Oahu. From this specimen my good friend E. Y. Hosaka has collected samples, I believe, for Squibb a couple of weeks ago. It would be hardly ethical were I to send you material from the self same tree. Of course, other trees must be growing elsewhere also in the Waianae Range of the Island of Oahu but it means searching for them. The last time I found a tree of this species was in 1939, and that was in a forest, on a "short spur just east of Puu Kapapa summit." Much has happened during the last fifteen years to this forest, and I do not know if I could ever find that tree again.

I can give you root samples from a small mature tree of probably R. sandwicensis (the plant lacked flowers a month ago so the diagnostic sepals separating R. sandwicensis from R. degeneri were not available) for \$25. This tree is growing in the Koolau Range of Oahu.

If you want a root sample from R. sandwicensis growing on the Island of Maui - I spotted the tree six weeks ago - I can furnish that for \$200. This order means flying to Maui, living in a hotel for a couple of days, and hiring a car.

I might stress the fact that our Rauvolfias are rather rare, as the Chicago monograph shows. They may grow isolated in some valley or on some mountain. Due to such isolation we are apt to get all kinds of peculiar strains which perhaps vary chemically just as much as they do morphologically, if not even more so. That was the picture in cinchona.

Thus, for example, R. sandw. growing in the Koolau Range of Oahu should differ from those growing in the Waianae. And I cannot imagine that R. sandw. would come close to the same species on Maui. The strains may have been isolated 100,000 years or more.

Of course if our Rs. prove to be therapeutically valuable, the logical procedure is to propagate slips or cuttings from all trees found as the chances are that taking root samples will kill the parent plant. The result of your work would be an interesting chemical analysis of a recently exterminated strain of Rauvolfia - commercially a waste of time. With properly tagged cuttings, valuable strains could be propagated and perhaps used for hybridization, while the less valuable ones could be discarded.

Enclosed are twigs of the Oahu and the Maui plants of which I can get you root samples on short notice. If you are interested, advise me how the samples are to be treated for shipment - cut in small lengths and dried in sun, or what?

Sincerely,

Ed. C. DeGener

MERCK & CO., INC.

CHEMICAL DIVISION

RAHWAY, NEW JERSEY

PROCESS RESEARCH AND
DEVELOPMENT DIVISION

October 12, 1954

Dr. Otto Degener
Mokuleia Beach
Waialua, Oahu
Hawaii

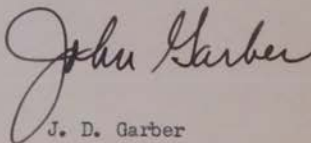
Dear Dr. Degener:

We have reviewed the Rauwolfia picture with our botanist and have decided not to collect and assay the Hawaiian species of Rauwolfia.

Should our interests become centered on other Hawaiian plants, we will certainly want to get in touch with you at that time.

• Thank you again for your interest and cooperation.

Sincerely yours,



J. D. Garber

JDG/rjk

THE LILLY RESEARCH LABORATORIES

ELI LILLY AND COMPANY
INDIANAPOLIS 6, IND., U.S.A.

October 14, 1954

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, T. H.

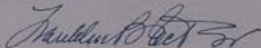
Dear Doctor Degener:

Thank you for your letter of October 11 with the enclosed reprints and specimen of the leaf of Rauwolfia of the Hawaiian species.

Your interesting comments will be brought to the attention of the individuals in our group who are responsible for this aspect of the problem. We will get in touch with you again at an early date.

With many thanks for your kindness in thinking of us in this connection.

Sincerely yours,



Franklin B. Peck, Sr., M.D.
Director
Medical Research Co-operation

FBP:pjh

WARNER-CHILCOTT
Laboratories
DIVISION OF WARREN, GORDON, INC.

WARNER-CHILCOTT RESEARCH LABORATORIES

113 WEST 10TH STREET
NEW YORK 11, N.Y.

October 26, 1954

Doctor Otto Degener
Nokuleia Beach, Waialua
Oahu, T.H.

Dear Doctor Degener:

I wish to acknowledge with thanks your letter and enclosures of October 11, in which you call attention to the Hawaiian Islands as a new -- and as yet undeveloped -- source of Rauwolfia species.

As of this moment, our company is not prepared to undertake exploration in the Rauwolfia field. It is possible that at some later date our views may change. In that event we will certainly contact you.

"

Whether the Hawaiian Islands become a commercially feasible source of Rauwolfia alkaloids or not, your ideas for exploring new species of Rauwolfia are certainly interesting, from the scientific point of view.

Thank you again for letting us know of your thoughts in this matter.

Yours very truly,

John F. Reinhard

John F. Reinhard, Ph.D.
Director of Pharmacologic Research

JFR:MK

P.O. Box

57

(Ira Burnie Farm)
Oakton, Virginia
October 27, 1954

Dear Isa:

This is very, very late indeed to be acknowledging your letter dated August 16!

The first month's delay is due to the fact that your letter was held here at Oakton instead of being forwarded to us in Cambridge, — in the expectation of our imminent arrival. (But we were in New England ^{much longer} and did not reach Virginia until the end of September.)

The second month's delay was compounded of many causes — our very deep fatigue after the intensive two months of travel and conference, the demands attendant on making our home habitable again after three years of tenants, and two shorter trips that had to be made, one South on business and one (Edward only) to New York. Now those are accomplished, our strength and spirits

also due somewhat to having "weathered" 2 hurricanes in Salem, Mass., and one in Virginia soon after arrival! E.

4

are revised, and much of the house renovation is complete: we are comfortably housed, happy in the contemplation of our beautiful Autumnal countryside, and satisfyingly at work on our current studies & literary efforts.

It was so very kind of Otto & you to write so solicitously concerning Edward's health. It was quite a wretched fever, and he was slow in regaining his full strength & powers, but we planned our trip with that in view, making a leisurely train journey with several stops for rest & recuperation with the consequence that he was almost back to normal before we arrived in Boston for the conferences.

What a miserable trick Nature played us during our first "field trip" together! And what a "good sport" you were! Anyway, we had a few fine memories to carry away from it: for me the walk up into the rain forest was memorable; and our talks in the wretched wet cabin; & some ocean views in storm.

I look forward to other & better trips to come.

With warm aloha — Elizabeth Handy

10.28.57

Dear Folks:

I had a good talk with my former college room mate and very dear friend George Mack. He is very much interested in what I told him of Otto's collecting for the Berlin Museum, of Isa's work there, of your working together now. I think he may help us with a little money if we frame up a program carefully for systematic collecting of Hawaiian and other Polynesian medicinal plants.

Of course I could tell him a good deal about Otto's professional background, career and competence. But I knew too little of Isa's scientific training, and work in Germany. So he

asked me to write to you
for this information: Isa's full
name, training & degree, professional
work in Germany, published math
(bibliography, but if you have a reprint
of an article, let us have that: I
could send it back.) -

Of course I will not enter into any planning that would commit either or both of you in any way, without careful discussion & exploration of the problem & possibilities of the work with you. But I would like this information on the now; and also a brief professional life story of Otto.

We will be back at Pauslum late
in December, and we can talk
then. (Keep the news to yourselves:
we hide our comings & goings to be
inconspicuous).

I look back with great satisfaction & pleasure to that brief few days at Keanee. I do with regret for my misbehaving myself, due to falling victim to some severe virus systemic invasion picked up somewhere in the course of ^{my} work. I shall do my best to

Dear Dr. MacMillan:

Oct. 25, 1954

Thank you for your Oct. 26 letter and enclosed cheque. I herewith return a receipt for the latter.

I shall go after the Rauwolfias shortly.

The Hawaiians have been so Americanized by the missionaries and the public school system that their medical lore is largely lost. The old grandfathers, who knew their flora intimately, are more or less ridiculed by their "up-to-date" grandchildren and seldom talk of older times. It is a shame. Nevertheless I have collected, usually all-too-brief, records of ^{some} their medicinal plants to incorporate gradually into my "Flora Hawaiiana" under the proper species. These records I have gleaned from old journals and reports, and from a few old Hawaiians I ~~have~~ ^{have} befriended. Most of these have died, since I started my studies in 1922.

In general, medical lore of the natives has been lost where missionary and Caucasian influence has been ripe, as in Hawaii. If you want up-to-date lore you must go to places where the natives still hold onto their old culture, and befriend them. They will not divulge their ideas to a white man who acts superior and ~~orders~~ ^{orders} them about. There are still many such places in the South Seas.

Of course, I think you should study the moni of the Hawaiians, Marinda citrifolia (Rubiaceae). A few years ago I helped a part-Haw. friend gather the fruit for his sister David's mother. She concentrated the expressed juice by boiling and then drank the resulting liquid for a week or so, and was "completely cured." Unfortunately, we do not know what ailed her. The plant, however, is known to all the older Hawaiians as a medicine for tuberculosis and kidney disease, - so I suspect this belief is based on fact and not superstition. Should you want samples of the fruit, which becomes extremely juicy on ripening, please ~~not~~ ^{give me} instructions how to prepare it. Regarding fruit and ~~to~~ to a lesser extent other plant shipments from the Islands, our Board of Agric. & Forestry ~~not~~ requires fumigation to prevent possible introduction of fruit flies into the Continental U.S. Would such fumigation interfere with your tests? I believe bromides are mostly used.

Plants famous as a tea to purify the blood are endemic species of Bidenas. We have close to 50 of them, each limited for the most part to a single group of ridges or to a mountain range. I have used drinks in the tea for years because I like the taste.

of it.

We have the endemic *Erythrina sandwicensis*. I believe ^{the seeds of} same S. American species was an ingredient of curare.

Waltheria americana was used by the Haw. as a cough medicine.

Acacia leuca, *Dicranopteris*, *Jambosa jambosa* and *Metrosideros* *sp.*, seem to possess anti-bacterial properties. I guess I could dig up ~~50 to 75~~ ^{50 to 75} ~~plants~~ ^{species} references to 50-75 species ~~of these~~ ^{possessing} suspected med. value, and some of these plants occur in commercial quantities.

~~Sincerely,~~
I am taking the liberty of mailing you one of my books in which both *Morinda* & *Bidens* are illustrated. It is a defective copy. I have no good ones remaining due to a combination of War, and tidal wave, that inundated my house by three feet.

Sincerely,

77
Merck POT 2, OPH, IL, Haw 1-4, Isa's reprints (to be returned)

Mokuleia Beach, Waiialua, Oahu, T.H.
Nov. 5, 1954.

Dear Dr. and Mrs. Handy:

We are glad to hear from your recent letter that that horrible dengue attack is over. We heard from friends that it is extremely painful and the malady hence also called "break-bone fever."

We wrote to half a dozen or so pharmaceutical concerns recently about Rauvolfia, including Merck & Co. Merck's Dr. John Garber offered us "up to \$6.00 per sample to cover cost of postage, packing and handling." We imagine he believes the plant is ubiquitous and that we can just about gather it in our back yard. So we dropped Merck regarding Rauvolfia and accepted the offer of another firm for two samples of R. root, 2 lbs., each, sun dried. With their order they enclosed a very eloquent cheque for \$225 - no questions asked. I (O.D.), not being a tenderfoot but having tender hands, have a blister in my palm thanks to digging, and a nice mess of roots drying in the sun outside. I guess they will be ready to ship by air Monday.

Presently, you will see, we are ethically tied up with Rauvolfia but free to deal with any concern regarding any other potential drug plant. So, if Merck is interested, we are ready to go into action at just about a moment's notice, provided we get no additional order in the meantime. I suggested that the ~~noni~~ (Morinda) be studied. We do favor Merck because of your possible association there, and it would be not only lots of fun for us but logical to be collaborators with you under their aegis. Our interests are similar.

I, Isa, was before marriage, Dr. Isa Irmgard Hansen. Enclosed are a couple of my reprints, which I should like returned. I began my studies at the Albert-Ludwigs University, Freiburg, Germany, in 1944, two of my instructors being Drs. Oehlkers and Staudinger. I remained here until the War forced its closing. In 1946 I continued my studies at the Friedrich-Wilhelms University, Unter-den-Linden, Berlin, which, during my enrollment, was renamed the Humboldt University. Here I received my doctorate in May 1949, as the enclosed photostat shows. Even while studying, I was active in teaching and research. For instance, June 1945 - Feb. 1946 I was student assistant at the Botanisches Museum, Berlin-Dahlem (U.S. Sector). April 1948 - Aug. 1949 I was assistant in Pharmacognosy and Botany for Drs. Pilger and Sleumer at the same institution. Sept. 1949 - Jan. 1953 I was botanist at the Bot. Museum and Assistant to Dr. Werdermann in his courses in Pharmacognosy at the Free University, Berlin-Dahlem. This Free University was founded with the help of the U.S., because the other Berlin institution was under Russian supervision.

which I should like returned

Regarding O.D., we enclose newspaper clippings and a page from the 1940-41 "Pan-Pacific Who's Who," which we should like returned. Keep the books. Of course since 1940-41 O.D., has not been inactive, publishing his "Naturalist's South Pacific Expedition: Fiji," and numerous scientific articles alone and with collaborators. Some years back he was botanical consultant for Civil Aeronautics Administration for interesting Canton Atoll on the Equator. Book 5 of his Flora Haw., is almost complete but is delayed in publication because of the high cost of printing. Each illustrated sheet, like the enclosed Rauvolfia degeneri, in an edition of 3,000, comes to about \$25.

We look forward to your return.

Mokuleia Beach, Waialua,
Oahu, Terr. Hawaii.
Nov. 8, 1954.

Dear Dr. MacPhillamy:

I hope this shipment of *Rauvolfia* from Oahu is sufficiently dry so that it reaches you in good condition. I shall ship it in a day or two by air parcel post as more practicable than air freight. When it is off to you, I shall fly to Maui for the other plant. I have reservations for Thursday.

In my letter of Oct. 8, you may remember, I wrote I could send you roots of a small mature *Rauvolfia*, lacking diagnostic flowers to enable me to tell whether it is *R. degeneri* or *R. sandwicensis*. This tree grows at Opasula, Koolau Range, Oahu.

This 10 ft., tree (to which I am ascribing the number 23,681, which number goes on the herbarium specimens I have taken from it for eventual deposit in various museums) is now the one from which I am mailing you five or six pounds of root. This time the plant bore a single flower.

I searched the forest in the general vicinity of this 10 ft., tree and apparently discovered the parent tree perhaps 100 yards distant. This I am numbering 23,682. It is 30 ft. high, bears abundant unripe fruit, and had about four good flowers. Of this tree I collected two pieces of root for you.

Both trees, in flowers and unripe fruit, are essentially the same. The only difference I notice, probably unimportant taxonomically, is that No. 23,681 has slightly smaller leaves than No. 23,682. Both plants are obviously *R. sandwicensis* A. DC. (var. *typica*).

I should be interested to learn if both plants are the same chemically. Would not the older plant tend to have the chemicals in more concentrated form? And if Dr. St. John got for you true *R. sandw.*, how does his plant compare with mine? I suspect you will find great differences in plants from different regions even though they may look similar.

Sincerely,

c) Le fait soupçonneux que l'affrèteur français Oscar Nordman de Tahiti refusa de signer un contrat commercial avec moi, concernant nos droits respectifs dans une nouvelle compagnie commerciale autour du Cheng Ho, jusqu'à ce qu'il avait reçu 515 des parts ou intérêts, comme le Gouvernement de Tahiti avait exigé de moi. Ce manque de confiance pourrait être justifié quand je recus le rapport suivant d'un ami, récemment revenu de Tahiti. Il écrit: "Je suppose que vous connaissiez les vagues soupçons que chacun en Tahiti ait pour Oscar..... Quoiqu'ils l'estiment, ils toujours croient qu'il a laissé couler bas le bateau à cause de l'assurance et le temps qu'il a passé dans le prison fut juste récompense." Il y a aussi une allusion à un jugement de deux années de prison dans le magazine "Pacific Islands Monthly," imprimé en Australie, concernant Oscar Nordman.

d) La mauvaise grace évidente du Gouverneur qui retardait pour 6 mois à accorder mon visa pour une visite en Tahiti, les demandes confiscantes (mentionnées auparavant) exprimées le 11 juin, 1952 en Tahiti (dont je recus la nouvelle par la poste à New York quelques semaines plus tard), et l'impossibilité d'arriver en Tahiti pour arranger une vraie réappropriation, avec des conseils légers, du Cheng Ho, selon le contrat spécifié, le 7 juillet, 1952.

VIII) Monsieur l'Ambassadeur Français à Washington fait des allusions à mes "attaques violentes" contre l'Administration Française en Tahiti et à mes "calomnies malicieuses contre la bonne foi et l'impartialité des Magistrats de Tahiti" dans ma lettre de mars 24, 1953. En considérant ce qui s'est passé, Monsieur l'Ambassadeur devrait vraiment être surpris que je fusse si honnête et patient et que j'aie retardé mes attaques pour 5 ou 6 années. Les motifs de ces attaques devraient être évidents de ce que j'ai expliqué. Mais pour éviter aucune confusion je les répète:

a) L'Ex-Consul français Eric deBisschop, déporté, regardé comme alien indésirable par le Gouvernement des Etats-Unis, a défraudé mes associés et moi d'une telle mesure qu'il était défendeur dans les Cours Fédérale et Territoriale en Hawaii déjà en 1948.

b) Le Bureau du Monsieur le Gouverneur de Tahiti permet à l'Ex-Consul deBisschop à enregistrer frauduleusement le Cheng Ho, valant U.S. \$75,000 (portant le drapeau américain et appartenant à une compagnie américaine, incorporée en Hawaii), comme sa propriété sous le drapeau FRANÇAIS.

c) Le Gouverneur de Tahiti (après que Degener et ses associés avaient en vain engagé l'avocat Hoppenstedt en Tahiti à les représenter dans la Cour de Justice de Tahiti contre l'Ex-Consul) refuse à Degener un visa pour visiter Tahiti afin de combattre en personne pour ses droits.

d) Après des plaintes sur cette injustice chez des fonctionnaires à Paris et Washington, Degener recut - contre-cœur - un visa pour Tahiti, dont la nouvelle le joint à New York, après un retard de presque 6 mois. C'était à peine un mois avant qu'il dut être en Tahiti pour regagner sa jouque Cheng Ho, le 7 juillet 1952. Comment atteindre cette île isolée, odoriférante de piraterie? Comment trouver un avocat parlant anglais? Comment lui communiquer l'affaire et comment combattre légalement des puissantes forces politiques dans une langue étrangère? Ce délai de 6 mois, était-il nécessaire?

Quand le déporté et Ex-Consul Français était absent dans les Iles Australes, Monsieur le Gouverneur de Tahiti remit son Cabinet, le 11 juin, 1952. Nous apprenons qu'à cette réunion étaient présents au moins 1) le notaire Lejume, 2) le Chef des Douanes, 3) le Chef de Services Politiques et Administratives, 4) le Capitaine de Port et 5) Monsieur GALLOIS, qui était Membre du Conseil Privé de Monsieur le Gouverneur et affrèteur du Cheng Ho pour 2,500 francs coloniaux français (valant beaucoup plus que le franc français en usage en Europe). Ces hommes - soit involontairement ou non - je ne sais pas - d'aucune manière doutent la validité de l'option de Degener. Mais ils demandent que Degener paye \$15,000 pour le bateau (que deBisschop et Gallois avaient à-peu-pres rendu abandonné). Au

CIBA PHARMACEUTICAL PRODUCTS

INCORPORATED

SUMMIT, NEW JERSEY

November 9, 1954

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Terr
HAWAII

Dear Dr. Degener:

Thanks very much for your letter of October 29th with the many suggestions of pharmacologically interesting plants.

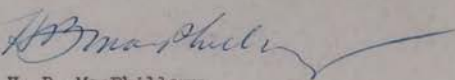
We have been very much interested in tuberculosis and at the present time are screening a great many synthetic compounds, so that the *Morinda* is of special interest to us. Therefore, we would be very appreciative if you could send us some of this material for testing. Since the importation of the fruit would present difficulties, would it be possible to have someone prepare the expressed juice in the same manner as the Hawaiians use it? It may be that this juice concentrated could be imported without causing difficulties with the Department of Agriculture. We would, of course, be pleased to defray any expenses in this connection.

So far the book that you sent me has not arrived, but I shall eagerly look forward to receiving it when it does.

We have already obtained a sample of *Metrosideros* which we tested for blood pressure lowering action, but unfortunately found no activity. Since you suggested that it may possess antibacterial properties, we are screening it in this connection.

Again many thanks for your kind co-operation and we shall look forward to hearing from you in the near future.

Very truly yours,


H. B. MacPhillamy

HBM/pe

ELI LILLY AND COMPANY

INDIANAPOLIS 6, U.S.A.

November 16, 1954

*Please
return to
Degener*

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Territory of
Hawaii

Dear Dr. Degener:

Your letter directed to our Dr. F. B. Peck on the subject of RAUWOLFIA has been passed along to the writer along with the very interesting literature and specimen which you were kind enough to submit.

At the present time we have on the market a reserpine tablet. As you know, reserpine is a pure crystalline alkaloid of the Rauwolfia plant. In order to produce reserpine, we are purchasing various varieties of Rauwolfia for extraction purposes, and we are continuing our research work in an effort to determine which variety of Rauwolfia contains the highest proportionate amount of Reserpine.

We, therefore, very much appreciate your assistance in advising us of the varieties available in the Hawaiian Islands.

You have indicated your willingness to devote more time to exploring the Hawaiian Islands for specimens of native Rauwolfia. It is possible that we may wish you to do this; however, before proper authorization can be given to you, it is necessary for us to determine the extent of our need. We, therefore, shall be in touch with you further within a few weeks.

Yours very truly,

ELI LILLY AND COMPANY

J. B. Meyer
Purchasing Agent
Chemicals and Drugs

JRMeyer/kb

Mokulāia Beach, Waialua,
Oahu, Terr. Hawaii.
Nov. 21, 1954.

Dear Dr. MacPhillamy:

Mrs. Degener and I returned from our *Rauvolfia* hunt Friday night, and got your letter and the enclosed one from Eli Lilly from the village post office yesterday.

We were displeased that the Oahu *Rauvolfia* (Nos. 23,681 & 23,682) turned out to be the same species as the plant from West Maui, namely *R. sandw.* Consequently my wife and I resolved not only to get the Maui plant but, contrary to your order, fly to the Island of Hawaii and hunt in the lava flows for *R. remotiflora* Degener & Sherff. I had discovered this species Sept. 1929. Since then it has been collected only once again, namely by L.W. Bryan, in 1933. We were delighted to find one tree of which I am shipping you four pieces of root. To this plant I am assigning the No. 23,686.

We of course got material of the West Maui *R.*, to which I am assigning No. 23,687. We explored the entire gulch where it grows very carefully, and failed to find another *Rauvolfia* plant!

From the Island of Maui we detoured to Molokai via Lanai. On the latter island we would have stayed to search but hotel accommodations are \$16 per day! There is only one hotel. At any rate, the flight showed us where patches of forest remain on Lanai, and *Rauvolfia* MIGHT still be lurking in them. The only collection of a *R.* on Lanai is *R. degeneri*, collected by Mann & Brigham way back in the early 60's. The herbarium specimen is at the Chicago Nat. History (Field) Museum.

We spent one day on Molokai, where I had collected *R. molokaiensis* and its variety *parvigolia* in 1928. We had no luck in finding either.

I believe three or four more sunny days should complete drying of the roots. The package should be in the mail the latter part of this week.

Of course it is not your fault that Mrs. Degener and I were over-enthusiastic in our hunt and overreached ourselves regarding *Rauvolfia*. We learned, however, that our estimate of cost was too low. You might of course argue that Mrs. Degener should have remained home. Had she not come, I would have hired some companion as "insurance" against the possibility of remaining forever in some isolated gulch with a broken leg. On Hawaii and Maui, particularly, one might fall into an earthquake crevice or lava tube hidden by vegetation. I never hike alone, in the South Seas.

As you know, about the same time I wrote Ciba about *Rauvolfia*, I likewise wrote half a dozen or so other leading pharmaceutical concerns. I am receiving various offers, from ridiculous ones like \$6 per pound to the Eli Lilly letter. Have I now satisfied your *Rauvolfia* needs? While we were on Maui we wanted to go to Ulupalakua to hunt up trees of *R. mauriense* and *R. molokaiensis* var. *typica* (see Occas. Pap. Bishop Mus. 20: 12, 1949). The former species had been collected there by Rock in 1910; the latter by me in 1948. The taxi driver wanted \$15 to take us there early in the morning and another \$15 to call for us toward evening. This, plus hotel, etc., was more risk than we could assume. What if we had found no trees?

Just as I declined sending you specimens of *R. degeneri* from Keali, Oahu (which Hosaka had collected for Squibb), so would I decline sending *Rauvolfia* material to any other concern from localities where I have collected for you. Should, however, Lilly want to "stake me" on the Ulupalakua region, is that satisfactory with you? You can have priority.

I shall see what I can do about Morinda, the Hawaiian noni. I have a tree in my garden from seed I had collected in Fiji in 1940. This plant presently has flowers but lacks fruit, so perhaps the Haw. plants at this season likewise lack fruit - shall hunt around and write you later.

Instead of ordering some particular plant from me, it might be more practicable to give me more freedom of selection. While hunting for *R.*, I could have collected several other reputed medicinal plants for you.

Sincerely,

CIBA PHARMACEUTICAL PRODUCTS

INCORPORATED

SUMMIT, NEW JERSEY

November 24, 1954

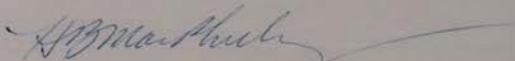
Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Terr.
Hawaii

Dear Dr. Degener:

We were very pleased to receive the root samples of R. sandwicensis (23,681 and 23,682). We now have begun assay studies on this material but with the holiday, etc. it may take a couple of weeks before they are finished. As soon as we have the final results I will let you know about the content of reserpine. Unfortunately Dr. St. John's sample as well as one from Dr. Cooke has yielded none of the active alkaloid as yet. Let's hope your material will be better for as you say, there probably will be great differences.

We certainly appreciate your efforts in our behalf and we are looking forward to receiving the material from Maui. It should be here shortly. The roots from Oahu were quite wet but arrived safely and we are drying the ground material before extracting.

Very truly yours,



H. B. MacPhillamy, Director
Bio-Organic Chemistry

HEM/pe

CIBA PHARMACEUTICAL PRODUCTS

INCORPORATED

SUMMIT, NEW JERSEY

November 29, 1954

Dr. Otto Degener
Mokulaiea Beach, Waialua
Oahu, Terr., Hawaii

Dear Dr. Degener:

Your letter of November 21st arrived this morning and I was pleased to know that you and Mrs. Degener had returned safely from your Rauwolfia hunt. We shall look forward to receiving samples which you collected for us.

We would very much like to pay all your expenses so please let us know how much over the estimate you were. We do not feel that you overextended yourself and are very anxious to reimburse you for your trip.

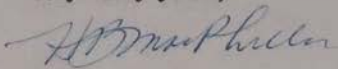
We have not completed our assays as yet since we have been extremely busy with other work. When we have evaluated all of the root material from Hawaii which you have been so kind as to collect for us, I feel sure we will have a good idea of the alkaloid content of the Rauwolfias from Hawaii. At the present time, this is all that we are interested in so please feel free to work with any of the other pharmaceutical companies in this connection.

Regarding other medicinal plants, we would be pleased to receive anything that you might find on your trips. I had not intended to imply any particular restriction, so please feel free to make any selection that you think advisable. Please be assured that we will gladly defray any moderate expenses.

I was pleased to receive your book and I am looking forward to an opportunity to read it within the next few days. Am I to understand that the copy is for us or shall I return it to you?

Again our sincere thanks for all your efforts in our behalf.

Very truly yours,



H. B. MacPhillamy

HBM/pe
Encl.

Mokuleia Beach, Waialua,
Oahu, Terr. Hawaii.
Dec. 6, 1954.

Dear Dr. MacPhillamy:

I have your letter of Nov. 29.

A day or two after I mailed you the newest catch of *Rauvolfia*, a tropical "Kona" storm hit us with high winds and heavy rains. The ocean, otherwise clear and blue before our home, is like chocolate with the clay washed from the pineapple fields. We have not seen the sun since. This storm of course ushers in our winter. When sunshine is lacking, can plants be dried in the oven with slow heat for your purpose?

The Polynesians who originally peopled the Haw. Islands 2 - 3,000 years ago evidently were not tubercular. Therefore I fear we will not find any old Haw. medicine for this disease. They did, however, have some medicines for other respiratory diseases. One of these medicines was made from the popolo (*Solanum nigrum* var.). The preferred method was to crush the leaves, strain, and drink the resulting fluid. Another remedy was a tea made from its dried stems and leaves. I shall make a point of shipping you these for testing as soon as I can find material and can get it sun-dried. The roots of *Waltheria americana* were likewise used for colds.

I have found some noni (*Morinda citrifolia*) plants but the fruit is still unripe.

The kukui (*Aleurites moluccana*) was used medicinally in many ways. The juice from the outer husk of the unripe nut has been employed as a "purge" to rid patients of gallstones. How much truth there is to this belief, I do not know.

It is kind of you to wish to reimburse us for our extended *Rauvolfia* hunt on Hawaii. I estimate that flying from Maui to Hawaii and return, hotels in Hilo and Waiohinu, and taxis from Hilo to Kaalualu lava flow and return mounts up to about \$100. You have already reimbursed me by \$6.00, which is the postal money order of Nov. 17 for air mailing the Oahu package. I had sent it to Ciba C.O.D., so this is a double payment, in error.

Of course do keep the books. I mailed you. I fear, without having visited the Islands, to read them will be rather boring. I am mailing another book that may be more to your taste. This is a duplicate copy, so I do not need it.

Sincerely,

Dec 14, 1954.

Dear Dr. MacPhillauy:

Last night I boiled 9 lbs. of noni (*Morinda citrifolia*) fruits with 6 cups of water, macerated the material in a Waring Blender, boiled again, and poured all into a jar. This I placed in the refrigerator overnight and mailed to you today by air. The fruit has normally an overpoweringly foetid odor. The charge for air mail was terrific - \$13.40 - but that is better than having the material rot via ordinary parcel post. I shall let you set your own price for this noni shipment. What interested me was that the plant ~~grows~~ I found growing on a talus slope with the paper mulberry (*Broussonetia papyrifera*), a plant that does not need itself and ~~is~~ persists after aboriginal cultivation. The old Hawaiians evidently had planted the old noni tree in that spot themselves as a source of medicine and dye.

As mentioned before, without boiling the fruit I would be obliged to bring the material from my home on the north shore of Oahu to the Board of Agr. & Forestry in Honolulu for fumigation. Then I would be obliged to call for it the following day for mailing. Boiling and shipping direct from the Waialae post office was the practicable way. This juicy fruit would never ship fresh to Summit without decaying anyway.

I erred regarding a previous C.O.D. Rauloff's package. Cuba had not paid for the postage twice after all. I evidently had paid the charges when delivering the package at the Waialae post office.

I believe I have already written you that the noni fruit was a reputed medicine among the Hawaiians for tuberculosis (a disease they never had ~~before~~ until Capt Cook's discovery of the Islands in 1778 - so

was this fruit not used for some ^{other} respiratory ailments before
that time?), for kidney disease and for gall
stones.

I have found popolo (Solanum nigrum
var.) but not yet enough for you. I am
having difficulty drying the material be-
cause of the present rainy weather.

I have also found a spot where I
can ~~gather~~ ^{gather} Waltheria nhaloa
(Waltheria americana) roots, ~~the~~
the source of another "cough medicine".

CIBA PHARMACEUTICAL PRODUCTS

INCORPORATED

SUMMIT, NEW JERSEY



CABLE ADDRESS:
CIBA-SUMMIT NEW JERSEY

TELEPHONE No.
SUMMIT 6-3500

December 30th, 1954

Dr. Otto Degener
Mokuleia Beach,
Waialae,
Oahu, Hawaii

Dear Dr. Degener:

This will acknowledge receipt of your letters dated December 14th and December 27th and also the jar containing the Marinda which arrived in good condition. We will work that up as soon as this is possible. The other botanical material has of course not yet arrived and I feel that with the receipt of this material we will have on hand about all that we can investigate at this time. We are working on a number of projects and our man-power is at present insufficient to handle any more botanical material.

We are enclosing our check for \$13.40 to cover the shipping expenses on the Miranda. As to the expenses for the collections which you have made, we have no way of judging the trouble and time involved so that I would prefer you to set a value on this. This is generally the procedure which we have followed with other botanical collectors.

We greatly appreciate the copy of "Poisonous Plants of Hawaii". Both Dr. Schlittler and I will be interested in reading it.

As soon as I hear from you regarding your total expenses, I shall be glad to send a check to you covering that amount.

Very truly yours

H.B. MacPhillamy

HEM/rf
Encl. (Ck.)

ELI LILLY AND COMPANY

INDIANAPOLIS 6, U.S.A.

January 11, 1955

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Territory of
Hawaii

Dear Dr. Degener:

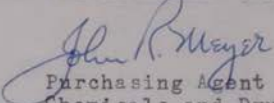
Please accept our apologies for not having corresponded with you sooner on the subject of RAUWOLFIA and specifically the Hawaiian varieties of this interesting plant.

Our research division would definitely like to obtain from five to ten pounds of each Hawaiian species. At the present time we are not interested in any long range collecting program to obtain commercial quantities of any specific variety; however, this might come about after we have had an opportunity to examine and test smaller samples.

If you believe it possible to obtain from five to ten pounds of each variety, would you please advise us if they can be obtained, and at what price. Again, thank you very much for your interest in this matter.

Yours very truly,

ELI LILLY AND COMPANY


Purchasing Agent
Chemicals and Drugs

JRMeyer/kbp

Mokuleia Beach, Waialua,
Oahu, Terr. Hawaii.
Jan. 18, 1955.

Dear Dr. Meyer:

I received your Jan. 11 letter yesterday.

I wish to emphasize that *Rauvolfias* are rare in the Hawaiian Islands and therefore their roots not available in commercial quantities. But, at the proper season, the trees are often loaded with fruit. Should our plants be of real value, they should be rather easily propagated. Our *Rauvolfias* vary from large shrubs to trees perhaps 30 ft. high. They may grow isolated in some valley or on some mountain. Due to such isolation, we are apt to get all kinds of peculiar strains which perhaps vary chemically just as much as they do morphologically, if not more so. That was the picture in cinchona.

Thus, for example, *R. sandwicensis* growing in the Koolau Range of Oahu should differ from plants of the same species growing in the Waianae Range of the same island. And I cannot imagine that *R. sandw.* on Oahu would come close to the same species on the Island of Maui. The strains may have been isolated from one another 100,000 years or more.

I can send you root of *R. sandwicensis* var. *typica* from the Koolau Range of Oahu on short notice. This I can furnish you for \$40.00, you paying postage (air or surface, as you wish).

I can furnish you definitely *Rauvolfia remotiflora* from the Island of Hawaii and another strain of *R. sandwicensis* from the Island of Maui. This very definite shipment, discouragingly, would come to \$300.00 because of plane fare, taxi hire and hotel accommodations.

On Maui I would visit the Ulupalakua lava fields of Haleakala Crater where J.F. Rock discovered *R. mauiensis* in 1910, and I collected it a second time about five years ago. It means hunting with no guarantee that the trees are still living. The chances of finding them in this rugged terrain, however, are good as man would hardly have cleared such land for crops or cattle. It is probably still undisturbed.

On Oahu I can find *R. degeneri* if I search long enough.

To find *R. sandwicensis* var. *subacuminata* is hopeless. It was discovered on the Island of Kauai by Jules Remy in 1851-55, then by me in 1926, and not since.

R. molokaiensis var. *typica* is impracticable to find. It was collected in Waialua Valley, Molokai by Father Faurie in 1910, and by me in 1923. This valley is on the uninhabited north shore, and inaccessible in winter as the high waves prevent any one landing there. It was also collected in the leper settlement in 1910, a place closed to me. On the Island of Lanai it was last collected in 1913, and by this time probably destroyed by introduced deer and goats.

R. forbesii was collected once near Honolulu in 1910 and is obviously extinct.

R. helleri of the Island of Kauai was collected once in 1895 and not since!

Here, then, you get a bird's eye view of our Rauvolfias. Some may be extinct, some are so extremely rare that they have been found but a few times before. The chances are, of course, that while diligently searching for these rareties, species new to Science will be discovered. ~~Such~~ much of the Hawaiian Islands have not yet been explored botanically.

In conclusion, then, I can furnish you roots of *R. sandw. var. typica* from Oahu for \$40. If that plant contains no reserpine, you may wish to abandon further search as too risky. If, however, it shows promise, I can, if you wish, get you *R. remotiflora*, another form of *R. sandwicensis* and **MOST LIKELY** *R. mauianensis* and *R. degeneri*. The latter project requires costly travel and costly hunting, hence the \$300.00 fee.

Sincerely,

Dr. Otto Degener

CIBA PHARMACEUTICAL PRODUCTS

INCORPORATED

SUMMIT, NEW JERSEY

January 18, 1955

Dr. Otto Degener
Mokuleia Beach
Waialae
Oahu, HAWAII

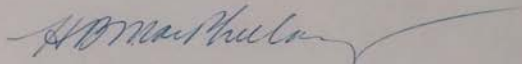
Dear Dr. Degener:

We were pleased yesterday to receive a box containing the Waltheria roots. We shall be glad to investigate the active component of this material as soon as time permits. Many thanks for collecting it for us.

I still have not received word from you regarding your last expenses incurred in your trips for us. Please give me some idea as to the amount and I will be only too glad to send you a check.

We certainly do appreciate your interest in our behalf and I shall look forward to hearing from you in the near future.

Very truly yours,



H. B. MacPhillamy

HBM/pe

CIBA PHARMACEUTICAL PRODUCTS

INCORPORATED

SUMMIT, NEW JERSEY

February 15, 1955

Dr. Otto Degener
Mokuleia Beach
Waialue
Oahu, Hawaii

Dear Dr. Degener:

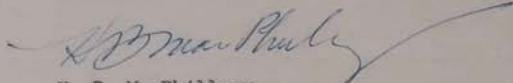
We are pleased to enclose our check for \$50 to cover the costs of your plant collection for us.

We received the Bidens and I hope that we may have the opportunity of investigating them shortly.

Your kind cooperation in obtaining plant material for us has certainly been appreciated and should the need arise again, we will certainly call on you for help.

It has been very advantageous for us to have been able to contact a person like yourself who has such a very wide and fundamental knowledge of the plants of Hawaii.

Sincerely,



H. B. MacPhillamy

HBM/pe

Encl. check

ELI LILLY AND COMPANY

INDIANAPOLIS 6, U.S.A.

March 8, 1955

Dr. Otto Degener
Mokuleia Beach, Waialua
Oahu, Terr. Hawaii

Dear Dr. Degener:

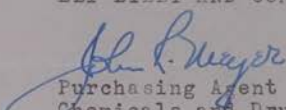
We are very grateful for your letters on the subject of RAUWOLFIA VARIETIES in Hawaii. After discussing this matter with our research division, we believe it would be worth \$40 to us to obtain a sample of Rauwolfia Sandwicensis var. Typica.

We would like to obtain no less than five pounds, and ask that when this is obtained that you send it via air mail to my attention.

If this meets with your approval, we shall immediately forward our purchase order which will serve as a contract for this amount.

Yours very truly,

ELI LILLY AND COMPANY


Purchasing Agent
Chemicals and Drugs

JRMeyer/kpb

Mokuleia Beach, Waialea,
Oahu, Hawaii.
March 18, 1955.

Dear Mr. Meyer:

Copy

I have your letter about Rauvolfia
sandwicensis.

I shall be glad to send you about
five pounds of ~~dried~~ root, ^{dried}, for \$40.00,
you paying the air mail if you
wish it sent thus.

We are having a little excitement
here with a 1,600 ft. high lava
fountain on the neighboring
island of Hawaii. The last few
days, here at Mokuleia, the at-
mosphere has been murky due
to volcanic smoke.

I shall dig the roots Wednes-
day. They ~~roots~~ ^{will} ~~make~~ take some
time to get sun-dried but should
be ready for shipment soon after
your order arrives.

161 SIXTH AVENUE
NEW YORK 13

March 28th, 1955.

Mr. Otto Degener,
Mokuleia Beach, Waialua,
Oahu, Hawaii.

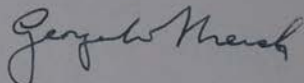
My dear Mr. Degener:

Your letter of the 14th catches me in embarrassing circumstances, for the material which you and Dr. Handy sent to me is in Florida and I am here. This came about because I was sick for a number of weeks at the end of my visit to our winter home, and then unfortunately on my return had another siege of the 'flu bug.

I am destined to return to Florida over Easter. Unfortunately, as I have just written Dr. Handy, I have not yet worked through the books and papers. I can attend to sending you those you need for your project, if you would indicate to me which ones you want. The rest I shall keep, as Dr. Handy told me to hold them until he returns.

It is interesting to me to see that you and Mrs. Degener are working up a request for a grant from the National Science Foundation, of which I am a member of the Board. I shall of course be very interested to see what the scientific staff of the proper division will recommend to us.

Sincerely yours,



GWM/EK/N

P.S. I do seem to recall a Miss Lang who tutored some of my sisters. High Street, Orange, is still there - but much changed! I knew Degeners at Quogue, Long Island, and still hear of George Degeners, Senior and Junior; perhaps they are related to you.

C I B A

C I B A P H A R M A C E U T I C A L P R O D U C T S , I N C .

S U M M I T , N . J .

March 30, 1956

Dr. Otto Degener
Waialua
Oahu, HAWAII

Dear Doctor Degener:


This will acknowledge receipt of your letter of March 20 together with the safe arrival of Metrosideros polymorpha. I am enclosing our check for \$35 which I hope will cover the expenses. We are certainly very grateful to you for obtaining this material for us, and should anything interesting develop, I will be very pleased to keep you informed.

Regarding your question of the interest in Rauwolfia sandwicensis, I am afraid I cannot give you too much information. As you will recall, we have assayed this material very carefully for the physiological active alkaloid, reserpine, but we have failed to find any of this material in this particular species. I am, therefore, sorry I must say that the plant has very little, if any, medical value.

At the present time, we obtain most of our production material from R. vomitoria which seems to grow quite plentifully in Africa. The western hemisphere species, R. tetraphylla (or hirsuta) is also of interest in this connection. I am afraid this will be of very little help to you, but it is the best I can do.

Again, many thanks for your cooperation.

Sincerely yours,



H. B. MacPhillamy

HBM/mmi
Enclosure

68617 Crozier Drive, Waialua,
Oahu, Hawaii.
Nov. 13, 1956.

Dear Dr. MacPhillamy:

I guess you know the style of my *Flora Hawaiiensis*. It is supposed to be technical, yet I do want material of human interest in its pages as well. I have manuscript ready for Book 5 but hesitate to go to press with it until you read my tentative paragraphs as to truth of my statements. I likewise wish any additional facts of popular interest that you may be able to add.

Under the genus description of *Rauvolfia* I state as follows:

About 60 species, native of the tropics of both the Old and the New World. This genus suddenly has gained fame because of *R. serpentina* of India and *R. vomitoria* of Africa, two species furnishing the crystalline alkaloid reserpine. This drug, used in the crude form by medicine men of India for centuries, is now extensively employed in the treatment of patients suffering from high blood pressure and from mental ills with dramatic results.

Then I follow with a key to the species found in the Hawaiian Islands.

On a separate sheet I then describe *Rauvolfia sandwicensis*, with a rather nice illustration I have had drawn from a Pupukea-Kahuku, Oahu, plant. Under this *R. sandw.* species I tentatively state the following:

This small tree grows here and there both in the summit rain-forest and the drier foothills of both mountain ranges of Oahu. It was also found by Forbes in the Honokahau Drainage Basin in 1917 and in Olowalu Valley in 1920, and by Degener in Olowalu Valley in 1939, West Maui. Because of its relationship to the snakeroot *R. ~~serpentina~~* of India, the writers in 1954 were engaged by Ciba Pharmaceutical Products Inc., to procure roots of this and other Hawaiian hao for assay as to their content of the drug reserpine. Regarding *R. sandwicensis* Dr. H.B. MacPhillamy of the drug concern, the largest supplier in the United States of reserpine under the trade name Serpasil, wrote: "- - - we have assayed this material very carefully for the physiological active alkaloid, reserpine, but we have failed to find any of this material in this particular species."

Please write me your reaction soon, so I can go to press with these pages. I do want something that other books don't have. Too much that is written is just a rehashing of facts (and fiction?) found in previously published books.

Aloha,

C I B A

C I B A P H A R M A C E U T I C A L P R O D U C T S , I N C .

S U M M I T , N . J .

November 27, 1956

Dr. Otto Degener
68617 Crozier Drive, Waialua
Oahu, Hawaii

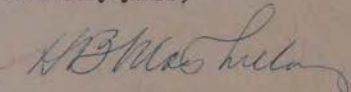
Dear Doctor Degener:

First of all, let me apologize for the delay in replying to your letter of November 13. I have been away on a business trip and that together with our long Thanksgiving vacation has prevented me from getting around to it until now.

I have but a very few comments to make regarding your write-up of the *Rauwolfias* in your new book. Regarding the assays of *R. sandwicensis*, we have again evaluated your roots with a much superior assay procedure using paper chromatography. In this case we find that the material contains approximately 0.01% reserpine. This is a relatively small amount and accounts for our missing it by the cruder isolation technique we formerly used. I think, therefore, you would be safe in stating that *R. sandwicensis* does contain reserpine in the above amount, as indicated by paper chromatography. We were very pleased that you mentioned the name of our company in your write-up, and also that you gave our trade name of Serpasil, which, by the way, should be capitalized. I hope these few comments will be of help to you.

Rao, a graduate student of Professor Woodson, has just completed "A Revision of *Rauwolfia* with Special Reference to the American Species". We have ordered a number of reprints of this article and I will be most happy to send you one when they arrive. It appears to be a very comprehensive and much needed revision of the genus.

Sincerely yours,



H. B. MacPhillamy

HBM/mmi

Aug. 7, 1961.

Dear Dr. Tabrah:

Mrs. Degener & I received your interesting letter and, not knowing enough about the project, cannot answer your letter precisely. Some few questions come to mind:

We fear much of the data about Haw. mat. med., may be subject to error unless your native informants actually bring the reputed medicinal plants to you. Then whether some botanists identifies them or not, such plants MUST be pressed and preserved in some institution of your choice as vouchers for all time. Species here might be described today as polymorphic and hence a Rauvolfia collected and used medicinally on Kauai may be absolutely without value if from Oahu. There may be a subtle difference in such plants which, years later, examination of the herbarium specimen may explain. Such a voucher could be stored in some institution like the Alabama Polytech., where our friend Dr. Hooking, author of "A Dictionary of Terms in Pharmacognosy" hangs his hat; or they might be stored at the Smithsonian. I believe to store them at the Bishop Museum would be too much like shipping coals to Newcastle.

A work of this kind we believe should be illustrated. We would hand over our drawings for duplication if you wish, thus reducing cost of publication materially. When drawings are not available, these should be supplied by hiring some commercial artist to do them. The cost would vary all the way from \$25 - 50, depending on the intricacy of the specimen - and average fern takes longer to draw than the noni.

Photos we find not too satisfactory, but we could try our luck with them.

Since Mrs. D., taught Pharmacognosy under Sleumer and Werdemann in Berlin-Dahlem, I believe she should be considered officially coworker with me which, in truth, she would be. We prefer to really concentrate on this project you briefly outlined and hence be coauthors with you and Dr. Eveleth.

Should we be coauthors, the appropriation might be segregated into 1.) cash for publication and making of drawings and 2.) remaining cash to be divided equally into three parts: one for you, one for Dr. Eveleth, and one for Mrs. Degener and myself.

The above is just a trial balloon. What are your reactions or those of your prospective sponsors?

Sincerely,

For the little Fiji study about "Mutiplanzen", the precise vouchers are at the Bishop Museum, New York Bot. Garden, Arnold Arboretum, Kew, etc.

Frag. chiloe.

town. This delicious fruit is grown in the Agricultural Society's acre of plants, and brings readily 75 cents per quart." Hillebrand records that this strawberry as well as F. vesca "are cultivated and thrive well, even in Nuuanu valley down to 300 ft. above the sea, yielding fruit during five months of summer." It is still grown in the home garden; hardly in sufficient quantity for commercial sale.

Extra Range: In 1712 a French officer, Frezier, carried some form of F. chilensis from Concepcion to Europe. Thus began the modern strawberry industry. This hybrid is now cultivated throughout the World, chiefly in temperate and cool regions. It must not be confused with F. vesca, mainly native of Europe and the origin of the ~~XXXXXX~~ ^{so-called} ~~XXXXXX~~ ^{cultivars} of horticulturists.

FRAGARIA CHILOENSIS var. SANDWICENSIS Degener & Degener
HAWAII STRAWBERRY; OHELO PAPA

Fragaria chilensis Hillebr. Fl. Haw. Isl. 118. 1888.

Fragaria chilensis of Hawaiian writers.

Not Fragaria chilensis Duchesne, Hist. Nat. Frais. 165. 1766.

Not Fragaria chilensis sensu Fagerlund & Mitchell, Nat. Hist. Bull. 9 : 39. 1944. (This is F. vesca.)

Fragaria chilensis sensu Hubbard & Bender, Haw. Nat. Notes 4 : 12. 1950. (As to Haleakala plants only.)

Fragaria chilensis var. sandwicensis var. nov., ~~XXXX~~ floribus 2 cm. latis. Type Specimen: ~~Sagaret~~ 12/6/88, 1927.

Rootstock 4 - 18 cm. long, 10 - 15 mm. thick, covered below with 2 cm. long marcescent with brown stipules and petiole bases, producing strong short to sometimes very long runners. Leaves numerous, somewhat persistent, dying bright yellow to red; petioles 3 to rarely 23 cm. long, thick, brownish, rather densely tawny-silky with ascending hair which spreads with age; leaflets thick, coriaceous, glabrous and brownish above, densely silky-strigose and finely tomentulose below, the lateral slightly the smaller and with less evident petiolules and with very obliquely cuneate bases, 1.5 - 5 or very rarely up to 18 cm. long, strongly nerved and reticulate, broadly obovate-cuneate, truncate to subcordate or sometimes rounded at apex, coarsely serrate-dentate with mucronate teeth above the middle and with the terminal tooth generally the smallest; stipules scarious, lanceolate, adnate half their length, brown and 1 - 2 cm. long. Inflorescence 6 - 18 cm. long, densely silky-strigose, 1- to few-flowered, with pinkish more or less scarious 2- to 3-toothed bracts above the middle. Flowers about 2 cm. wide, with erect acute or mucronate silky-strigose oblong to linear-lanceolate sepals and bractlets two-thirds the length of the broadly obovate white petals. Fruit red, about 10 - 15 mm. long, broadly conical, hirsutulous, with 1.5 mm. long achenes set in very shallow pits.

Type Locality: "Haleakala, Maui."

Local Range: The endemic strawberry grew in open and scrub areas in an almost continuous belt about Haleakala, Maui, from about 5,000 to 8,000 feet; and at similar ~~XXXXXX~~ situations on Hawaii, excluding Kohala. In the Bishop Museum herbarium are plants labeled "Upper Akulele, Lanai," collected by either C.N. Forbes or G.C. Munro. No such place is listed in a gazetteer, and the Lanai record should be considered questionable. The ohelopapa was one of the chief foods of the endemic goose or ~~XXXX~~ XXXX (Nesochen sandwichensis), likewise confined to Maui and Hawaii.

This variety, with smaller flowers and slightly different pubescence, is almost subalpine; while its relatives along the Pacific Coast is a typical strand plant, often binding coastal sand dunes.