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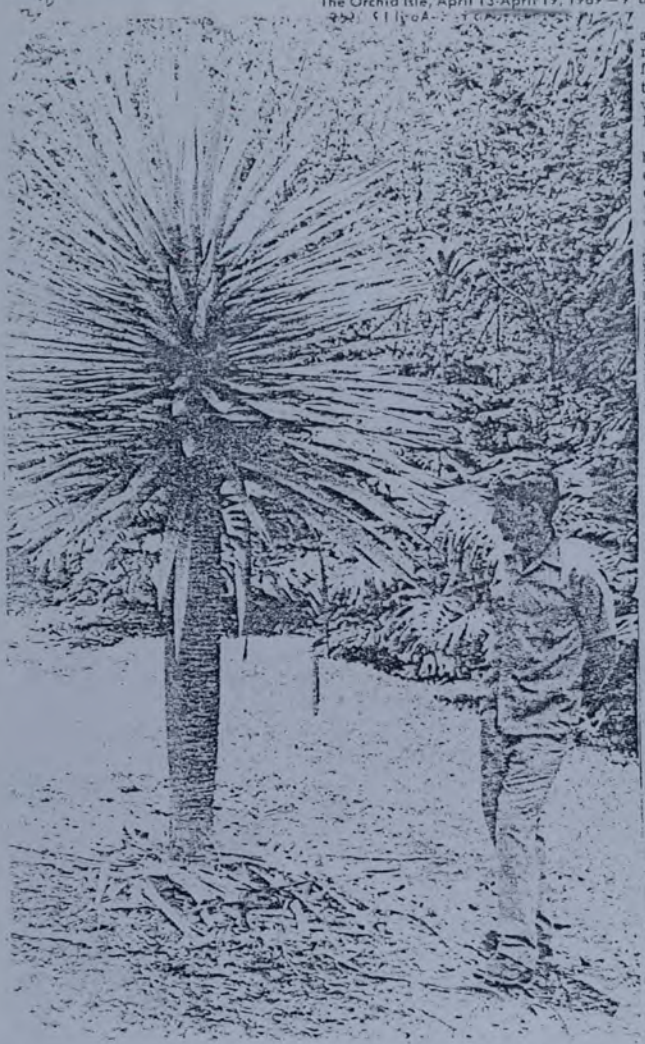
About the Institute
The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute 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.



DRAGON TREE — When a leaf is removed from this tree, the end closest the trunk is read and is said to look like a dragon's tongue. Pictured is Adolph Honahsen, park caretaker for the past eight years. The park provides an ideal stopping place between Hilo and Kona for a picnic or walk.

easier to grow, these species of trees would be popular to grow in gardens.

The trees and shrubs growing on the right-hand side of the drive way as you enter the Park are all exotics. Most are rare plants seldom seen in Hawaiian gardens or naturalized here. These are more spectacular in leaf and flower than the native species.

Some are odd in shape, like the grass tree from Australia or the flowers of the monkey-hand tree. Some are loaded with blossoms during flowering seasons, like the potato tree (prosaic name for a very beautiful tree) and Montezuma's hibiscus from Mexico. Other trees like the variegated fig and the feathery Casuarinas have beautiful foliage.

Manuka means "bird turn" or "bird pause". It was and still is a place where wild birds turn in or pause to refresh themselves with water from wet leaves and forest pools. Bird watchers should bring binoculars to help see the native birds in the bordering native woodland. Introduced species and migrants frequent the Park itself.

Manuka is a cool quiet restful place to spend a few hours or longer. It lies in the mist belt, so bring sweaters and protection from light rain. It can be positively chilly at night, but never cold enough for frost.

PASSE—This Chaulmoogra-oil tree growing on the grounds of Hale Mohalu obliquely symbolizes what is now at stake at this old isolated institution in Pearl City for leprosy patients. The oil was once used to treat leprosy, before the advent of sulfone drugs. Like the oil, the facility, too, now faces the end of an era.

Seventy Years Ago—1884

Jonathan Austin of Onomea, having turned loose seven mongooses about a year ago, notes a sensible reduction of rats amongst the cane. Mr. Austin has heard of complaints from poultry breeders.

Hundred Years Ago—1859

Misfortune seems to attend the government's plan of converting the Island of Kahoolawe from a convict station into a private sheep fold. A small coaster tried to put another batch of 170 sheep on that famous island, but a squall came up and she had to seek shelter at Maui, and as many as half the sheep may have been lost.

SWEZEY—Mary Hypatia Swezey, 94, of 45-090 Namoku St., died March 17. She was the wife of the late Otto H. Swezey, famous for his knowledge of Hawaiian insects. Private services were held Saturday. Burial to be in the family plot in San Jose, California. Survived by son Joseph A.; two grandchildren and three grandchildren.

Expenditures		
Mailing services -- meeting notices, newsletter, etc.	$ 373.72	
Preparation of newsletter -- typing, duplicating, etc.	339.10	
Treasurers billing and mailing	49.39	
Membership dues to other organizations		
Nature conservancy	10.00	
Flora Pacifica	25.00	
Hawaiian Garden's Foundation	25.00	
Friends of Foster Garden	25.00	
Award for best botanical exhibits		
Hawaiian Academy of Science	40.00	
Award to outstanding University of Hawaii		
Botany student	25.00	
Axis Deer Survey	50.00	
		$ 962.21

Balance of Bank and Savings Accounts as of November 30, 1970

First Hawaiian Bank commercial account	$ 343.93	
First Federal Savings & Loan Assn. (Nov. 11, 1970)		
Acct. No. 041587*	10,701.01	
Acct. No. 041588	294.00	
		$11,338.94

* Marie C. Neal bequest

Robert M. Warner, Treasurer

PUBLICATIONS

Review

Mammals of Hawaii: a Synopsis and Notational Bibliography. Dr. P. Quentin Tomich, 1969. 139 pages of text plus 85 pages of bibliography. Illus. Lancaster Press. Issued by Bernice Pauahi Bishop Museum as its 80th Anniversary Achievement. $5.00.

--Review by Otto Degener--

This book held my interest throughout one sitting to the end of its 139 pages of text. Though mammals are hardly plants, they certainly have influenced our Hawaiian vegetation. They have aided in pollination and seed distribution and they have hindered the healthy growth of our endemics by browsing, trampling, and denuding particularly slopes and geologically recent lava areas of top soil.

Research Review

The Department of Land and Natural Resources has sent invitations to approximately 100 persons including the scientific community and representatives of business and the public to participate in updating its forestry research program. The revised plan will be called "Forest Conservation Research Plan for the Seventies". Institute of Pacific Islands Forestry of the U. S. Forest Service is assisting in the planning.

Study and Survey of Ohia Decline.

Plans are underway to study the extent of the decline of ohia on the island of Hawaii, as well as the rate of spread and the cause. Dr. Franklin F. Laemmlen, Plant Pathology at the University, Clifton Davis of the Hawaii Dept. of Agriculture, State Forester Tom K. Tagawa, and Robert E. Nelson of the U. S. Forest Service are among those who will take part.

PROCEEDINGS OF THE SOCIETY

(Highlights only; not the complete minutes)

January 4, 1971

1. A very favorable report was heard on the Botanical Society's handling of the Smoker during the Annual Meeting of the Society of Western Naturalists with special thanks to Beatrice Krauss who had charge and Gladys Baker, Mrs. Max Doty, Ron Hurov, and Steve Montgomery who assisted.

2. After extended discussion of the desirability of inventorying and labeling arboreta and plant collections in Hawaii, Robert Osgood, H.S.P.A., was appointed interim chairman.

3. Speaker of the evening. Dr. Theodor Philip Haas, retired Plant Taxonomist, Philadelphia College of Pharmacy, formerly Assistant Curator, Botanical Gardens, Munich. The biology of flowers. Presented with many beautiful color transparency photographs to illustrate the great range in morphology of flowers and the many specialized adaptations of the various organs and parts.

PUBLICATIONS

Abstract. Zepernick, Bernhard. Pflanzennamen als Hinweis auf kulturelle Beziehungen innerhalb Polynesiens. Festschr. 100 jahr. Fest. Berl. Ges. Anthrop. Ethnol. Urg. Pt. 2:202-206. 1970. Comparing the names used in various Polynesian (and Micronesian) dialects for seven common plant species, the author concludes that the vernacular names were brought from the western archipelagoes to the eastern without touching the Tahiti-Tubuai area. Otto & Isa Degener.

Recent Literature

Degener, Otto and Isa 1970
Flora Hawaiiensis Eight new insert leaves dated June 10, 1970; 1 leaf, Crotalaria anagyroides; 1 leaf, Vicia menziesii; 2 leaves, Key to Genus Pelea; 2 leaves, Key to Family Umbelliferae; 1 leaf, Bidens awaluana; 1 leaf, Gnaphalium peregrinum.

botanists should by all means take advantage of this offer and will be richly rewarded. We owe Mr. Hallé a great deal for tackling this huge "hay stack" and bringing to light rare and long-lost collections.

/s/ Marie-Hélène Sachet
Department of Botany
Museum of Natural History
Smithsonian Institution
Washington D. C. 20560

Schiedea and Pleomele -- Comments by Otto and Isa Degener

Dr. St. John's interesting observations regarding Schiedea in Pac. Sci. 24:245-254. 1970, prompt us to draw to the attention of local botanists an obscure publication by Franz Buxbaum, appearing in Egle & Troll's "Beitrage zur Biologie der Pflanzen." In Dr. Buxbaum's reprint, appearing Jan. 1, 1961, he writes, among a few other paragraphs of special interest:

> "Kraft has already (1917) expressed the view that the origin of the Caryophyllaceae doubtless should be looked for in these Alsinoideae which are closely related in their flower structure to the Stellaria. This point of view can be definitely represented morphologically. Nevertheless it appears to be difficult from the 'Stellaria-Typus' to establish a connection to any other family of the Centrospermea because Stellaria typically is so much like a Caryophyllaceae. In the last analysis, the species of the Alsinoideae, Schidea (incl. Alsinodendron), which as woody plants typically deviate from the other Caryophyllaceae, would offer a connection. As an endemic species of the Sandwich Islands it does represent without question a very old relic. It is especially striking that the 'Staminodien' which correspond to the petals of other Alsinoideae superpose the sepalous sections of the perianth (the calyx of other Alsinoideae). The origin of the stamens from a'tender discus ring' however, is homologous to the growing together of the primary stamens in Phytolacca; this association is also noticeable in the obviously similar very old species Drymaria."

Buxbaum's reference to the herbarium specimen No. 25,047 should not read "Otto Degener, Isa Degener et Ward Hening," but ".... et Ward Fleming."

The Lanai endemic Pleomele is presently burdened with the two following binomials:

Pleomele lanaiensis Degener, Fl. Haw. fam. 68: Aug. 10, 1932.
Pleomele fernaldii St. John in Contrib. Gray Herb. 65:39-42. 1947.

If we follow the reasoning expressed in Taxon 12:202. 1963, the correct name for this halapepe appears to be the more appropriate P. lanaiensis Deg.

Editors Note: The above quoted text was translated by a friend of the editor for the convenience of non-German-speakers.

"To encourage the spread of the more beautiful, yet dangerous relative of the stinkweed is playing with fire. The spreading of our kamaaina naupaka kai, beach heliotrope, native cotton, caper, false sandalwood and ilima may be more appropriate and safer than scattering a gaudy malihini from Mexico."

/s/ Otto and Isa Degener
January 17, 1972

Natural Areas on Guam

Sir:

I read with interest Dr. Mueller-Dombois' report on the conference titled "Planned Utilization for the Lowland Tropical Forests," held in Indonesia last summer. Under the symposium subsection Forest Conditions in the Pacific Islands he mentions that it was reported that on Guam "a few Conservation Reserves have been established that seem to be well protected."

Maps show four areas, Ipiga, Anao, Cotal, and Bolanos, which were designated as Conservation Reserves some years ago. To date that has been about the extent of the protection of these areas. The Cotal Reserve, for example, has many expanding erosion scars, the swordgrass-ironwood cover burns periodically, and a part is used for motor-cycle racing.

Two years ago, Mr. Perez, then Associate Director, Guam Department of Agriculture, told me that he had been unable to learn exactly what official status these "conservation reserves" had or what were the intended limitations on their uses. Presently, he is Director of the Department of Land Management. In this position he has a direct responsibility for the areas in question. I am unable to say whether there have been further developments. An inquiry to him would be in order. I intend to do this.

The U. S. Forest Service has been urging Territory officials to give greater attention to the fire, erosion, and vegetation protection problems since 1966. The present administration of the Government of Guam is indeed aware of the importance of good conservation practices. Mr. Perez is a graduate forester with a masters degree in wildlife biology. The Director of the Department of Agriculture, Mr. Jose Barcinas, Jr. graduated from the University of Hawaii. Last year his Department created a forestry division. Its immediate concern is fire protection and the reforestation of eroded areas. The U. S. Forest Service is providing funds for the development of a tree nursery to grow native trees as well as selected exotics.

The U. S. Navy on Guam is cooperating with the U. S. Forest Service on research in the establishment of native and exotic species useful for fuelbreak plantings, erosion control, and landscape beautification. The best residual forests on Guam are on the Naval Magazine, and on Andersen Air Base, protected by the military.

The conservation picture for Guam is improving, but it has a long way to go.

/s/ Craig D. Whitesell
January 31, 1972

POLYGONACEAE Rumex giganteus One clone grown at WBG grew so rapidly that constant pruning was required. Was destroyed.

AMARANTACEAE Achyranthes splendens Germination and pot cultures were excellent. All sixteen seedlings planted seemed to have adapted to open hilltop planting at WBG. Have flowered and fruited profusely.

Charpentiera obovata (papala) Have been grown successfully from seeds, seedlings, and cuttings. Four of the five planted during 1965-66 still survive at WBG under a shady, moist habitat. Possibility for a lowland ornamental in lowland xeric conditions.

Nototrichium sandwicense (kului) Although xerophytic in nature, three seedlings have survived moist outdoor propagation at WBG since 1965. Seven of eight plants planted still survive.

CARYOPHYLLACEAE Alsinidendron trinerve Has done well in pots at HBG and WBG. Flowered and fruited in ground plantings at WBG. Seemed to have been a victim of falling Eucalyptus branches.

Schiedea kaalaa Have flowered and fruited in pots at HBG and LA, but failed to survive outdoor plantings at WBG.

(To be continued)

LETTERS

Plant Introductions

Sir:

According to the North Shore News (Haleiwa, Oahu), a group of well-intentioned residents in the Sunset Beach area are scattering marigold seeds along the roadsides so that the "area may soon be as colorful as the famous Kona Coast".

Perhaps our Society should be made aware that many amateurs are eager to improve the Islands. In certain cases guidance by botanists or horticulturists may increase the value of such energy as exerted by the "Sunset Savers" of the north shore of Oahu.

Not wanting to have our roadsides marigold yellow, we took the liberty of mailing the following letter to the Editor of the News:

"We don't like to be kill-joys, but we read with some alarm in your Christmas Issue that seeds of marigold are being scattered helter-skelter along North Shore roads. Marigolds contain various acids, saponins, resins and oils. Such plants have been found dangerous to livestock. What if the beautiful, scattered marigolds spread to pastures, farms and gardens causing mischief?

"Enclosed is a photograph taken a month ago along the Saddle Road on the Island of Hawaii of the wild marigold (Tagetes minuta L.), commonly known as stinkweed. It is spreading rapidly, particularly about Pohakuloa. Under authority granted in Chapter 27A, Revised Laws of Hawaii, 1955, our Board of Commissioners of Agriculture and Forestry has declared this plant a noxious weed.

The many groups and individuals working on the axis deer issue can bring about what may prove to be the defeat of this ill-advised proposal once and for all!

Steve Montgomery
Committee on Vertebrate Herbivores

More "Degener on Deer".

"In 1928 West Molokai about Mauna Loa had considerable patches of dense, dry forest, the trees badly browsed by axis deer and the tender seedlings eaten or trampled to death. At that time I collected vouchers for preservation of such beauties as the native gardenia, naio, the golden-leaved keahi, lama or Hawaiian kaki, cotton-leaved nehe, kolea with pinkish leaf buds, the fragrant-flowered coffee relative alahee, ahakea, the red-flowered wiliwili, the Hawaiian olive or olopua, etc. A visit to the precise spot in January 1960 was surprising: no trace remained of the forest except for a few wiliwili trees (the trunks and twigs bear black thorns) and a single alahee! According to a Hawaiian already old in 1928, he and his late father many years before had used cane knives to penetrate the jungle of shrubs, trees and ieie vines growing in this vicinity. I believe this story as the general area is sprinkled here and there with recently fossilized land shells that must have had dense, moist undergrowth in which to live. In summary the original dry forest of West Molokai has been wiped out by axis deer during the last twenty to thirty years.

"In 1964 Lanai about Kanepuu was still a beautiful dry forest where axis deer took cover from hunters and the sun, and freely wandered along their own well-worn trails nibbling twigs and trampling native seedlings. Mrs. Degener and I botanized here extensively. This is the island on which the late George C. Munro (1866-1963) spent twenty years as rancher and then manager. To facilitate our making a representative collection of Lanai plants, Mr. Munro sent us a list of the species he had collected in Kanepuu up to 1930. Of his 41 species (a set of Kanepuu plants is in the Bishop Museum as proof), we found only one third remaining!"

Resolution Regarding Goats in National Parks in Hawaii

On April 5, 1971, the Hawaiian Botanical Society adopted a resolution requesting "that the Park Service administrators institute an effective program of feral goat eradication" in National Parks in Hawaii. The intent of this resolution was to point out that the Society was convinced that only by total elimination of feral goats in Hawaii's National Park would the National Park Service be able to carry out its primary goal of protection of the native plant and animal species in the parks, and permit the restoration of the parks to reasonably pristine conditions in which they could be maintained. Senator Fong also asked the National Park Service to implement the goat eradication program and is "pursuing this matter with the purpose of obtaining sufficient funds in the fiscal 1973 Interior appropriation" (letter to Dr. P. Q. Tomich, Dec. 23, 1971).

The Director of the National Park Service, however, has again stated that "it is not our intention to eliminate goats from the Hawaiian national parks", (Nat. Parks and Conservation Mag., Nov. 1971, Vol. 45, No. 11, p. 35). Moreover, Congresswoman Patsy T. Mink (letter to Dr. P. Q. Tomich, Dec. 29, 1971) and Governor John A. Burns (letter to Mr. C. G. Kaigler, Feb. 4, 1972) have indicated that they favor "control" rather than "eradication" of goats in Hawaii's National Parks. Justification for this stand seems to be based on a statement which appeared in a book by F. Fraser Darling

Continue on page 19

"Dear Otto:

Your note of 19 June, with its parcel of goodies (old botanical correspondence and Fl Haw., drawings), arrived today. For my part, I have just returned from five weeks working in Europe. Our paths have crossed numerous times in the years before and following the war, and again at a pension we shared outside London in the 1950's. After his death I contacted his nephew in Vienna and purchased all of the material that Rock had not specifically bequeathed elsewhere. Unfortunately, there is nothing in the collection prior to 1930 (the period that in many ways was the richest). There are a great many family letters, unidentified photographs, passports from the time he first came to Hawaii until the last, and ephemera. It is a sizeable collection. The letters, for the most part, are in German. Until it has been catalogued it can not be made available to scholars, except as it is consulted here on our premises. I agree with you that he was a wonderful raconteur, and I have often wondered if anyone in Hawaii had the foresight to tape some of his autobiographical accounts."

Aloha,

/s/ Otto Degener

(*Rock is a "maennliches Bekleidungsstueck fuer den Oberkeerper;" and a "weibliches Bekleidungsstueck von der Huefte abwaerts."

"Rock" is a male garment for the upper body and female garment for the lower body, according to . Kirsch.

Ed.)

SOCIETY BUSINESS

New Officers

On the back page of this Newsletter are listed the Officers elected at the December meeting.

Minutes of the Regular Meeting, 5 November 1973

The meeting was brought to order by the president, Ted Green at 7:35 PM. The minutes of the previous regular meeting were read and approved. The treasurer's report submitted for November showed balances of $11,699.20 in the Neal Fund, $455.11 in checking, and $120.64 in savings accounts, respectively. There were 41 members and 25 guests in attendance.

Correspondence was read from: 1) Flora Pacifica requesting financial support for next year's show; 2) a request for nominees to serve on the Hawaii Water Resources Regional Commission; 3) from the University of Hawaii announcing a symposium on diversified agriculture; and 4) a news release from the American Association of Nurserymen.

Reporting for the Agriculture Advisory Committee, Ron Hurov presented his findings from a survey he made of the labeling of plants at 19 of the botanic rdens and arboreta throughout the State. He said that the care was variable. Most poor labeling was a result of financial straits. He found that the Honolulu Zoo and the Pacific Tropical Botanical Gardens were the best kept and could serve as models for the others. He was to publish a list of his survey in the Newsletter. Dr. Sagawa pointed out that one would have to examine the function of each of the organizations before one could level criticism.

The Nominations Committee (Manhoff, Montgomery and Gay) presented the following slate of officers for 1974:

President:	Dr. William Theobald
Vice-president:	Dr. Derral Herbst
Secretary:	Mrs. Jean Maka
Treasurer:	Mr. Paul Yamanaka
Board of Director's:	Dr. Charles Lamoureux and Mr. Ted Green

A round of applause was given Mrs. Ercell Woolford, the outgoing treasurer who is retiring to Missouri with her husband.

NEW BUSINESS: Milton Manhoff presented a motion that the Board of Directors of the Society be increased to 7 members and officers serving rotating terms, two 3-year members to be elected each year. He suggested this as a means of maintaining continuity of people in the Executive Board. In answer to a question passed by Dr. Palmer, the President stated that he had found no problems with the present arrangement. Dr. Sagawa added that it would be hard to get that many candidates. A motion by Dr. Palmer that this matter be referred to the Executive Board passed.

OLD BUSINESS: It was announced that 50 endemic trees would be planted on the morning of 17 November on the front lawn near Hale Kuahiwi on the University of Hawaii campus. This had met with the approval of the East-West Center which was also to provide the refreshments. Some of the species to be planted were Hibiscus waimeae, ohai (Sesbania tomentosa), wiliwili (Erythrina sandwicensis), koa (Acacia koa), kauila (Colubrina oppositifolia), and 'aulu (Sapindus oahuensis). The University was to supply the shovels but volunteers were needed for the planting and to supply the compost. The plants were to be supplied by the Lyon Arboretum. Dr. Lamoureux mentioned that a similar plan had been stymied by the University a decade ago.

The Executive Board decided to increase the life membership to $100 for a single membership and to $150 for a couple.

Dr. Theobald introduced the speaker, Dr. Charles Lamoureux, Professor of Botany, University of Hawaii who gave an illustrated presentation on "A Botanical Journey through Indonesia".

A plant exchange then followed.

Hostesses for the evening were Rosa Kirsch and Marion Mapes.

The meeting adjourned at 9:30 PM.

W. C. Gagne
Secretary

Annual Report of the Secretary for 1973

The Society maintained its involvement especially in the areas of conservation and agriculture. In conservation matters we provided input to the Governor's Environmental Council for them to draft an "Environmental Policy Act", drawing upon a wide range of community organizations and individuals. We also supported the establishment of the proposed Wilderness Area designation for the North West Hawaiian Islands Wildlife Refuge and the Ahihi Bay-Cape Kinau State Natural Area Reserve on

distinct species of Trematolobelia, the name T. crostachys cannot be used as it has been preempted nce 1913 for the Kauai species. Faced with this dilemma, the unnamed Oahu species was christened Trematolobelia sandwicensis by Degener in the Flora Hawaiiensis, Fam. 339. October 15, 1934.

We now appeal to the expert horticulturists of private and public botanic gardens on both Oahu and Kauai to plant and raise to the flowering and fruiting stages Trematolobelia plants from the Koolau Range of Oahu and from the mountains of Kauai. These should be grown, preferably from seeds, under controlled conditions next to one another. Then, as former Ranger James Lindsey showed in growing a Maui silversword plant next to one from Hawaii, botanists and horticulturists can decide for themselves whether they choose to remain old-fashioned "lumpers" or up-to-date "splitters." We tend to be "splitters" as were Yunker with Peperomia, Sherff with many Compositae and other groups, St. John with Cyrtandra of Oahu, and Stone with Pelea.

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1) Bot. Beech. 88.
2) Ann. Naturh. Hofmus. Wien 7:430c.
3) Phyc. Gen. 410.
4) Coll. Haw. Publ. Bull. 2:45.

The Roosevelt-Pinchot View of Natural Resources Conservation in 1908. Or words of wisdom not adequately heeded and still timely?

"Governors of the Several States and Gentlemen:- welcome you to this Conference at the White House. You come hither at my request so that we may join together to consider the question of the conservation and use of the great fundamental sources of wealth of this Nation. So vital is this question that for the first time in our history the chief executive officers of the states separately, and of the states together forming the Nation, have met to consider it.

With the governors come men from each state, chosen for their special acquaintance with the terms of the problem that is before us. Among them are experts in natural resources and representatives of national organizations concerned in the development and use of these resources; the Senators and Representatives in Congress; the Supreme Court, the Cabinet, and the Inland Waterways Commission have likewise been invited to the Conference, which is therefore national in a peculiar sense.

This Conference on the conservation of natural resources is in effect a meeting of the representatives of all the people of the United States, called to consider the mightiest problem now before the Nation; and the occasion for the meeting lies in the fact that the natural resources of our country are in danger of exhaustion if we permit the old wasteful methods of exploiting them longer to continue.

With the rise of peoples from savagery to civilization, and with the consequent growth in the extent and variety of the needs of the average man, there ...es a steadily increasing growth of the amount ...manded by this average man from the actual resources of the country. Yet, rather curiously, at the same time, the average man is apt to lose his realization of this dependence upon nature.

Savages, and very primitive peoples generally, concern themselves only with superficial natural resources; with those which they obtain from the actual surface of the ground. As people become a little less primitive, their industries, although in a rude manner, are extended to resources below the surface; then, with what we call civilization and the extension of knowledge, more resources come into use, industries are multiplied, and foresight begins to become a necessary and prominent factor in life. Crops are cultivated; animals are domesticated; and metals are mastered.

Every step of the progress of mankind is marked by the discovery and use of natural resources previously unused. Without such progressive knowledge and utilization of natural resources, population could not grow, nor industries multiply, nor the hidden wealth of the earth be developed for the benefit of mankind.

From the beginnings of civilization, on the banks of the Nile and the Euphrates, the industrial progress of the world has gone on slowly, with occasional setbacks, but on the whole steadily, through tens of centuries to the present day. But of late the rapidity of the process has increased at such a rate that more space has been actually covered during the century and a quarter occupied by our national life than during the preceding six thousand years that take us back to the earliest monuments of Egypt, to the earliest cities of the Babylonian plain.

When the founders of this Nation met in Independence Hall, in Philadelphia, the conditions of commerce had not fundamentally changed from what they were when the Phoenician keels first furrowed the lonely waters of the Mediterranean. The differences were those of degree, not of kind, and they were not in all cases even those of degree. Mining was carried on fundamentally as it had been carried on by the Pharaohs in the countries adjacent to the Red Sea.

In 1776 the wares of the merchants of Boston, of Charleston, like the wares of the merchants of Ninevah and Sidon, if they went by water, were carried by boats propelled by sails or oars; if they went by land, were carried in wagons drawn by beasts of draft or in packs on the backs of beasts of burden. The ships that crossed the high seas were better than the ships that 3,000 years before crossed the Aegean; but they were of the same type, after all - they were wooden ships propelled by sails; and on land the roads were not as good as the roads of the Roman Empire, while the service of the posts was probably inferior.

In Washington's time anthracite coal was known only as a useless black stone; and the great fields of bituminous coal were undiscovered. As steam was unknown, the use of coal for power production was undreamed of. Water was practically the only source of power, save the labor of men and animals; and this power was used only in the most primitive fashion. But a few small iron deposits had been found in this country, and the use of iron by our countrymen was very small. Wood was practically the only fuel, and what lumber was sawed was consumed locally, while the forests were regarded chiefly as obstructions to settlement and civilization.

Such was the degree of progress to which civilized mankind had attained when this Nation began its career. It is almost impossible for us in this day to realize how little our Revolutionary ancestors knew of the great store

of Kipuka Nene Camp Grounds. Whether caused by sunlight shining through a discarded bottle lying on dry hay or more likely by a careless picnicker or demented arsonist is not known. But by noon Friday it had burned through 2,500 acres of nearly worthless Schizachyrium prairie and nearly priceless forest containing the rare kokio. But under the able direction of Supt. Gene Balaz about seventy-five men comprising personnel of the Park, Job Corps, State Forestry Division and the Kilauea Military Camp were stemming the holocaust. Thus by afternoon the fire had been limited to one solid front one to two miles long moving northward with the wind. Saturday the main highway from the city of Hilo to the Park was intermittently commandeered and closed by the Police to traffic, being used as an emergency landing strip for helicopters and crop-duster 'planes to transport men, equipment, water and 2,000 gallons of chemicals such as ammonium phosphate to the fire scene. At time of writing, Sunday July 26, only a few "hot spots" remain for quenching.

Before the coming of man with his plant introductions, by accident or design, volcanic-ignited forest fires must have been relatively common; and such burned over areas would be clothed with vegetation from incompletely burned plants, from root sprouts and from seeds and spores scattered from afar. But now, because of World War II, we have an unusually inflammable grass that not only encourages a fierce killing fire, but hinders Hawaii's delicate native flora from becoming again established. After the native plants have been wiped out, aggressive Mainland weeds such as Buddleja, Rubus and the very same Schizachyrium will take over permanently. The July 1970 fire at Hawaii Volcanoes National Park is not a fire whose scars will soon fade - it is causing permanent damage to the unique biota of the forest area. The fundamental cause of the holocaust: C'est la Guerre.

Dr. Otto Degener
Ranger-Naturalist, 1939
Hawaii National Park

Line an 8- or 9-inch aluminum foil pie tin with soft vanilla ice cream. Place in freezer until firm. When ice cream crust is firm, add slightly thawed green mango sauce as pie filling, decorate with whipped cream as an all-over or criss-cross topping, sprinkle with cinnamon and return to freezer. When solidly frozen, cut into pie-shaped pieces and serve for dessert.

GREEN MANGO PIE* YIELD: 6 servings

3 cups pared mango slices
1 to 1½ cups sugar
1 to 2 tablespoons water
1 to 2 tablespoons flour if mangos are juicy
2 tablespoons butter or margarine

Line a pie pan with pastry. The pan may be a paper pie plate with metal rim, a pyrex, aluminum, or enamel pie plate. Put a layer of mango slices in the pastry shell, sprinkle with lemon juice, then with sugar and flour, dot with fat and cover with another layer of fruit, sprinkle with lemon juice, then with sugar and flour, and dot with fat. Cover with pastry, sealing the upper and lower crusts together well. Do not cut any openings in the upper crust. Place in freezer overnight. Wrap in cellophane, seal, and insert in stockinette. Return to the freezer.

Serving. Remove pie from freezer, take from wrappings, and place it in the solidly frozen state in a 450° F. oven. As soon as the upper crust is thawed (about 5 minutes), cut slits in it to permit the escape of steam during baking. At the end of 15 minutes, lower the oven temperature to 375° F. and continue baking until the crust is a delicate brown and the mangos are tender (about 40 minutes).

DEEP DISH GREEN MANGO PIE

Make this pie according to the directions given above except increase the amount of filling and use a deeper dish (about 1½ inches) and omit the lower pastry crust. This method avoids any danger of an underdone, juice-soaked lower crust. Do not use a paper dish because the fruit juice tends to soak into it.

South America has not sent many human immigrants to Hawaii; but many plant immigrants have been brought in to "work" here and fill the needs of our people. Some like the avocado, sweet potato and tomato grow food for us. Others produce valuable wood. Many are here to entertain us with their beauty in our gardens.

Among the latter are the Allamandas, four species of them. Three have large yellow flowers of a hue so richly golden they might have been part of the gold once lavished on Inca temples. The fourth species is a shrub with smaller rosy-purple flowers, but it is not so common as its showier relatives.

Unless the newcomer to Hawaii has lived or traveled in frost-free countries, he probably has not seen Allamandas growing out in the open. Many have never seen them before coming to Hawaii. Naturally they are surprised that such large handsome flowers should be so little known outside of the tropics.

Allamandas cannot stand frost. Neither do they like the amount of shade which most houseplants must endure. They prefer a warm sunny rather humid climate.

Allamandas can be grown in pots in a warm greenhouse and will flower there with proper care. But these grown plants are a far cry from the luxuriant vines which screen buildings, climb trees and cover stone walls or embankments in Hawaii with their leafy branches and gorgeous golden flowers.

Also, the vine wears its glossy leaves and clusters of large showy flowers throughout the year. You rarely see a vine any time of year without flowers. Most species in Hawaii rarely if ever set fruit. Possibly this id due to the lack of the proper insects or birds to pollinate the flowers with their long narrow central tubes.

So the allamandas to not spread out of bounds and become pests the way maile pilau, white moonflower, banana poka and some other vines do. They can be pruned and trained.

They are hardy in a tropical way, which means that they are not fussy about soil and fertilizer, are subject to few plant diseases and are not subject to insect attacks. They either grow their own insecticide or do not taste good to the insects we have here.

They are not listed as poisonous in Arnold's book on the "poisonous Plants of Hawaii", but have been used in folk medicine in their native country, so many contain some drug principle. Their milky sap does produce a poor grade of rubber. Do not let it dry on your hands or clothing or you will have grouble getting it off.

The generic name, Allamanda, honors Dr. J. N. S. Allamand of Leiden Holland. Apparently this is Dr. Allamand's chief claim to fame. The writer has not been able to learn anything more about him. Today when plants new to science are found they are no longer named for obscure persons. Instead their names must be descriptive or refer to the place where they were found.

Flora Hawaiiensis

By E. H. BRYAN, JR.

Fifteen more leaves, most of them printed on both sides, have been issued by Drs. Otto and Isa Degener for their "Flora Hawaiiensis," new illustrated looseleaf flora of the Hawaiian islands. These leaves present a description of the plant on one side and an illustration of it on the other. Publication was aided by a grant from the National Science Foundation.

Groups included are: The casuarina family and its familiar ironwood tree; the nettle family and a key to its genera; the purslane family and key to genera; the swine watercress, a member of the mustard family; the papaya and its family; the Oahu ohia ha; a genus (Calonyction) of the morning-glory family and the moonflower; the Jimsonweed and a variety tatula; two species and a variety of a composite, known nehe.

Dr. Degener has also written, in the Asa Gray Bulletin, a paper on Hawaii's pioneer botanist, Dr. Wilhelm Hillebrand, who was born in Prussia, educated in Berlin, came to Hawaii in search of a more healthful climate in 1851, and the following year married the stepdaughter of a prominent Honolulu physician and conchologist, Dr. Wesley Newcomb.

Dupl. to:
Aarhus
Cornell
Leiden
Kew, Zurich
Ulu, Mich.
Helsinki
Ills., Iowa
Minn., Mo.
Montreal
Tsens, US Cal
Wm. Stern
Hocking, Voss
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Skovsted, Shinners, Stewart, Straatmans, Tavares, Silvestre, Yonagesi

Hawaii's Plants: Malihini and Kamaaina

Hon. Star-Bulletin, 6/13/70

SIR: Greatly interested in Harold Hostetler's May 31 article (Sunday Star-Bulletin & Advertiser) about the fact that "many Island trees fall victims to imports," I wish to add a few pertinent remarks:

Regarding the hau, Dr. Olof Selling stated in a Bishop Museum monograph in 1947 that he had found its fossil, amber-like pollen in ancient deposits of earth. This is unquestionable evidence that this straggling tree is native to the Hawaiian Islands. In fact, it has been here so long that it has had time to become modified into several varieties. The common one has a corolla with a purple "eye," while another kind growing about Hilo and elsewhere has a uniformly yellow corolla. Hence, instead of stating that the "Hau may or may not be native to Hawaii," let us classify it as a kamaaina.

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A third indication that the kukui is actually a malihini is the silence in its groves, a silence, except for the occasional "plunk" of its falling "nuts," evident even before the extermination of many of our native birds. The truly native forests, in contrast, are cheerful with the song of the iiwi, the whirring flight and song of the apapane, and the activity of surviving native birds. These, over the ages, have adapted themselves to feed in the true Hawaiian forest whose plants, in turn, have adapted themselves to being pollinated and having their seeds disseminated by these birds. The kukui, however, is such a recent introduction that no bird, not even the native crow, has learned to make use of it. Though several varieties of the kukui grow in the Hawaiian Islands, one with mango-like leaves, such varieties according to recent observations are introductions.

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For the few readers who may be interested in this group, I might add that four kinds grow native in the Islands. Two kinds are a hairy uluhe (**Dieranopteris emarginata**) especially common on Hawaii, and a smooth uluhe (**D. Linearis**) common just about everywhere except on Hawaii. Then there is a rare, more feathery false staghorn (**Sticherus owhyhensis**) growing on all our major islands, but no other place on earth. The fourth kind is the giant false staghorn fern (**Hierlopteris pinnata**), native to all the larger islands but growing mostly in the rainforests. It is light green, very coarse, and its frond segments resemble a hawk with wings outstretched in flight.

That the two common kinds of uluhe or **Dieranopteris** are harmful to our present forests is true because of modern man's carelessness — a dropped cigarette can cause a disastrous fire in the old, dry plants. But otherwise, the uluhe is one of the very best native plants to heal landslide scars and to prevent erosion because of the dense duff and humus with which it covers the ground. Under natural conditions the native forest competes successfully with it — in fact, it had done so for millions of years before the coming of Captain James Cook and tobacco.

OTTO DEGENER, Botanist
University of Hawaii, 1925-2

Hunt

A beautiful stranger from Central America came to live with settlers in Hamakua highlands many years ago. It was so beautiful and so disarmingly gentle that family after family welcomed it in their gardens and no one dreamed that it was a villain. Crafted Tale

It is so weak and tender that it cannot stand alone but must have support for every advance it makes. So it gropes with its long green tendril fingers for tree trunks, bushes, fallen logs, or even weeds to lift itself into air and sunlight above the undergrowth. 7/26 – 8/1170

The stranger was the pink passion-flower, locally called "banana poka" from the shape of its yellow to salmon colored fruits. It is known to botanists as Passiflora vitifolia (grape-leaved passion-flower). Actually the leaves are more deeply lobed than grape leaves but do have the same texture and sawtoothed edges.

Its flowers are simpler in apparent structure than those of most Passiflora. It has no elaborate fringed corona around its center. Instead it has a circlet of tiny "pearls" about its throat. This and its pure pink color give it the appearance of innocence and modesty.

At first it was a well behaved immigrant, covering trellises, screening unsightly buildings and staying pretty much where it was told to stay. But gradually it wandered afield, thriving best in sheltered places where cattle and other livestock could not reach it. Finally it reached the koa forest where it had plenty of trees to climb and could keep out of reach of most animals.

For a long time the cattle ranges were not fenced. The damage which cattle did to the forest became so obvious that the Dept. of Forestry of the Territory of Hawaii was able to convince enough plantation people and even the ranchers that the government forests should be fenced, the cattle rounded up and removed, and the wild cattle shot to keep them from breeding with the improved domestic strains.

So the fence was built and the cattle and horses removed, but not the lovely pink passion-flower which now had a respite from attack in its forest "homestead." Wild pigs rooted it to be sure; but they also ate the banana shaped fruit and helped to spread it. The wallows and rooted areas the pigs made helped make little clearings where new plantings of the vine could take hold.

The native Hawaiian birds are not fruit eaters to any extent; but some introduced species of birds like the white-eye and the Leiothrix do like fruit. How much these birds had to do with the spread of the "banana poka" we do not know.

We do know that the vine has taken over hundreds of acres of native forest close to the pasture boundaries, killing the trees by smothering them with its "green shroud" of leafy branches. Lesser growth is completely clovered and killed. In time even the tallest koa trees, Hawaii's finest timber trees, succumb to the vines which hang like curtains from the dead and dying branches.

12/1-150

By JAN TenBRUGGENCATE
Advertiser Kauai Bureau

LIHUE — The kids of Hawaii have always known that the ti leaf plant is best used as a saddle for riding down long, steep, grassy hillsides or bouncy mudslides. Neighbor Island

The stalk is snapped off a few inches below the leaves. You sit on the leaves and hold on to the stalk. Then, keeping feet up and holding the stalk tight, you careen down the hillside, rocking with the bumps like you were riding a bucking bronco.

The slippery green ti leaves add speed and a modicum of padding to the slider's performance. Editor

But there are other uses, too.

When we were kids on Molokai, we would go to the far east end of the island and hike up Halawa Valley to the pool under what we called Halawa Falls. The real name is Moa'ula.

Someone told us there was a great lizard in the pool at the base of the falls. To find out if the lizard was awake, we threw ti leaves into the pool. If they floated, it slept and it was safe to swim. But if it swirled around and was sucked under, the lizard was awake and it was unsafe.

Later we learned it is tradition in many Hawaiian pools and streams to check with a ti leaf. In adulthood, it makes sense: if the leaf is sucked under the surface, the water is turbulent and unsafe for swimming. But the legend of the lizard was more fun. 12/16/79

The ti leaf really came into its own in preparations for a luau.

A long rope with floats would have

dried ti leaves dangling from it to chase fish into the net at a hukilau. The fish would later be wrapped in fresh ti leaves for cooking in the imu.

A lot of things in the imu would be wrapped in ti leaves. Some say it allows foods to retain their flavor, but most feel the ti leaf imparts food with a little flavor of its own that makes everything from the imu delicious.

The ti leaves served as plates in the less formal luau, and they could be folded into drinking cups.

Kids would roll up a strip of ti leaf, telescope it, and then blow through one compressed end to make a flute-like noise. The instrument is called a pu or pulai, says Otto Degener in his "Plants of Hawaii National Parks."

The ti leaf, as it dried, was waxy, and could be woven into a serviceable rope. The Hawaiians of old made sandals of ti leaves and sometimes thatched houses with them.

The root of the ti plant, thick and white, could be baked in the imu to make a candy. Degener reports that before the first visit of Europeans, the Hawaiians made drinks with low alcoholic content from the ti root, sugar cane and from sweet pototo. But by 1800, they had received instructions in distilling the ti root mash in the great iron cauldrons used by the whalers to render blubber. Degener says the result was called okolehao — okole comes from the name for the bottom of a calabash, and hao means iron, Degener writes.

Ti leaves in old Hawaii were a sign of spiritual power. Priests would wear them around their necks.

A stalk of ti was used as a sign of surrender in Hawaiian battles.

And if you see a lot of houses in Hawaii with ti plants in the front yards, it's because they are reputed to ward off evil, as well as be remarkably useful.

The third botanist was a Frenchman educated in Prussia, Adelebart von Chamisso, who came to the islands in 1816 with expedition under L. Korrenue.

old way. How well it stays.

"OLD folks believe in Kuula, the fishing god," Auntie Muriel said. "If you put your (stone) fish god at the opening of the makaha, the fish won't go out. The god of the sea is Kuhaimoana. Pele's brother. The old folks kept it down here on the island.

"When you give the stone a bath, it brings the fish in. The old folks had a prayer, but we don't know it any more. 2/25/79

"When we came to Mokauea to fish, we would build a kaheka, a stone house, in the shallow water. The fish go into the house, and you keep just enough to eat. Then you break up the house when you go home."

The philosophy of never taking more fish than you need or give away to your ohana is strongly inherent in the people of Mokauea, Kelly said.

"My grandfather used to know a lot of old things," Herman Pualani mentioned to Auntie Muriel. "He has been through the tunnel in Moanahua. I know generally where it is, but I can't find it. There are two big canoes in there, and the bones of guys sitting against the wall.

"Maybe the mountains have moved," Auntie Muriel said. "The know. Maybe that's why you can't find the tunnel."

that his bride, in a way, would be my Fiji "daughter-in-law." As I had never heard her name I asked Aloisio one last question:

"Aloisio, my son, what is the name of the girl you marry?"

Almost speechless with grief at our parting, he replied "I dunno."

I could understand that his love for her far transcended in importance his knowing her name.

I hope these few pages will help attract the attention of more good people to a knowledge of some sordid conditions prevailing in the Fiji Islands. Perhaps these people will join forces with the better white element already there to ameliorate the wretched lot of my dusky friends and particularly of my Fiji "son" and "daughter-in-law" and, for all I know, my Fiji "grandchildren." *Sa moce* to them all.

Botanist Degener In Fiji On An Anti-British Hate

WE have received from Mr. Otto Degener, of Hawaii—that indefatigible producer of books with a botanic flavour—one of his latest contributions to Pacific bookshelves—namely "Naturalist's South Pacific Expedition—Fiji."

Mr. Degener spent 8 months in the South Seas, before World War II, as a member of the scientific expedition organised by Mrs. Anne Archbold, and which travelled in the famous ocean-going junk, Cheng Ho. This colourful account of their voyage on the Cheng Ho, and of his search in Fiji for botanical specimens, is of interest to the general reader as well as to the botanist. Mr. Degener has a racy style and can tell an excellent story.

The book was published in 1949, and one Honolulu reviewer described it as "an account of botanising, of social studies, of cannibalism, of fire-walking, religion, native treatment for leprosy, Fiji drums, tatooing and pet doodlebugs. . . . Degener . . . discourses on the copra industry, witchcraft, native chewing-gum and jungle intoxicants."

In this book, Mr. Degener rather strongly criticises British Colonial rule as he saw it in Fiji, and he contrasts the condition of the Fijians unfavourably with what he is pleased to describe as the emancipated Hawaiians. However, as no one is likely to accept Mr. Degener as an authority on the merits or otherwise of Colonial rule, it is not necessary to accept seriously his references to Colonialism. His books on botany are interesting and valuable; but, as a writer on political affairs he goes into that class of Americans who, in the past 50 years, by their persistent and ill-informed pre-occupation with Colonial affairs in South-east Asia, laid the foundations for the present unholy mess there.

There was no trouble in our North-west Pacific frontier while Brown Brother was kept in his proper place under the system of Colonialism, and helped gradually to assume the responsibilities of self-government; but, since the New Planners have given us an independent Burma, and India, and Indonesia, and Philippines, our troubles have mounted high and are still mounting. . . . If Mr. Degener's idea of a well-governed Pacific Territory is seen in that rather mongrel array in Hawaii, then most people probably will vote for Fiji as it is under British "Colonialism."

ANYONE who knows the real Fiji, and in the light of that knowledge reads Mr. Degener's book, will question the honesty of Mr. Degener's conclusions, in relation to British rule there.

It looks very much as if Mr. Degener is an Anglophobe who used his opportunities in Fiji to feed his anti-British hates. There is proof of this in his persistent, unsupported accusation that the British, for their own selfish purposes, keep the Fijians in a state of peonage, and that the Fijians are miserably poor, ill-treated and dispirited. He refers on page 277 to Fiji as "a colony whose white population with very, very few exceptions considers the kai Viti sub-human"; and he quotes and heartily endorses the statement of a hate-ridden negro: "The British Empire is one of the greatest enslavers of human beings."

It is indicated that Mr. Degener tried to bounce one or two British officials, and was put back into his place with a thump. He formed a friendship with a Fijian youth, who called him "father"; but when he wanted to take the Fijian back with him to Hawaii, to be a sort of "son" and personal servant, the Fiji authorities very wisely refused permission. Whereupon Mr. Degener, in capital letters, says the Fijians are "truly island prisoners," and cuts loose with a paean of hatred of all things British.

Perhaps we had better leave it at that. Mr. Degener publishes the book himself (see advertisement in this issue) and its price is $5—which, in our debased British currency, is over £2.

Hawaii's Plants: Malihini and Kamaaina

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OTTO DEGENER, Botanist
University of Hawaii, 1925-27

By HAROLD HOSTETLER
Advertiser Environment Writer

Glance at the large photograph accompanying this article, and what do you see? A picturesque Maui mountainside covered with lush native forests, unspoiled by man's arrival?

Wrong. Picturesque and forested it may be, but unspoiled and unaffected by man it is not. The story of that picture is the story of the Hawaiian environment. Like the ecology of any area, Hawaii's environment is not static but dynamic —ever changing. The changes are not always for the better.

That Maui photograph represents more than 320 acres of hillside forestland. The only vegetation in it that can be considered native Hawaiian is an almost invisible lone koa tree in right center and the grove of light-colored kukui-nut trees in the upper background. They represent perhaps five per cent of the vegetation.

THAT SAME MAUI hillside probably was once part of a large ohia-koa forest, according to Robert E. Nelson, director of the Institute of Pacific Islands Forestry of the U.S. Forest Service.

Today the whole foreground is taken up by the useless false staghorn fern, which is more of a fire hazard than anything else because it becomes dry beneath its top blanket of green. The plant is not known to be native, although it might be. In any case it is a pest.

Much of the remainder of the hillside is occupied by bamboo, strawberry guava and rose apple, all of them plants that have been introduced from elsewhere around the world.

In fact, in the last 100 years, more than 800 species of exotic plants have been introduced to Hawaii. Often the introduction was for a good reason, such as for watershed cover or ornamentation, or even for commercial timber purposes, but in many cases the plants got out of hand.

"WHEN YOU STUDY ecosystems," Nelson said, "you learn that plants may be under control in their own native environment. But when you introduce them to a new area, where the balance of nature is not the same, they may get out of control and upset that balance."

Two extreme examples of the growth of exotic plants—one a beneficial one and one destructive—are the kiawe and the fire-tree.

Kiawe is so common to Hawaii today that one might think it native, growing in the dry leeward areas, but it actually was introduced into Hawaii in 1827 from a botanic garden in Paris. The tree is native to Mexico and the Southwestern United States, and its beans are a good cattle feed.

"Kiawe apparently occupies a niche where there had been no native trees," Nelson said. It occupies about 150,000 acres in Hawaii today without seeming to have endangered other plant species.

AT THE OPPOSITE extreme is the firetree (myrica faya) which was brought into Hawaii from the Azores in 1900 as an ornamental tree. It was planted on the Hamakua Coast of the Big Island and has since spread over 40,000 acres on all Islands.

The firetree has no commercial use. It may be nice to

July 25, 1970.

Dear Mr. Ritter:

I believe the following will be of immediate interest to the many colleagues who have been stationed at our Park on the Island of Hawaii:

C'est la GUERRE

During World War II, to prevent the landing of enemy aircraft on the extensive coastal plains situated largely southwest of Hawaii Volcanoes National Park, bulldozers were used to excavate pits and pile up mounds here and there. Now, about a quarter of a Century later, some of these are being mistaken as the remains of ancient Hawaiian cultural practices. To protect ourselves further from invasion mostly miles away from roads, horses and mules were used by the Military to haul barbed wire for the construction of entanglements. These beasts of burden were largely supplied with bales of fodder imported from the U.S. Mainland.

Since the War, the drier areas of Hawaii Volcanoes National Park below about 5,000 feet elevation have been overrun by two nasty, coarse grasses apparently of accidental introduction in such bales. As neither has a distinctive common name, each is here listed for precise, future reference as Andropogon virginicus L., and Schizachyrium condensatum (HBK) Nees. Both grow along the Chain-of-Craters Road for every one to see, ~~they~~ are 2 - 3 feet tall and erect, and end with a broom-like cluster of wind-scattered seeds. The latter grass now practically blankets the Hilina Pali and Kipuka Nene areas, growing among scattered, mature ohia lahua trees and other endemic plants, preventing any of their seeds from germinating so that the scattered groves can maintain ~~themselves~~ themselves as the old plants succumb to the infirmities of age. This grass also encroaches somewhat into the neighboring forest where the almost extinct kokio tree survives, a link between the cotton and perhaps the hibiscus.

Wednesday July 22 a fire broke out about a quarter of a mile south

Danger to Native Hawaiian Flowers

By DR. OTTO DEGENER

As familiarity breeds contempt, the average resident of the Islands thinks little about our native plants. They are nice, to be sure, but so are the introduced kinds. Few of us realize that foreigners, ever since the time of Captain Cook, have been eager to collect plants peculiar to the Hawaiian Islands for study regarding their uses as fibers, foods, dyes, medicines, ornamentals, perfumes and timber. Cook's botanist was David Nelson. Captain Beechey had his naturalists along, the U.S. Exploring Expedition had its naturalists, and during the last hundred years or so botanists from all civilized countries have come to our islands to collect native plants or had resident botanists send them samples for serious study.

Such plants, properly dried and labeled as to collector, place and date of collection and any other facts deemed of interest, mounted on sheets of stiff paper, are preserved in the roof colonels of leading educational institutions, not too differently from books in a library. Thus they are readily available for reference and study.

An example of what is happening to our native Hawaiian flora is shown by a study conducted by Dr. Benjamin C. Stone, Professor of Botany, University of Malaya, Kuala Lumpur. Stone became interested in the fragrant mokihana of Kauai, and its many strongly scented relatives known as alani scattered throughout our archipelago. The group belongs to the Citrus Family and is botanically known as Pelea, a name honoring the fire-goddess Pele.

According to his 200-odd page book, "The Genus Pelea A. Gray" published July 31, 1969, the genus consists of seventy endemic species (kinds). He knows of twenty-seven species from Kauai, twenty-two from Oahu, six from Molokai, four from Lanai, thirteen from Maui, and ten from Hawaii.

The discrepancy in the total of eighty-seven species occurring on the several islands separately when only seventy different species occur in the entire archipelago is due to one and the same species sometimes having been collected on more than one island. It is significant that one of these Pelea species has not been found since 1870; two others, not since 1920; fifteen others, not since 1870; and six others, not since 1910. In summary, of the seventy endemic species twenty-nine, or over 40%, apparently have been exterminated in less than 200 years!

The plight of mokihana and alani is not unique. Similar "death throes" apply to other groups of Hawaiian plants studied by American and foreign botanists. As a result, of all our fifty States of the Union, the State of Hawaii is outstanding for wrecking at incredible speed a God-given Paradise. Biologists throughout the world — and there are many, many thousand — know the main causes for such a holocaust. These are the introduction by accident and design of foreign plants, the introduction of foreign insects and plant diseases, and the bull-dozing of vast areas of native vegetation to replace it with common foreign ornamentals so that about every tourist hotel in our islands is not at all in a Hawaiian setting but rather apes hotels in Bermuda, California and Florida.

Some of this damage to the native biota is of course justifiable as man's population explosion competes for room to exist. But the most damaging and least excusable act of "civilized" man's vandalism is the introduction of antelope, goat, mouflon, sheep, black-tailed deer and in particular axis deer from India to the delicate Hawaiian Island vegetation that never had developed a partial resistance to poison or spines.

We have become the laughing stock of the scientific world and are so dull — nay, lolo — in our island isolation that the fewest of us yet realize it. If we are not wrecking the Islands for tourism, we are recklessly speading a "germ-pool" of specialized organisms into oblivion that have the ability to produce fragrant ethereal oils (mokihana) and other substances far too complex and or costly for the wisest chemist to duplicate. How many of these extinct plants had potential value in medicine and industry?

To introduce trampling and browsing cats, deer, cow contemplated, to the Island of Hawaii (after noting their harmful effects on Lanai, Molokai, New Zealand and elsewhere) would be just one more example of our continued folly for tourists and scientists the World over to condemn. When will the State of Hawaii grow up biologically and not year after year open still another Pandora's box of irreversible blunders?

Thirty-eight years after Columbus discovered the New World, an Italian named Girolamo Fracastoro published in Verona a most remarkable poem. It had to do with a French shepherd who suffered a strange disease. There is no record it was ever mentioned in print earlier. It became identified with that shepherd himself, who was called Syphilus. The allegory is spelled a little differently. Syphilis. Hon. Adv. 3/3/76

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planted in the Kona region. Today most of Hawaii oranges are grown there, although demand is not great.

The flesh is juicy, yellow orange, generally mild.

Today, the waves crash, as they have always done, into Waimea Bay.

Today, people sun themselves on the sand, or climb up on a big rock sticking out of the bay. Hon. Star-Bull

But yesterday a sailing ship was anchored in the bay, the Daedalus, a store ship belonging to Capt. George Vancouver's squadron. 11/21/70

And on the cliffs above the bay, there was a temple dedicated to the war god Ku; on the altar of this temple Lt. Hergest, commander of the Daedalus, and two of his men are believed to have been sacrificed to Ku.

The four acres including and surrounding the ancient temple comprise the Puu o Mahuka State Monument; it was dedicated as a national historical landmark on July 29, 1969.

THE ROCK walls that the visitor sees comprise the largest heiau complex on Oahu, a heiau bigger than Kamehameha's famous heiau, Puukohala, at Kawaihae, on the Big Island.

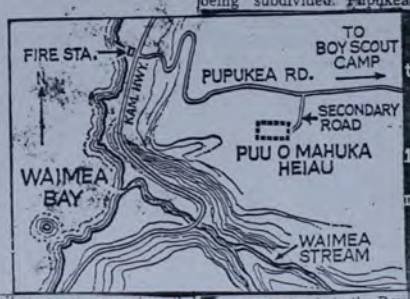
The rock walls are all that the visitor sees now, as the images, stockades, towers, houses and altars that were once part of the temple have long been gone. Most of such appurtenances to heiaus were destroyed in 1819 on order of Liholiho, Kamehameha II, the year before the first missionaries came to Hawaii.

A trip to Puu o Mahuka involves a drive either through the cane and pineapple fields of central Oahu and by the picturesque seaside community of Haleiwa, or else along the lush shores of Windward Oahu to Kahuku, Sunset Beach and Pupukea.

In either case, the traveler turns up Pupukea Road, at the sign that says "Camp Pupukea—B.S.A." and zigzags up the road to a side road leading to Puu o Mahuka.

IF THERE'S TIME, an exploration of the Pupukea uplands is well worth while. The fertile fields here were once well known for avocado orchards and growing of sweet corn.

Today these fields are being subdivided. Pupukea Road itself leads to the Boy Scout camp, in a grove of eucalyptus trees. Most parts of the area afford scenic views of the ocean, shimmering in the sun, of sloping fields and green gullies and



Coleus, Africa
Croton, America
Cryptomeria & other evergreens, Asia, etc.
Cycas, Asia, Australia
Dombeya, Africa
Elderberry (Sambucus), America, Asia, Europe
Eucalyptus, Australia
Fuchsia, America
Gingers, Asia
Gold- & Silverferns, America
Guava of several kinds, America
Hebe, Australia
Holly (Ilex), Northern Hemisphere
Hoya (Waxplant), South Seas
Hydrangea, America, Asia
Ixora, Asia
Jacaranda, America
Jasmine, Asia, etc.
Lagerstroemia (Crapemyrtle), Asia, Australia
Lantana, America
Lycium, Worldwide
Magnolia, America
Melaleuca (Paperbark), Australia
Melastome, Tibouchina, America, etc.
Mirabilis (Four-o'clock), America
Mockorange, Asia
Monstera, America
Norfolk Island Pine, South Seas
Oleander, Asia, Europe
Orchids of many kinds, Tropics
Orchidtree & other Bauhinia, America, Asia
Palms, many introduced kinds, Tropics
Panax, America, Asia
Passionflowers, America
Pedilanthus (Slipperflower), America
Penciltree, Africa
Philodendron of many kinds, America
Plumbago, Africa
Poinsettia, America
Pomegranate, Asia
Pride-of-Barbados, America
Pride-of-India, Asia
Pyracantha (Firethorn), Asia
Seagrape (Coccoloba), America
Showertrees of various kinds (Cassia, etc.)
Rhododendron, America, Asia
Sisal, America
Solandra, America
Sterculia, America, Asia
Strelitzia (Bird-of-Paradise), Africa
Thibleberry, Asia; Blackberry, America, Asia
Tamarind, Asia
Tamarix, Asia, Europe
Terminalia, Asia
Thevetia (Yellow oleander), America
Vitex, Asia, Europe

If we are to make the scenic strips along the Volcano Road properly

Mongoose with Wings

SIR: I read Oct. 19 that our small Hawaiian ba
opeapea, has been included in the list of rare and e
dangered species of animals.

In 1927, toward dusk, I frequently saw one or tw
apeapea flying not far from the church at Waiohin
Kau. They seem not to be there now.

During the past years, I have seen the barn owl va
iously from Waipio, Kohala to Manuka near t
Kona-Kau Districts boundary. These birds during t
day were roosting in trees and, in their camouflag
resembled decayed branches.

In a critical article Oct. 11, 1958 to the Editor, w
read that "In this morning's newspaper Bob Kraus
column mentions that 'a shipment of barn owls a
rived in Honolulu yesterday from San Diego. They
being released in Waipio Valley on the Big Island f
rodent control.' "

The critic then writes that "When tenderloin stea
soars in price beyond the writer's means he does no
gracefully lie down and starve to death. He simpl
hunts for a substitute, even if less palatable, such a
chuck or stew meat. Similarly, after the barn owl
have reduced the rats on the Island of Hawaii, the
will search for a substitute rather than starve. The
will follow in the footsteps of the mongoose and writ
er. As plants are indigestible to them and most insect
too small, they can survive only by feeding on bull
frogs in Waipio; nene goslings; pheasant, chukar an
quail chicks; young poultry; and other introduced an
native birds. I know of no record of barn owls fishing
In the writer's opinion, the barn owl—practically
mongoose with wings—should be destroyed or donate
to the Honolulu zoo, anything but liberated."

The decline of the native bat and the increase of th
introduced barn owl are hardly coincidental.

OTTO DEGENE

of tropical agriculture after analyzing soil and plant tissue samples found an apparent lack of the nutrient calcium.

Pursuing the lead Higaki consulted with Roger Watanabe, a UH soils specialist for suggestions on chemical compounds to use.

Among those tried, calcium carbonate, a local product applied at the rate of 2,000 to 3,000 lbs. per acre seems most effective. Results so far look promising as there evidently has been a reduction in the number of deformed flowers.

Other chemical compounds under test include calcium silicate, calcium nitrate, calcium sulfate and calcium chloride. The tests are continuing and the researchers hope soon to provide more information leading to the eventual elimination of the problem.

For more information on anthurium culture in Hawaii write for a free copy of University of Hawaii Cooperative Extension Service circular 420.

Scientists generally agree that the Polynesian race of which the Hawaiian is a part, had it origin in southeastern Asia many thousands of years ago.

The theory is advanced that the people were forced gradually to the coasts, and that finally the pressure of stronger tribes from the interior compelled them to migrate to the Pacific islands in search of new homes.

There is some question as to the exact route or routes followed in finally reaching the Hawaiian archipelago, but the most popular theory is that the Hawaiians came by way of Tahiti.

It is clearly evident that there was considerable intercourse between the peoples of the two groups for the legends are replete with stories of long voyages north and south.

Another theory is that the island of Guam was first reached and settled, before migrations continued eastward to Hawaii.

OLD LEGEND SIGNIFICANT

An ancient Polynesian legend relates that the Hawaiian islands were discovered by Hawaiiloa, a famous Polynesian fisherman and navigator.

The name Hawaiiloa is mentioned in the centuries-old genealogical table, which includes the names of Wakea and Papa, said to be the progenitors of the Hawaiian race, and of whom Kamehameha the Great, first king of Hawaii, is said to be a descendant.

Some authorities estimate the first settlement of Hawaii occurred in about the year 500 A.D., while others believe that the early migrations to Hawaii took place before the Christian era.

There is very little other than legend to indicate that there existed an aboriginal people in the archipelago when the Hawaiians arrived.

The legend of the menehunes, a tiny race of people like elves, might mean that a smaller race of people once existed in the islands, but chances are that the legend is purely mythical.

LARGE SKELETONS FOUND

Better evidence is that at one time there was a much larger people inhabiting the islands.

Strongly pointing to this theory is the discovery some years ago of skeletons of men which measured over 7 feet long. The skeletons were found beneath many layers of lava and coral, indicating they had been preserved for thousands of years.

Hawaii's real ancient history so far as authentic records are concerned, begins about the end of the 13th century, when a warlike and ambitious chieftain named Kalaunuihua, of the island of Hawaii, set out to conquer the entire group.

He invaded Maui, where he met and defeated the army of the leading chief. He then proceeded to Molokai where he was again victorious, and on the island of Oahu he defeated and captured the chief of the districts of Ewa and Waianae.

Elated by his continued success, he sailed with his outrigger fleet to the island of Kauai, where he met crushing defeat at the hands of Kukona, the ruling chief.

Of the period from 1450 A. D. to the era of Kamehameha was a time of strife and war on all the islands with their deteriorating consequences of anarchy, depopulation, social and intellectual degradation, and oppression.

JAPANESE BELIEVED WRECKED

Tradition relates that about the end of the 13th century a vassel arrived at Kahului on the island of Maui.

Here and there as you travel Hawaii Island highways and byways especially in Ka'u and Kona, you will see groves or individual straight trunked trees with short branches rather thinly clad in ornamental fern like leaves that show their silvery under sides when the wind blows. Otherwise the leaves are a warm green blending rather than contrasting with the golden flowers which appear in flat horizontal racemes among them.

This kind of tree is an immigrant from Australia. It is the silk-oak or silver-oak (Grevillea robusta), hailed as an important windbreak and fuel producing tree and moderately useful as a timber tree. The generic name honors Charles Greville, one of the founders of the Royal Horticultural Society. The tree was introduced into Hawaii around the beginning of this century. Formerly it was hailed as one of the twelve best trees for reforesting denuded lands in Hawaii, especially drier rockier places.

Today many people are not sure they like the efficient way the tree is doing its expected job. It does not stay exactly where man wants it to stay. It's rounded flattened seeds grow their own "flying saucer" membranes which the wind catches and carries the seeds to places where they are not wanted.

Cattlemen call it a "weed" and either destroy it or tolerate it and wish it wasn't there in the pastures utilizing soil and water which forage plants might use. Cattle do not eat the leaves; nor should they for the harsh leathery leaves contain poisonous compounds.

The silk-oak is not related to true oaks. It is much more closely related to the delicious macadamia nut tree. Both are members of the Proteaceae, a primitive flowering plant family whose members are much simpler in structure than most other flowering plants. Once common in both hemispheres, the members of this family are now native to Australia, Africa and part of South America.

Silk oak and silver oak are timber names given the tree because its light colored wood superficially resembles oak wood yet has a satiny or silver sheen when polished that oak does not have. It is a beautiful wood useful for making furniture and for wood carving as it is easy to work. It does not have the weight, strength or durability of true oak wood.

Today it is used as a windbreak tree in many parts of the tropics as well as Hawaii. Its fibers are tough enough to keep the tree erect and its foliage thin enough to let the wind sift through instead of blocking it. A row of these trees tossing and bowing in the wind is a beautiful sight.

The flowers of the silk-oak are odd little things without petals. The stamens, pistil and colored calyx make up the individual flower, but many are crowded together to make the flat horizontal inflorescence. A tree in bloom is attractive in a soft subdued way.

The seed capsules which follow are unique, too. Each is shaped like a music note and is brown at first, turning black with age and lingering long on the tree.

H.S.B.

As you drive through Hawaii, you are likely to find, depending on the time of the year, avocados, breadfruit, bananas, coconuts, figs, grapes, guava, lemons, Hawaiian oranges, papayas, passion fruit, mangoes and other kinds of fruit—enough to make your mouth water.

Most of them have been introduced from all parts of the world by Western explorers and traders who stopped in Hawaii on their way across the Pacific. A few—like breadfruit,

LETTERS

Nat. Park Courier 81

A plan of vital importance to the biota of Hawaii Volcanoes National Park is now being weighed by the Hawaii State Fish & Game Division. Mr. Michio Takata, its head, is in favor of importing axis deer, originally from India, to the Island of Hawaii for the sake of hunters. Mr. Ronald Walker, acting chief of the Wildlife Branch, according to the November 23 Star-Bulletin & Advertiser, states that "The sporting goods expenditures that will accompany deer hunters will add greatly to the economy of the Big Island." Director Jack Throp of the Honolulu Zoo, however, maintains that "the deer which feed on grass, weeds, young plants and trees will destroy the Island's native forests and vegetation and upset ranching." He maintains that such an introduction would be a "criminal act." Dec. 1959

Hawaii Volcanoes National Park owes its outstanding interest not only to its volcanic activity but to its native vegetation, most of which is endemic and found no other place on earth. As no deer-proof fences can be constructed to save the area from deer—remember the deer browse line in Bryce Canyon and other areas!—hunter pressure would only drive deer for asylum into the park. Few hunters would bother any longer to hunt feral goats and pigs with deer available, letting these pests increase relatively undisturbed. The presence of deer on the Island of Hawaii would multiply greatly the problems and expenses of the National Park Service in the State of Hawaii.

It might be well for Alumni readers of the Courier to write His Excellency, Governor Robert Burns, Honolulu, Hawaii, about their experience with deer and their views regarding the proposed introduction of deer to Hugh Island covered with delicate vegetation that has never developed an immunity to herbivorous mammals and that lacks native animals that would keep the normal increase of introduced deer in check.

Dr. Otto Degener
Hawaii National Park 192

parts of the U. S.

Pokeweed. This plant is also known as inkberry, red nightshade, scoke, and by several other names. This weed grows four to nine feet high, has greenish-white flowers and red, purple and black berries. It is found along roads and fences throughout the United States and Canada. Roots and seeds of the berries are particularly poisonous. Heavy ingestion causes vomiting, nausea, gastroenteritis, and occasionally death.

Castor bean plant. The beans or seeds of this quick-growing garden plant, from which castor oil comes, are exceedingly dangerous. Children, attracted by these black, gray or brown beans, have died after chewing or swallowing a single seed. They have caused adults to be hospitalized. Severe abdominal pain, vomiting, nausea, circulatory failure or narcosis occurs a few hours after eating.

Oleander. This ornamental evergreen shrub usually is planted in parks, lawns and as "headlight screens" on highways in the South and West. It is extremely toxic. One or two leaves ingested can kill an adult, while children have died from chewing its stems, leaves and flowers. Meat prepared over oleander branches can be fatal. All parts of this shrub are dangerous when eaten.

Foxglove. In early summer of its second year, the foxglove blooms with rows of white-lavender or purple, bell-shaped flowers on its tall stalk; until then, it is identified by clusters of leaves in rosette patterns. A favorite in gardens, the foxglove can grow wild in woodlands and along shady roadsides. This plant is the source of digitalis, a medicine which strengthens the beat of a weakened heart if taken in small doses. The leaves and seeds of the foxglove contain the digitalis compound and are poisonous. Nausea, dizziness and vomiting occur a few hours after the plant parts have been eaten. If a large amount is consumed, overstimulation of heart muscles takes place and the heart stops.

Rhubarb. In addition, caution should be taken when preparing dishes from rhubarb plants. Although the stalk is nontoxic, rhubarb leaf blades are poisonous, and cooking may not reduce their potency. If eaten, the leaves still damage the kidneys.

If poisoning from any of these plants is suspected, immediately contact your physician. Attempt to induce vomiting if the victim is conscious. However, vomiting should not be induced if a person is unconscious or convulsing, advises the U.S. Public Health Service. If a physician is not available, call the nearest hospital or Poison Control Center. To aid in prescribing proper treatment, know the name of the plant or be able to describe it readily.

Mrs. St. John, 76, dies here

Mrs. Elizabeth St. John, 76, of 2365 Hoomaha Way, died yesterday of heart failure.

She was the former Elizabeth Chandler, a member of the Alfred Dupont Chandler family which moved to Hawaii in 1929.

Funeral services will be at 5 p.m. Friday in Atherton Chapel of Central Union Church. Burial will be in the family plot in Dover, Mass.

SHE WAS OAHU'S mother of the year in 1957 and was a past president of the Parent-Teachers Association of Hawaii and the Honolulu chapter of the American Association of University Women.

She was the wife of Dr. Harold St. John, a professor emeritus of botany at the University of Hawaii.

She was a graduate of Radcliffe College and the family asks that, in lieu of flowers, contributions be made to the Radcliffe scholarship fund.

She also is survived by sons, Charles E. and Robert P. St. John; daughters, Mrs. Mary Zemach and Mrs. Martha Martin; brothers, Henry P. and Alfred D. Chandler, Jr., and 11 grandchildren.

Sixty Years Ago—1897

The ostriches did not go to Maui. The Mauna Loa reported such rough weather in the channel that the Inter-Island Co. had pity on the poor birds going to Kaunapali to have their tail feathers, coaxed. It has not yet been decided when they will be sent, but probably Jack Dowsett and J. E. Walker will indefinitely postpone their transportation to Maui.

Société des Océanistes
Musée de l'Homme. Paris XVI^e

Justificatif.

(Extrait du JOURNAL DE LA SOCIETE DES OCEANISTES
Tome IV. N^o 4. Décembre 1948, pp.199-200).

HISTOIRE NATURELLE

DEGENER, O. **Flora Hawaiiensis or The new illustrated Flora of the Hawaiian islands.** S. l., 1946, 1 vol.

Dès 1888, avait paru l'excellente *Flora of the Hawaiian islands* (*) de W. Hillebrand, publiée après la mort de l'auteur, mais sans illustrations, sauf un frontispice donnant une vue de forêt.

Dans la *Flora Hawaiiensis or The new illustrated Flora of the Hawaiian islands*, commencée en 1933 et dont les quatre livres ont été réunis en 1946, O. Degener a figuré, parfois en couleurs, environ 400 espèces, chacune étant accompagnée de clefs de détermination avec description complète, indication des synonymes et d'une répartition géographique détaillée. La publication de cet important travail a été quelque peu particulière : en effet, à intervalles irréguliers, ont paru, sans ordre, des fascicules dits centuries de feuilles isolées, destinées à être classées ultérieurement suivant l'ordre numérique indiqué pour les familles, et suivant l'ordre alphabétique pour les genus dans les familles et les espèces dans les genus.

Le livre I^er s'est ainsi trouvé terminé en 1933, le livre II en 1935, le livre III en 1938 et le livre IV en 1940. En tête, suivant la pagination allant de A à K, prenait place toute une série de chapitres, en particulier des considérations sur l'origine et les relations de la flore hawaïenne et sur l'histoire de sa connaissance, tandis que ce n'est qu'avec l'achèvement du travail que les 344 feuilles purent être mises dans leur ordre normal. L'ouvrage se termine par un index (paginé X), des cartes (paginées Y) et, enfin, l'avertissement (paginé Z).

Malheureusement, le 1^er avril 1946, la presque totalité de l'édition fut détruite dans une tempête, au sud des Aléoutiennes. Aussi fut-on obligé d'en faire cette deuxième édition, pratiquement fac-similé de la première, mais où les six premiers chapitres, et surtout les clefs des familles, n'ont pas été reproduits. Par contre, l'ouvrage débute par : « *A botanist leaves Hawaii* », forme nouvelle que l'auteur, revenu au New York botanical Garden, donna au *Torrey botanical Club*, le 18 avril 1945.

A. GUILLAUMIN.

One of the most interesting of our dried legumes, the vegetable family that includes beans, peas and lentils, is the chickpea. Chickpeas are comparatively unknown in this country although they are a very old vegetable, having been grown in India many centuries ago. The Asian, European and Middle East countries have all absorbed chickpeas into their cuisines—in India they are known as "gram," in Italy as "ceci," in Spain as "garbanzos," in France as "pois chiches" and in the Middle East, with variations in spelling, as "hummus." At one time they were widely used in Turkey to feed horses, and probably camels, too, for they were called "camel corn" there. Chickpeas do make a very nourishing horse feed and I well remember traveling around the countryside of Portugal one day in a carriage and watching the driver, who was very fond of his horses, feeding them vast quantities of chickpeas.

Hon. Star-Bull 11/2/71

IF YOU DON'T KNOW A CHICKPEA when you see one, it is hard and round with a deep yellow color. Dried chickpeas take a good bit of cooking. Soak them overnight and then put them in water to cover with a garlic clove, a sprig of thyme and some salt and bring them to a boil. Then, for ½ pound chickpeas, add ½ teaspoon bicarbonate of soda, which helps to tenderize them, and cook them until they are very soft, which can take anywhere from 2 to 5 hours.

Sometimes you can find them in Italian markets presoaked and ready to cook, but if you don't want to go to all the bother of soaking and cooking them, canned chickpeas work extraordinarily well. Drain them, wash them and drain again before using. In some Middle Eastern and specialty food shops you may find roasted salted chickpeas in bottles or jars. They are crisp and salty, with a surprisingly pleasant flavor, and make an unusual cocktail nibble.

I like to use chickpeas because there are so many interesting things you can do with them. They can be heated and served, in equal proportions, with spaghetti, sauced with your favorite tomato sauce or simply butter and cheese, a great change from the usual pasta because of the two different tastes and textures. They are also good in vegetable soups, or in salads. For a salad, cook them with plenty of seasoning, drain, cool and mix with a little finely chopped onion, a touch of minced garlic, olive oil, vinegar, salt and pepper. The texture, crunchy but soft, is delicious with cold meats like corned beef and pastrami or with sausages.

CHICKPEAS COMBINE WELL with canned beans in what I call a ranch salad. Mix equal amounts of chickpeas, kidney beans and the white beans called cannellini with sliced onion, garlic dressing and a little finely cut celery.

Chickpea Puree

If you're bored with the usual starchy vegetables, try a chickpea puree. For 8 servings, puree 3 cans drained and washed chickpeas in a blender or food mill or push them through a sieve with a wooden spoon. Combine the puree with a good knob of butter, a tiny bit of finely chopped garlic, salt and pepper to taste and enough heavy cream to give a consistency like mashed potatoes. Heat through and serve with pork, lamb, turkey or duck.

Even more delicious is a cold chickpea puree which is treated in rather a different way, a Middle East specialty called Hummis bi Tahini. Tahini is a sesame seed paste with a wonderful nutty flavor and you can buy it in jars or cans in Middle East stores, specialty food shops, health-food stores and even in some supermarket chains on the East Coast.

Hummus bi Tahini

Use ½ pound dried chickpeas, cooked according to previous directions and cooled, or 2 cans chickpeas, drained, washed and drained again. Put them through a food mill or sieve or whirl them in the blender with the juice of 2 lemons and possibly ½ cup water, until you have a creamy paste. Finely crush 2 or 3 garlic cloves with 1 teaspoon salt and pound into the chickpeas thoroughly. Then gradually mix in ½ cup tahini and, if you have not already added lemon juice, the juice of 2 to 3 lemons—the paste should have a good strong lemony flavor and it should be about as thick as mayonnaise.

If too thick, thin with a little water. Let it rest for 20 to 30 minutes, then taste to see if you have enough garlic, salt and lemon juice. If you like spicy mixtures, add a good slug of Tabasco as well.

To serve, put the hummus bi tahini in a bowl, pour a little olive oil on top and sprinkle with a fair quantity of paprika and chopped parsley, or just use the oil and a dusting of finely chopped fresh mint. Serve as a cocktail dip or a first course with breadsticks, Melba toast, raw vegetables or heated pita, that marvelous flat Middle East bread so many stores seem to carry these days. Tear the bread in bite-size pieces for dipping in the paste.

I think once you discover how versatile, tasty and economical chickpeas are they will become as much a favorite with you as they are with me.

November 13, 1970

Hon Star-Bull

1895: The beginnings of one of Hawaii's major industries rated a mere two lines in the shipping column of a Honolulu newspaper this day in 1895. Mentioned incidently in an item about the shipping of 2,620 bags of sugar to a West Coast refinery and passenger reservations for two was the information that the ship was carrying 486 cases of canned pineapple.

This was Hawaii's first venture into canned pineapple as an export. The 486 cases held two dozen standard size cans each and were shipped by Hawaiian Fruit and Packing Co. to San Francisco. The pineapples had been canned at the Emmeluth-Kidwell plantation at Waikele.

Real impetus came in 1899, when Bryon Clark and W. B. Thomas, cultivaters of cayenne plants on their large tracts of land near Wahiawa, built two canneries to handle fruit that ripened too fast. By 1903, shipments of preserved pineapples to California had jumped to 250 tons.

According to a 1905 PARADISE OF THE PACIFIC story, the first large-scale pineapple plantation was established by Pearl City Fruit Co. at Ewa because the recently completed Oahu Railroad furnished easy transportation of crops to Honolulu.

The article concluded that, by and large, extensive pineapple plantations gave better returns per acre than sugar.

"All of the dates we have from South Point were done during the early part of the radiocarbon technique and we have had a problem of contamination," Sinoto said.

He said he collected obsidian samples during work at Waiahukini the past summer and plans to have them analyzed for a cross-check on the radiocarbon dates.

Riley observed, regarding the Halawa Valley-South Point settlement question, that pioneering Polynesians most likely would have chosen a place to settle similar to their homeland.

AND SINOTO pointed out, "Halawa Valley is one of the most striking places — like the Marquesas. I was surprised."

South Point, on the other hand, is a desolate, forbidding area.

But the archaeologists, are bewildered by the fishhooks and elongated dwellings found in Halawa Valley. They don't seem to fit into the puzzle of Hawaii's Polynesian origins.

Sinoto said the hooks are neither the early notched style which typifies South Point, nor a later, nobbed design. They are somewhere in between.

Also, only about 25 fishhooks were detected along Halawa's coast — not a substantial number for a fishing area.

AS FOR THE round-ended houses, Sinoto said these are characteristic of Tahiti, Samoa and Tonga. "But we do not know how old they are in those areas, so we can't say how the Halawa houses re-

seum anthropology department chairman, participated in the discussion.

Kirch started exploring Halawa Valley while he was attending Punahou some years ago. But no extensive archaeological survey was carried out until last year.

The three graduate students divided the valley into specific interests, with Kirch investigating the coastal area, Hendren the structural remains and Riley the taro systems.

RILEY SAID the coastal excavations were the most spectacular — turning up A.D. 570 (plus or minus 100 years) for the earliest occupation and A.D. 1200 to 1300 for the termination period.

Up to now, the earliest settlement date established in Hawaii was A.D. 750 at the ancient Hawaiian fishing village of Waiahukini on the Big Island's South Point.

Does this mean, then, that Molokai was inhabited before the Big Island?

The scientists don't know yet. They said perhaps people traveled from Molokai to the Big Island. Or possibly earlier dates are still to be found at South Point.

Sinoto noted that the Halawa Valley dates were determined through obsidian dating, a relatively new technique based on volcanic glass, as well as radiocarbon dating.

THIS WAS the first use of the obsidian method in Hawaii. It was done by Maury Morgenstein of the Hawaii Institute of Geophysics.

Archaeologists haven't been happy with the results of radiocarbon dating, which has been the standard method up to now.

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conducted tours, he repeated his remark to the lady in question. Laughingly she replied that she was not Maori at all, but had come to New Zealand with her Hawaiian parents as a child! Polynesians have been isolated in the Hawaiian Archipelago evidently a sufficient length of time to have acquired distinctive traits not found in other peoples. The reviewer believes a second edition of Dr. Tomich's "Mammals in Hawaii" must include Homo sapiens forma hawaiiensis Deg., as the fourth endemic mammal.

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Editor's Note. The reviewer, Dr. Degener, RR1, Box 89, Waialua, Hi., 96791, is author of "Naturalists's South Pacific Expedition: Fiji" which was published in 1949. With Fiji now in the news because of its recent independence, this book may deserve renewed attention. Copies may be purchased from Dr. Degener, $5.00.

New Publication

Horticulture Digest, Newsletter of the Dept. of Horticulture, U. H. No. 1 issued Oct. 1970. Quarterly.

Recent Book

Flowering Vines of the World. Edwin A. Menninger and 50 collaborators. 410 pages, 580 photographs. Heathside Press, Inc., New York, 1970. $25.00.

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A checklist of palms in the Harold L. Lyon Arboretum. Harold L. Lyon Arboretum, University of Hawaii, 24 pp.

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Carlquist, Sherwin 1969
Wood anatomy of Lobelioideae (Campanulaceae). Biotropica 1:47-72.

Clements, H. F. 1970
Crop logging of sugar cane: nitrogen and potassium requirements and interactions using two varieties. Hawaii Agr. Expt. Sta., Tech. Bull. 81, 48 pp.

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Two new mosses from Hawaii", J. Hattori Bot. Lab. 31:293-296.

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Flora Hawaiiensis versus Flora Hawaiiana. Taxon 18(5):571-572.

Degener, Otto and Isa. 1969
Review of HAVAJIN KASVISTOSTA JA KASVILLISUUDESTA. Reprinted from Phytologia XIX (1).

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Review of HAVAJIN KASVISTOSTA JA KASVILLISUUDESTA. Reprinted from Phytologia XIX (1).

SANDALWOOD time in Hawaii was a sad time. In the period from about 1790 through 1840 when Hawaii exported shipload after shipload of sandalwood these things happened —

—Hawaii's forests on all islands were almost depleted of one of Hawaii's native trees.

—Hawaii's commoners, who did the work of finding, cutting and hauling sandalwood for the chiefs, received little benefit.

—Hawaii's commoners spent so much time collecting sandalwood that gardens and fishing were neglected and starvation threatened many times during the period of 50 years.

—Hawaii's high chiefs, who sold the sandalwood to foreigners, received a lot of useless junk in exchange.

—Hawaii's high chiefs went into deep debt to foreigners.

—Hawaii's sandalwood trade destroyed the mutually beneficial relationship between the high chiefs and the commoners.

—Foreign traders did not always reap the rich rewards they anticipated from the trade.

KING KAMEHAMEHA the Great, from 1790 through his death in 1819, as absolute monarch of the Kingdom of Hawaii he founded, held the royal monopoly on sandalwood.

As long as he ran the show, things were not so bad for the commoners. It was after his death, and the other chiefs were cut in, that troubles came to chiefs and commoners.

It was cash on the line with Kamehameha. Not really "cash" in the form of silver and gold, although he did take some, but Western goods was what Kamehameha wanted.

And as Western goods were landed to go into Kamehameha's storehouses, sandalwood was loaded aboard.

ALL KAMEHAMEHA the Great had to do was send out the orders to fill the ship with sandalwood. With the ship went his personal agent, who told the high chief of whatever island he was dispatched to, to "fill her up."

The island or district high chief did so. It was his duty. It was also the duty of his people, the commoners under the foremanship of the lesser chiefs, to do the work and deliver the cut sandalwood to shipside.

It was Kamehameha the Great who got the goods in exchange. The island high chiefs, the lesser chiefs, and the commoners who did the work, got nothing material in exchange, and did not question the system. It was a new twist on a system used in Hawaii for perhaps a thousand years.

THROUGH THE time of Kamehameha, they received mostly benefits of a spiritual nature, and were glad of it. It was the job of ruling chiefs like Kamehameha to effect beneficial liaison with the major Polynesian gods. Commoners and lesser chiefs supported the ruling chiefs so they could do their main job — that of keeping the gods happy. Everybody benefitted.

Kamehameha obviously had the good will of the gods. They were on his side. They had helped him do something no other high chief had ever done, unite the numerous island chiefdoms into one master kingdom. During his lifetime, Kamehameha the Great held true to his gods. He also held onto the sandalwood monopoly.

ALSO TRUE to his trust of seeing to the welfare of his people, when Kamehameha found that his sanndalwood trade was taking his people away from gardens and sea, and that food was scarce, he immediately gave orders to lay off the sandalwood collection and pay attention to food production.

And in a conservation edict, Kamehameha the Great also put under kapu the sandalwood seedlings and very young trees so that there would be a future supply.

It was the Hawaiian version of "don't kill the goose that lays the golden egg."

So commoners got to eat enough, sufficient sandalwood was still gathered to swell the king's warehouses, and a future supply of sandalwood was assured under the rule of Kamehameha the Great.

But he died in 1819.

ONE OF THE deals that Kamehameha II, Liholiho, sacred son of Kamehameha the Great, made to get his crown and title, was to cut the high chiefs in on the sandalwood trade.

He gave up the royal monopoly to be acknowledged king and his father's rightful heir to the throne.

In 1819, the high chiefs wanted to accumulate Western goods for their own satisfaction. They had seen all the goodies Kamehameha the Great had acquired. They wanted some.

After 1819, there were a number of monopolies. Each high chief controlled land which grew sandalwood. Each high chief also had the organization and the commoners to collect it.

That was when things got nasty and rough on the commoners.

PASSION FRUIT RECIPES

entered

in the

HAWAIIAN PASSION FRUIT PRODUCTS SHOW

sponsored by the

MAUI CHAMBER OF COMMERCE

October 15, 1955

Wailuku Hotel

Compiled by
and distributed as compliments of

MAUI CHAMBER OF COMMERCE
Wailuku, Maui

Hapuu in Kohala

SIR: A public hearing was held Friday August 13 by the Dept. Land & Natural Resources in Hilo regarding whether almost 3,000 acres of hapuu tree fern forest in the Kilauea Forest Reserve, Island of Hawaii, should be "harvested." Conservationists claimed that an area of unsurpassed scientific value would be lost forever by such commercial exploitation, not to mention the loss of a fogdrip watershed forest that sponges the passing clouds dry of moisture.

Orchidologists did not refute the claims of the conservationists, but countered that their industry depended on a constant supply of fibrous hapuu tree trunks.

Huge areas of cane land in Hawaii's Kohala District, exposed to strong, moist trades, are threatened with imminent abandonment. We have visited the area and have noted tree ferns growing healthily in and about the gulches where out of reach of cane planters. They certainly had grown on intervening land before its planting to cane.

To save the communities of Kohala threatened with a ghost town future, we suggest that the State with its array of experts consider replacing cane with hapuu plantings to satisfy an ever growing flower industry. While the hapuu is growing to marketable size, anthuriums and other crops could be grown within the nursery.

The growing of hapuu in Kohala would be the beginning of a useful industry and would help prevent the urge to exploit a National Treasure located in the Kilauea Forest Reserve, a treasure as unique as the redwood forests of the Mainland.

OTTO & ISA DEGENER

Conservationists To Inspect Koa Forest

The flora and fauna committee of the Hawaii Island Chapter, Conservation Council For Hawaii has scheduled a field trip Saturday to inspect the koa forest areas around Keanakolu. The area is near the Douglas Monument at the "Doctor's Pit" at Kaluakauka where the native forest is said to be infested by exotic poka vine growth. The State Division of Forestry will supervise the field trip.

His Royal greeters and their "Kahunas" or priests alone could associate with Cook. Hence it is described or reported a time or two that people prostrated themselves as Cook approached. This was a common practice for people who were not royalty could not even look upon Kings, Queens, and their families, all considered to be "Alii."

Cook himself perhaps did not understand the workings of the Hawaiian Monarchial System, a system much stronger and sterner than the Monarchy of Medeival England.

While some of Cook's officers reported communications were good, it is almost a certainty that part of Cook's later troubles that led to his death was because of the inability of his people to communicate clearly with the Hawaiians of Kaawaloa and the adjoining areas of Kealakekua and Keei.

The Hawaiians knew how to live from the sea and the earth. They practiced stern moral codes that far exceeded standards known at the time of European and Angle Saxon civilizations. Theirs regulated and classed way of life, with still a great degree of freedom and choice to do as they pleased, but only with regard to their station in life or the occupational pursuit they followed.

Hawaiians could weave, could make cloth from bark and vegetable products. They handled minerals such as were native to Hawaii in the very careful way they handled their crop raising and their fishing.

Their canoe markers and their stone masons were artisans as much then as are those craftsmen today. Hawaiians could support themselves from the sea and the soil in such a manner that they were regarded as an almost pure and healthy race, entirely self sustaining, and free of scourges and disease that existed in other south sea areas and islands.

What did Cook bring to this restricted and guarded group of islands? Cook brought a heritage and an awareness to the people of Hawaii that had been predicted and whispered by their Kahunas or priests, a big world full of strange and mysterious ways, someplace across the big ocean.

It gave them a sense of realizing that they belonged to a larger world than just the Hawaiian Island archipelago. It brought them into contact with ways that were unheard of or never even imagined. It began to teach and instruct and improvise upon tradition and ways that had been considered inviolate and true.

It opened natural doors of curosity and inquisitiveness.

Cook also brought regard and feeling with him in behalf of the nation he represented, and despite the fact that he was killed due to a misunderstanding, which he as much as any Hawaiian group was responsible for.

The unfortunate demise of Cook brought emotion and feeling and an awareness to the Hawaiian people that they should continue to welcome and greet any other visitors from afar, but also to defend and honor their National Entity.

The Cook impact began the pulling away of the people from the old ways and the ways of their fathers to the new ways that seemed a bit easier and simple to understand.

It was to renew and refresh itself each time another expedition like Vancouver's arrival in 1792. Vancouver brought cattle and horses with him and as each succeeding vessel arrived, it brought more of the new, and took away much of the old, and continued the tragic toll that killed so many Hawaiians in so short a time.

European, Asiatic, or Western diseases that were unadvertently introduced by the new visitors ran through the Hawaiians like a "sickening wave." They knew no immunity to the common cold, to measles, to the mumps, to the pox and to the "pake sickness." In a few short years, the Hawaiian population dwindled from well over half a million to less than 100,000.

Then what do we say of Cook in final tribute?

Who can predict what would have happened to Hawaii had not Cook opened the door when he did? Who can say with frankness that Cook could envision a Hawaii of today, ranking in stature and greatness with entire Nations, let alone Hawaii being just a state and a unique state of the USA because of its isolated position in the way of life that is ours to enjoy in Hawaii today?

Could Cook know that less than 200 years after the "door" was opened, Hawaii would exist as a monument of Man's Humanity to Fellow Man?

Could Cook or anyone of the late 1700's predict that over a period of years the strength and the patience of the Hawaiian would continue to weld and to meld with the influx of people of the world moving into and become part of Hawaii?

exploration of the Pacific

Many of us in Hawaii are guilty of the habit of thinking of Capt. James Cook as the first and last in Pacific exploration. Indeed, as a scientist, navigator and man, he towered above other explorers of his century. As to the century that followed, we are inclined to be unaware of navigators other than those whose vessels touched our shores—Vancouver, Byron, Kotzabue, LePerouse and others.

This period has now been documented in a handsome volume titled "Beyond the Capes" (Cape Horn and the Cape of Good Hope, that is), written by Dr. Ernest S. Dodge, well known in Honolulu. The book is subtitled "Pacific Exploration from Capt. Cook to the 'Challenger' 1776 to 1877." The text is amply illustrated with refreshingly unfamiliar reproductions, many of them from the Peabody Museum of Salem, of which Dodge is director.

It has been Dodge's joy, as well as his professional obligation, he says, to read records of Pacific navigation. So immersed is he in his subject that we find such phrases as, "This was a time of noble men and resolute endeavor." Was it unconsciously or by design that he echoed the names of Cook's "Resolution" and "Endeavour"?

TO THE GENERAL reader, the chart at the end of the book showing 19th century exploration will be illuminating. To the scholars and serious students who wish to go into the subject in greater depth, the exhaustive bibliography will be indispensable.

Vancouver, with some of his officers and Kamehameha, visited "first of all the fatal spot where Capt. Cook so unexpectedly, and so unfortunately for the world, yielded up his valuable life. This melancholy, and ever to be deplored event, the natives are at much pains exactly to represent, to produce reasons for its taking place, and to show that it fulfilled the prophesies of the priests, who had foretold this sad catastrophe."

But in a sense, Cook lived on in the person of Vancouver and others who had served under him and who had become acquainted with the thoroughness of his investigations and the meticulousness of his records—Portlock, Dixon, Calvett and Bligh.

DODGE simply summarized the well-known tragedy of the "Bounty." "The object of all former voyages to the South Seas," wrote Bligh, "has been the advancement of science and the increase of knowledge. This voyage may be reckoned the first, the intention of which has been to derive benefit from those distant discoveries."

He was referring to transporting breadfruit plants as a source of food for labor on West Indies plantations. Dodge describes Bligh's second, and this time successful, attempt to do so. It is ironical, though, that after all the hardships and loss of life involved, the West Indians should turn out to prefer their own plantains to breadfruit.

We learn that LaPerouse aided the American revolutionists by destroying two British forts in Hudson's Bay, and that he had an unusually healthy crew for those days of rampant scurvy, even mak-

Excerpt from 1/4/63 letter by Degeners to Dr. W.C. Steere: December 10 Mrs. Degener and I represented the G Io at the services for our friend the botanical explorer and Oriental linguist D J.F. Rock in Oahu Cemetery, Honolulu. The service consisted of a short biography of the deceased followed by the placing of two ti (Cordyline) leaves, one with broken kukui nuts, on the urn by a Hawaiian kahuna or priest, a retired forester an intimate friend." This kahuna is our friend Tom McGuire

Decline Appointment

Editor, Hawaii Tribune-Herald: 6/27/71

If I were not wanted by a large number of people, whether as guest or as appointee, I certainly would not care to cheapen myself by forcing myself on an uncongenial crowd nor by accepting the appointment. If I had been appointed, perhaps hastily by a friend whose popularity might wane by his unfortunate choice, I would graciously decline the appointment. Whether a person would follow through with such a decision would not depend on the color of his skin, but rather whether it is thick or thin.

Haole Reader of the Kamehameha School Fiasco.

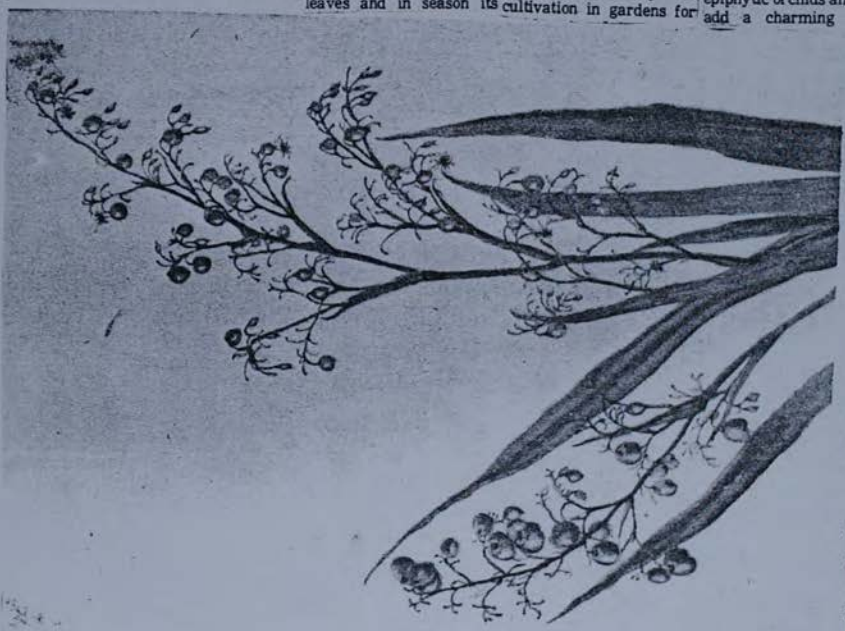
DR. OTTO DEGENER
Volcano, Hawaii

June 23, 1971.

more like a typical wildflower in size and shape. It is largely epiphytic. Look for it in the forks of tree branches, on old stumps or logs or on tree ferns. It grows on these things but takes no nourishment from their living tissues. It grows in accumulated humus on the ground, too, but wild pigs root it up and destroy it there.

The chief beauties of this lilly lie in its long silvery leaves and in season its quantities of bright orange berries which liven the native woodlands in fall and early winter. The painiu is worthy of cultivation in gardens for the beauty of its foliage whether or not it produces the orange berries.

It should be grown like epiphytic orchids and could add a charming foliage



Uki-uki, a native lilly, has dainty blue wildflowers with a rosette of narrow green leaves and a slender flowerstalk bearing small blue flowers. Hawaiians used it in ancient times to make a blue dye for tapa cloth.

From the above acacia records for Lanai, we believe two taxa were native to the island. Critical study of the Munro sheets deposited in the Bishop Museum's Marie C. Neal Herbarium and in the "British Museum, Sydney, Australia" (letter dated Oct. 14, 1950) may solve the mystery as to the precise ones.

Mr. George Richmond, State Forester who planned monographing the endemic Acaciae, came to be our house guest. We showed him "our" colony of A. koaia s.l., of which we had collected ample material September 5 for wide distribution to museums. We likewise showed him every other Hawaiian acacia stand we had noted during our residence. We at that time explained that the original geographic distribution of our few native species, many varieties and multitudinous forms must be based almost solely on old specimens deposited in herbaria of the World and on living trees forty or more years old. Younger trees on Kauai or Lanai, for instance, could have come from Maui or from Oahu. The reason for this apparent phenomenon, ~~though simple~~, we here record for the ultimate monographer of the group to ponder:

The various islands had their various resident foresters, most of them considering the koa a very desirable tree for reforestation. For the sake of efficiency during the latter part of the '20s or early '30s, Charles Sheldon Judd (1881-1939), who used to shoot flowering branches from the highest trees for the kane writer to gather for his herbarium, placed advertisements in the local newspapers, offering to pay for koa seeds. Countless barefoot urchins on probably every inhabited island, except Niihau, had a lark picnicking in their nearest koa groves to collect these lucrative seeds. Reaching the Territorial Board of Agriculture and Forestry office on Keeaumoku and King Streets, Honolulu, all such seeds, no matter their source, were tossed into a common bin. Whenever any one on an "outside" island wrote for koa seed, the proper amount of such randomly mixed seed was removed with a scoup from the bin to send to him.

Should a forty year old Oahu koa be found growing along the windward coast of East Maui, don't blame some Pseudonestor for flying it there. Blame the postman and the good ship Kilauea or one of his sisters.

Ohia Infection

SIR: We should like to alert residents of the "Outside Islands" to a danger to which they are exposed by a devastating infection that has dug deep into the forests of the Island of Hawaii.

We never realized the importance of this plague, probably caused by a root rot, until we drove from Hilo to Kona over the Saddle Road. As we looked ahead in driving, we noted the skyline punctuated with dead, erect trees. All these skeletons were ohia-lehua (Metrosideros), the tree that produces elegant pompons of scarlet flowers upon which so many of our native, nectar-feeding birds depend for food. Whether this virulent organism, perhaps an Amillaria, gained entrance to our Island by means of some infected plant smuggled from abroad by a garden lover or in a clod of dirt on the shoe of some unsuspecting tourist, is anyone's guess.

This infection, so far as we have noted, apparently extends from the vicinity of the Saddle Road to both sides of the Belt Road in the Glenwood-Volcano area.

The ohia-lehua, the host for this disease that now threatens our archipelago, is famous for germinating on hapuu or treefern trunks (Cibotium). As the seedling grows, its roots enter the tree-fern "trunk" and embrace it more and more, causing the fern's eventual death by "hunger" and strangulation. Hence larger hapuu trunks may be riddled with live, dying and dead ohia-lehua roots.

If we are not to bid "Goodbye to you, Green Maui, Molokai, Oahu and Kauai," we must prevent the spread of this plant plague. The only way we know of controlling this infection NOW is to slap a stringent embargo on the export from the Island of Hawaii of all soil, plants of the myrtle family to which the ohia-lehua belongs, and of all hapuu logs or fragments unless these have been steam-sterilized or fumigated with a fungicide. Hapuu, apparently, is the ideal vector.

When next you drive between Hilo and Kona, take the Saddle Road for a change, and see the devastation for yourself. Please, then, suggest to our legislators how better to save our few remaining native forests and the native animals depending upon them.

We personally know of no method of checking this holocaust except that of imposing an embargo for the present emergency until someone can devise a superior method of control.

Drs. OTTO and ISA DEGENER

BEUG, Hans-Jürgen: Leitfaden der Pollenbestimmung für Mitteleuropa und angrenzende Gebiete. Lieferung 1 — Gr. -8°, XIV + 63 Seiten mit 17 Textabbildungen und 8 Tafeln, broschiert — Gustav FISCHER, Stuttgart — 1961 — DM 22,50.

Wenn man von älteren, den Ansprüchen von heute bei weitem nicht mehr genügenden Ansätzen absieht, gibt es gerade für Mitteleuropa keinen auf vergleichend-morphologischer Grundlage aufgebauten Pollenatlas, der zugleich ein zuverlässiges Bestimmen sogar bis in den infraspezifischen Bereich ermöglichte. Der erfahrene, weltbekannte Forscher FIRBAS (Göttingen) hat nun eine Gruppe von Mitarbeitern für ein solches, mit modernsten Mitteln ausgearbeitetes Werk eingesetzt, dessen erste Lieferung vorliegt. Auf ein lehrreiches Vorwort und eine knappe, die Methodik und die zahlreichen Fachausdrücke erläuternde Einleitung folgt unmittelbar der im allgemeinen in Schlüsselform gehaltene Text. An umfangreichere Pollenklassen ist ein Schrifttumsnachweis angefügt. Die Abbildungen, zumeist Originale, vor allem die auf 8 Tafeln vereinigten, vorzüglichen Lichtbilder erleichtern aufs zweckmäßigste das Verständnis des kritischen Textes, der in dieser ersten Lieferung hauptsächlich Gymnospermen und Monokotylen betrifft. Der Leitfaden ist ein unentbehrliches Hilfsmittel für jeden auf Palynologie angewiesenen Zweig der Naturwissenschaften.

WIDDER

BRANDENBURGER, Wolfgang: Vademecum zum Sammeln parasitischer Pilze mit besonderer Berücksichtigung der in Mitteleuropa vorkommenden *Uredinales, Ustilaginales, Erysiphales, Taphrinales* und *Peronosporales* — 8°, 186 Seiten, Glanzkart. — Eugen ULMER, Stuttgart — 1963 — DM 10,80.

Wer sich an das noch immer für eine vorläufige Übersicht recht brauchbare Hilfsbuch von LINDAU gewöhnt hat, das allerdings schon längst zu den antiquarischen Seltenheiten gehört, wird sich im ersten Augenblick in diesem eigenartigen Vademecum nicht leicht zurechtfinden. Wenn man das handliche Taschenbuch jedoch genauer durchsieht, lernt man das völlig neue Darbieten des Stoffes als überaus zweckmäßig und übersichtlich schätzen. Das Buch ist für Jeden bestimmt, der über die Anfänge der Pilzkunde hinaus ist und sich in dem überaus vielseitigen Bereich der parasitischen Pilze rasch über bekannte Möglichkeiten unterrichten will, um dann ohne Umwege im richtigen Handbuch nachschlagen zu können. Einzelne Druckfehler wie *Carhtamus, Gladiosus* wird der Benutzer leicht verbessern können. *Cronartium gentianeum* ist offenbar mit *C. asclepiadeum* vereinigt worden. Einige, wenn auch ältere Handbücher hätten vielleicht noch in den kaum 1½ Seiten umfassenden Quellennachweis aufgenommen werden können. Anzuerkennen ist vor allem die glückliche Hand des Verf. in der Auswahl und in dem durchaus modernen Gruppieren des umfangreichen, schwer zu überblickenden Stoffes sowie die saubere, dem Handgebrauch bestens angepaßte Ausstattung durch den Verlag.

WIDDER

DEGENER, Otto & DEGENER, Isa: Flora Hawaiiensis. (The New-Illustrated Flora of the Hawaiian Islands). Book 6: 1957—1963. — 8°, 276 Einzelblätter mit 174 Abbildungen, Leinen-Sammelband mit Durchsteckschrauben — Book Store, Bishop Museum, Honolulu, Hawaii, USA. — 1963 — $ 10,00.

Kauai," we must prevent the spread of this plant plague. The only way we know of controlling this infection NOW is to slap a stringent embargo on the export from the Island of Hawaii of all soil, plants of the myrtle family to which the ohia-lehua belongs, and of all hapuu logs or fragments unless these have been steam-sterilized or fumigated with a fungicide. Hapuu, apparently, is the ideal vector.

When next you drive between Hilo and Kona, take the Saddle Road for a change, and see the devastation for yourself. Please, then, suggest to our legislators how better to save our few remaining native forests and the native animals depending upon them.

We personally know of no method of checking this holocaust except that of imposing an embargo for the present emergency until someone can devise a superior method of control.

Drs. OTTO and ISA DEGENER

jungle flat to the ground.

"A primeval jungle of National Park standard that at the same time acted as a valuable catchment basin for the city of Hilo and for the lowland towns in Puna had been ruined for no purpose at all."

Degener pointed out damage of the land would threaten water supply to vital Big Island areas.

"We should learn a lesson from drying Kamuela, after cattle and horses destroyed much of the fog-drip forest there," he wrote.

The Conservation Council also plans to keep an eye on an application by C. Brewer and Co. to develop Punaluu Beach area in Ka'u. C. Brewer has applied for a permit to build

million pounds. Processing of the 1971 crop is nearly complete and Kudo predicts only two million pounds will have been processed.

And the 800 member farmers of the cooperative will receive less for their coffee as a consequence.

"WHEN THE coffee production decreases like this," Kudo explained, "the processing costs increase and the farmer doesn't get as much for his coffee."

Whether two or three million pounds of coffee are produced, the mill must still be operated, the manager added.

The cooperative, which handles around 90 per cent of all coffee grown in Kona, has an agreement with the

remains on the trees because of the lack of farm labor, Kudo said. He added that many farmers are cutting back their acreages.

If it weren't for the gourmet market the Kona coffee farmers would be in even worse financial shape, Kudo said.

"THE GOURMET market is the only thing that is keeping Kona coffee going now. If it weren't for that arrangement the farmers would be getting only about $6 per bag," he added.

On the market Kona coffee carries a high price tag. Many shops price it at about $2 per pound—if they can get it. Kudo said it is impossible to meet the demand for the product.

Hapuu Opposition Builds

Opposition to proposed harvesting of hapuu in Kilauea Forest Reserve is building on the Big Island with at least two expressions against the plan being revealed Thursday.

The executive board of Hawaii Island Chapter of the Conservation Council has decided to oppose the Bishop Estate proposal.

At a meeting Wednesday night, the board determined hapuu would not regenerate in the area, according to William Reich, president of the council.

Reich said wild pigs would go through the 3,000-acre area and eat the young hapuu before the plants matured. He noted the forest reserve was one of the last natural areas on the Big Island.

"It is the natural habitat for native birds which are near extinction," he said.

See HAPUU, Page 8

The council will present its position at a State Department of Land and Natural Resources hearing in Hilo Aug. 13. At that time the Department will consider an application by Bishop Estate to harvest hapuu in Kilauea Forest Reserve.

Drs. Otto and Isa Degener, botanists and property owners at Volcano, also are expected to oppose harvesting.

In letters to State and Federal legislators, conservation and science groups and newspapers, Degener wrote; "Shortly after we had purchased our patch of mountain paradise, bulldozers invaded the region, crushing thousands of acres of thick

A section of Kilauea Forest Reserve was bulldozed during hapuu harvesting in July crushing much of the native flora and fauna. The photograph was taken near land owned by Dr. Otto Degener of Volcano. Bishop Estate has applied for a permit to harvest hapuu on 3,000 acres of Kilauea Forest Reserve.

ponds in the area.

Reich said the council wants assurances C. Brewer intends to maintain public access to the black sand beach.

A field trip to Punaluu is planned by the Council. Anyone wishing to visit the area should meet at the home of Dr. Alfred Tong, 104 Alae St., Saturday at 8 a.m.

CAPTAIN COOK, Hawaii —Struggling to stay alive, the Kona coffee industry suffered a serious setback in 1971. Production was down a third over the previous year.

Takeshi Kudo, manager of the Sunset Coffee Co-op here, said the annual coffee crop used to average three

Superior Tea & Coffee Co. of Chicago.

The agreement gives the Kona coffee farmers a higher price for their commodity than they can realize on the world market. Most Kona coffee is marketed as a gourmet item.

EACH KONA coffee farmer realizes about $8 per 100-pound bag of unprocessed coffee, according to Kudo.

"The farmer pays $4 to $4.50 per bag to get the coffee picked," Kudo said. "Some are paying $5 a bag and yet they are still not able to get anyone to harvest the crop."

A lot of coffee "cherry" remains on the trees because of the lack of farm labor, Kudo said. He added that many farmers are cutting back their acreages.

If it weren't for the gourmet market the Kona coffee farmers would be in even worse financial shape, Kudo said.

"THE GOURMET market is the only thing that is keeping Kona coffee going now. If it weren't for that arrangement the farmers would be getting only about $6 per bag," he added.

On the market Kona coffee carries a high price tag. Many shops price it at about $2 per pound—if they can get it. Kudo said it is impossible to meet the demand for the product.

In past years Kona coffee has been popular on the European market. It still is, but only about 5 per cent of the 1971 crop was shipped to Europe.

"And we have no coffee to sell to Japan," Kudo said. "The people there are still very much interested in getting Kona coffee though."

SUNSET COFFEE Co-op also handles macadamia nuts. Kona farmers have about 1,000 acres planted with macadamia nut trees.

Many farmers, discouraged with coffee, have planted the nut trees, but Kudo said there have not been too

Hon SB 8/14/71

Conservationists Oppose Big Isle Hapuu Harvest

HILO — Conservationists were uncompromising yesterday in their opposition to an application by Bishop Estate to allow harvesting of hapuu in 2,956 acres of the Kilauea Forest Reserve.

In a public hearing conducted by the Board of Land and Natural Resources, they were not satisfied with an offer by the estate to limit the area to be harvested to 200 acres with a review of forest conditions after five years.

Hawaii County officials and a dozen organizations and individuals spoke out against allowing any logging at all in the mile-wide forest belt just outside Hawaii Volcanoes National Park.

They argued it is a unique example of the Hawaii rain forest that should be preserved intact on its own scientific merit.

To disturb it, even by "selective" harvesting, they said, would destroy rare species of plants and the habitat of rare and endangered species of birds.

It would allow the invasion of exotic plants, cause erosion of a delicate soil structure and destroy a watershed that may eventually be vital to the Big Island, they said.

ROBERT CHASE, representing Life of the Land, said the hapuu forest should be regarded as a parallel to the redwood forests of the Mainland.

Several organizations suggested a land exchange with the State to preserve the area intact while allowing Bishop Estate to fulfill its hapuu license commitments on land already disturbed.

Norman Carlson, speaking for the estate, said the license was granted by the trustees in 1966 to Niu Nursery of Honolulu. However, by the time the nursery had opened up the area with a road, the Legislature had passed a bill requiring a public hearing before allowing logging in the forest reserves.

Carlson disputed several points of the conservationists' testimony.

HE SAID THE forest is already decadent, with widespread damage by wild pigs, and selective harvesting could revitalize it.

He said in his observation wild birds shun the dense tree fern growth in favor of the more open koa and ohia forest at higher elevations and thus harvesting would encourage bird life.

He proposed opening the area to hunters to kill off the wild pig population.

In offering to limit the area of harvest to 200 acres, he said little is known of the capability to regenerate and the growth rates of hapuu, koa and ohia, and this would provide an opportunity for such a study.

Otherwise, the only persons speaking in favor of the application were Sidney Goo, vice president of Niu Nursery, and two major Honolulu orchid growers, William Kirch and Masatoshi Miyamoto.

Goo said his firm has already invested $18,000 in an access road.

He pledged that only selective cutting of mature trees would be done, and only light equipment would be used so as not to damage other trees.

Hon SB 8/12/71 HAPUU

Harvest of Tree Fern Protested by Audubons

Directors of the Hawaii Audubon Society have expressed opposition to the Bishop Estate's request to harvest hapuu (tree fern) in the Kilauea Forest Service on the Big Island.

A public hearing on the estate's application will be held by the Board of Land and Natural Resources at 1 p.m. tomorrow in the State Office Building, Hilo.

The estate has applied for a commercial use permit to harvest hapuu on 3,000 acres of conservation district land in the forest reserve.

"THE 5,000-ACRE Kilauea Forest Reserve is zoned conservation district land because of its quality as a prime native forest," according to William P. Mull, Audubon Society vice president.

"To disturb 60 per cent of it (i.e., the 3,000 acres in the Bishop Estate application) would be virtually to destroy it.

"There is no question that commercial hapuu harvesting disturbs a forest, no matter how much care and selectivity is exercised in the operation . . .

"Certainly the extensive, already-disturbed forests in non-Conservation status east of the Kilauea Forest Reserve can serve as the source of the hapuu raw products required by Niu Nursery."

Hon Adv Aug 25 '71

re: hapuu treeferns

A public hearing was held (8/13) in Hilo regarding whether almost 3,000 acres of hapuu treefern forest in the Kilauea Forest Reserve, Island of Hawaii, should be "harvested." Conservationists claimed that an area of unsurpassed scientific value would be lost forever by such commercial exploitation, not to mention the loss of a fogdrip watershed forest that sponges the passing clouds dry of moisture.

Orchidologists did not refute the claims of the conservationists, but countered that their industry depended on a constant supply of fibrous hapuu tree trunks.

To save the communities of Kohala threatened with a ghost town future, we suggest that the State with its array of experts consider replacing cane with hapuu plantings to satisfy an ever growing flower industry. While the hapuu is growing to marketable size, anthuriums and other crops could be grown within the nursery.

The growing of hapuu in Kohala would be the beginning of a useful industry and would help prevent the urge to exploit a national treasure located in the Kilauea Forest Reserve, a treasure as unique as the redwood forests of the Mainland.

OTTO AND ISA DEGENER

THIS DAY IN OUR HAWAIIAN HERITAGE

By Russ and Peg Apple

December 7, 1971

1907: Establishment of a College of Agriculture and Mechanic Arts was assured when Willis T. Pope of the Honolulu Normal School science department was named acting dean on this day in 1907. Graduate of Kansas Agricultural College and a five year resident of the Territory of Hawaii, Pope was well qualified for the position.

The college was slated to open in February, 1908. Temporary quarters were set up on the high school property opposite Thomas Square and negotiations were under way to purchase 30 acres of farm land on th outskirts of College Hills in Manoa Valley to be used as a permanent site for experimental farming and administrative buildings. With Oahu College, the Mid-Pacific Institute and Honolulu Normal School well established in Honolulu, educators and the business community believed that the time was not far off when Hawaii could begin to plan for a university.

Kansas Agricultural College was the model for the new school. At the start, the curriculum consisted of agriculture, nature study, physics, chemistry, botany and gardening, with advanced courses in tropical agriculture to be added later.

According to an editorial, the college was opening at a propitious time. Agriculture was making tremendous technological advances and homesteads were being developed all over the country. In order to make small farms pay, scientific indormation was needed. This was to be provided by Hawaii's College of Agriculture and Mechanic Arts.

From Hilo, a news release reported that a "glow at night and smoke by day was seen on the Great Mountain, Mauna Loa." Fire was also observed issuing from Kilauea crater the same day. This front page story concluded with a description of Hilo's weather. "The weather is warm and fine for baseball."

Autumn is coming, How do we know? The golden plovers are coming back from their northern nesting grounds. You can hear their half whistled, half spoken calls early in the morning and again in late afternoon and on into the evening, especially on moonlit nights.

Plovers are social birds. Their calls are given in part to keep contact with other members of a flock. Usually if one plover calls while in flight, others will answer whether or not they join him. The haunting, somewhat musical calls have a quality that can make even wingless humans want to join the birds and go to distant places.

The first plovers to return in late summer are said to be adult males. Females remain longer in the north with their growing young ones and wait until they, too, are able to take the long flight south. Male plovers leave all care of the young to the females, so are not tied to domestic duties and are free to leave when they feel like it.

Ornithologists still are studying the phenomena of habitual migration. The reasons, apparently, are complex. Some changes take place in the hormone and enzyme balance in the birds' bodies as they come to the end of the breeding cycle. These in turn seem to help trigger the migrating instinct.

Changes in the number of daylight hours may be another. Though this cannot have much influence on the timing of the spring migration to the north from Hawaii. Our differences in hours of sunlight come gradually and never are very pronounced.

Plovers do not fly south until they have accumulated a lot of fat in their bodies to "fuel" their trip. They neither eat nor drink during the long non-stop journey over open ocean. The fat is broken down in their bodies during flight, releasing energy and water.

Ornithologists have put captured plover on both calm seas and rougher ones to see if the birds could take off from the water. None did so. The birds had to be re-captured. They flew easily enough then when tossed into the air. The plover did swim on float. None in this experiment drowned.

How fast can a plover fly? Prior to World War II, the writer with a friend clocked plovers flying along straight roadways in Ka'u and Hamakua. Sixty miles per hour was as fast as my friend dared to drive her car on the roads we had in those days. The Plovers kept flying ahead of us, lighting on the road some distance in front, snatching a few insects, and flying on farther ahead as we approached. I am sure they could have gone faster if they wished.

Hawaiians in olden days caught plover with nooses set like traps in places where plovers were apt to gather. These nooses were made of human hair. Since hair was believed to have "mana" or spirit power, they were carefully retrieved so that no one else would get hold of them and so they would not lose their mana through long exposure.

Food In Old Hawaii

The captured birds were killed, cleaned, and a hot smoothly rounded stone placed inside the body cavity and the bird placed in a cooler portion of an imu or buried in hot ashes to cook yet not become overcooked.

Plovers were on the game bird list in former years. Their fast dwindling numbers and their value to agriculture as insect eaters, together with the persistent efforts of conservationists all combined to have them covered by the Migratory Bird Act which prohibits the shooting of many migratory species of birds.

Today the plover population in Hawaii seems to be holding its own. Some years we have more than other years, but the reasons for this lie outside our state.

Greet the plovers which come to your lawn as friends. Do not use poison sprays on laws. We don't want the birds to suffer from poisoned food. The birds plus other insect predators usually keep your lawn insect-scarce if not wholly insect-free.

EXIT EFFLUENT—Considered a pest in some areas, the water hyacinth is proving effective for "treating" effluent from animal waste systems.

Considered a pest on the Mainland but used locally in fish ponds and aquaria, the water hyacinth has been found to effectively "treat" effluent from animal waste systems.

The glossy-leaved, purple-flowered plant quickly carpets the water surface and gobbles nitrogen and phosphorous from the effluent to support its own rapid growth and releases oxygen, which appears to help break down organic matter.

In some tests, water hyacinth has lowered nitrogen, phosphorus and organic levels to the point that the liquid could safely be discharged into streams and used for irrigation without contaminating the ground water.

It is estimated that water hyacinth removes nitrogen at the rate of 500 pounds per plant-covered acre of water per year. Add the phosphorus takeup and organic matter breakdown and it's easy to see that the plants earn their space.

The plants also use a great amount of water in plant processes thus doubling the rate of evaporation. They shade the surface so that algae growth is eliminated or greatly reduced.

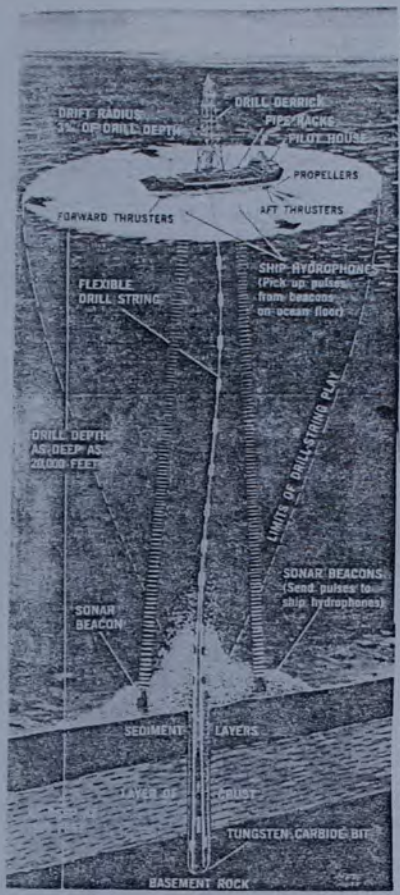
Water hyacinths do well at levels of 100 ppm nitrogen but find higher concentration difficult.

Your comments and suggestions are welcome and should be addressed to Garden Editor, Hawaii Tribune-Herald, Hilo, Hawaii, 96720.

HAWAII BOTANIST TO EXPLORE PEAK BY HELICOPTER

HONOLULU, Feb. (Reuters)—Otto Degener, Hawaii botanist, will flower-picking by helicopt on the isolated top of 40 foot Namolokama Peak, plateau surrounded by clif so sheer that there is record that man has eve reached it.

"It's an island in the air Degener told reporters her "I have no idea wh plants and flowers I'll fin Because of the height an isolation, vegetation shou be entirely different fro the countryside about th plateau."



Sonar, computer operate propulsion units to keep drilling ship exactly on station.

ocean plate is creeping slowly westward and meets and "dives under" the Australian plate. The very deep trench is created as the ocean bed thrusts under and downward.

One of the puzzling aspects of the geology of this part of the world is the area west of the trench — between it and Australia.

THEORETICALLY this area should be former continental crust because it is on the continental side of the trench, although it is now mostly ocean bottom.

Instead of being clearly identifiable as continental crust it has some aspects of both continental and oceanic crust.

So this puzzling ocean bottom will be drilled, particularly in an area known as the Lord Howe Rise, an underseas plateau running in a southerly direction from the Coral Sea off the east coast of Australia.

THIS SMALL area — even in that mixed-up region — is an anomaly. One theory is that the rise might have been a place where the earth's crust rifted, with molten material pushing up and forcing the crust away horizontally. If so, it has been inactive for millions of years.

But if it was a spreading center long ago, it might explain the mechanism by which New Zealand's islands were rotated and pushed away from Australia. When this separation took place is not known, but it is generally agreed New Zealand was once a part of the subcontinent.

It has been speculated that the rock deep under the Lord Howe Rise might be very old — more than 250 million years. If the Glomar Challenger brings up rock that old, it would mean — according to the best guess of theorists — that New Zealand separated from Australia while both were still attached to Antarctica.

WHILE THIS would do no harm to the plate-tectonics theory, it would provide stimulating data concerning the age and geological history of the major features of the Southwest Pacific.

Dr. Robert E. Burns, director of the National Oceanic and Atmospheric Administration program of the University of Washington, is co-chief scientist with Andrews.

Several other U.H. scientists have participated in Glomar Challenger drilling expeditions including Dr. George H. Sutton, professor and associate director of the Hawaii Institute of Geophysics. He was co-chief scientist during deep sea drilling investigations between Hawaii and Tahiti in 1969.

ANDREWS WAS a member of the scientific team of the Glomar Challenger during a previous expedition in the Atlantic, and was with the University team aboard the Kana Keoki during site surveys for the Challenger's current drilling expedition.

The Kana Keoki is now en route to Tahiti and will head for South America to work with the International Decade of Ocean Exploration in cooperation with South American research teams and the NOAA group from the University of Oregon.

The Deep Sea Drilling Project is managed by Scripps Institution of Oceanography of the University of California, San Diego, under contract to the National Science Foundation.

BUTCH, THE GUINEA PIG BEAR

Editor The Advertiser:

When catastrophe hit our islands Dec. 7 some years ago, I added my modest mite to the war effort by being the first to publish, in the newspaper, brief illustrated articles about possible subsistance foods growing wild in gardens, waste places and forests of Hawaii Nei. Such work for the various theaters of war was later vigorously sponsored by the different branches of our Armed Services, resulting in manuals for survival written by leading experts in the field. Such manuals, however, are still far from perfect and complete.

Bears are omnivorous and so are we. The fact that Butch, the feral bear, can survive in the Koolaus these many months without raiding a refrigerator or a vegetable patch shows us that we, too, in dire need, could do so. His knowledge, gained empirically by trial and error, aided by a keen sense of smell and perhaps taste, is valuable and should not be ignored. Instead, in panic, of shooting Butch on sight, our Armed Services should adopt him as their ideal "guinea pig" to help them discover which of our wild plants are wholesome to eat in case of enemy destruction of our food supply. To be sure, Butch probably relishes a few grubs now and then, a protein diet repulsive to civilized man. But as the supply of such animal food in our mountains is extremely meager, we are reasonably certain Butch's vigorous state of health is due to his vegetable fare.

The older Hawaiians and local botanists can list a few mushrooms, such as the **pepeau**; and a few ferns, such as the treefern, as fit for food. They can list as edible a few wild berries and fruits, as of the **lama**; some wild leaves, as of the **milo**; some wild roots, as of the **ti**. Such a list is very scanty and incomplete. Butch, I am sure, knows many more plants; furthermore, all are edible in the raw state. We, able to cook some of Butch's coarser food discoveries, may find them still more nourishing and palatable after a treatment Butch cannot give them.

Perhaps tracking down to capture or kill elusive Butch, who would not harm man, woman or child unless foolishly wounded or cornered by one of them, is not the proper handling of a unique opportunity. This ideal tester of Hawaii's emergency food plants should be observed in the open to see what plants he eats and what plants he avoids. Perhaps even the less attractive but rather reliable technique of analyzing his **kukai**, a method used by countless scientists and game wardens throughout the world, might be employed.

In short, Butch of the Koolaus may lead us to knowledge valuable in saving human life in case of emergency.

Dec. 8

DR. OTTO DEGENER
Waialua, Oahu

MUSSAENDA

TABEBUIA IMPETIGINOSA

know they are the only two.

If you know of another we would be pleased to hear about it. Unfortunately stem cuttings of this tree do not root easily so it will not be easily propagated like the Mussaenda.

We will watch it carefully to see if it produces any seed.

January 3

1865: Early in the reign of King Kamehameha III, leprosy was known to exist in the Kingdom of Hawaii. In an 1863 report by the medical director of the Queen's Hospital, Dr. William Hillebrand called attention to the importance of controlling the "Mai Pake." He proposed isolation of infected persons as a "humane measure." On January 3, 1865, "An Act to Prevent the Spread of Leprosy" was approved by King Kamehameha V.

On the island of Molokai, a peninsula separated from the rest of the island by an almost vertical pali, was acquired by the board of health. This peninsula was believed to have sufficient water and land fertile enough to grow an adequate food supply for the residents. But many of the afflicted were not capable of tilling the soil or otherwise caring for their needs. Relatives who accompanied them to the colony did what little they could to ease the suffering. No housing was furnished. No doctor was provided. No hospital was built. No schools or recreational facilities were planned. Medicines were unavailable. Law enforcement personnel were not hired. By 1866, more than 600 persons had been sent to the settlement.

About two miles west of Honolulu, at Kalihi-kai, a receiving hospital was established for diagnosis and treatment of leprosy. Here, all those suspected of harboring the disease were detained until they were pronounced cured or judged incurable and transferred to Molokai.

No one was immune from the insidious disease. Commoners, royalty and foreigners alike were infected and confined. Decades passed before more humane methods of dealing with leprosy were developed.

Ohia Infection

SIR: We should like to alert residents of the "Outside Islands" to a danger to which they are exposed by a devastating infection that has dug deep into the forests of the Island of Hawaii.

We never realized the importance of this plague, probably caused by a root rot, until we drove from Hilo to Kona over the Saddle Road. As we looked ahead in driving, we noted the skyline punctuated with dead, erect trees. All these skeletons were ohia-lehua (Metrosideros), the tree that produces elegant pompons of scarlet flowers upon which so many of our native, nectar-feeding birds depend for food. Whether this virulent organism, perhaps an Amillaria, gained entrance to our Island by means of some infected plant smuggled from abroad by a garden lover or in a clod of dirt on the shoe of some unsuspecting tourist, is anyone's guess.

This infection, so far as we have noted, apparently extends from the vicinity of the Saddle Road to both sides of the Belt Road in the Glenwood-Volcano area.

The ohia-lehua, the host for this disease that now threatens our archipelago, is famous for germinating on hapuu or treefern trunks (Cibotium). As the seedling grows, its roots enter the treefern "trunk" and embrace it more and more, causing the fern's eventual death by "hunger" and strangulation. Hence larger hapuu trunks may be riddled with live, dying and dead ohia-lehua roots.

If we are not to bid "Goodbye to your Green Maui, Molokai, Oahu and

Hawaii's favorite is the vanda orchid, spectacular in color and number of flowers. Blooming three or four times a year, they are unusually successful in Hawaii's warm, moist climate.

The small vandas used to be grown in many of Hilo's back yards, and sold to larger dealers for commercial use. Some may still be seen there.

But many of the Big Island's growers have moved to Puna near the site of Kapoho village, destroyed in 1955 by a lava eruption. Vandas, hardiest of the orchids, will grow in earth or black sand, wherever there is plenty of moisture and sunshine.

Cattleyas, dendrobiums, phalaenopsis (often used in weddings) and other orchid varieties generally require more sheltered places away from wind and sun than does the hardy vanda.

For most varieties of orchids, Hawaii's climate is ideal. The orchid tends to grow and bloom twice as fast here as it does on the Mainland.

Orchids which now populate Hawaii originally came from the forested lower mountain regions of other tropical lands. There, in the wild, most orchids grow on trees.

All of these orchid varieties that have become world favorites can be seen in the gardens and nurseries of Hilo.

Kong's Floraleigh Gardens, 1477 Kalanianaole Ave., is one popular favorite that includes a small waterfall and a grass shack in a landscaped area of lava caves.

The Orchidarium, 524 Manono St., concentrates on orchids. It was organized three years ago by orchid lovers. Judging takes place on the half-acre site each month, with prize-winning varieties from all over the world.

Orchids of Hawaii has an attractive display, and Hirose Nurseries includes a variety of orchids and other flowers along with a good artifact collection at the door.

Luana in Hilo has conducted garden tours which may be arranged by calling.

Kalani Botanical Garden just before Volcano at the 20 mile post, includes a wide variety of orchids.

GROWTH REGULATOR NOTES

White Christmas Bush

In a trial with seedling *Euphorbia leucocephala*, the white Christmas bush, a soil drench of Cycocel at ½ gram per plant was effective in retarding growth to approximately half that of the control 5 weeks later. A spray of Cycocel at 3/10 percent (3000 ppm) was not effective; neither were sprays of 100 and 200 ppm of EL531, although the latter did cause slight retardation of internode elongation. A soil drench of EL531 at 50 mg of the chemical per plant caused the death of all the plants.

A remark from a local weed control specialist set us off on a quest for a retardant for the ground cover, *Wedelia trilobata*, which grows so abundantly in Hawaii. There seem to be several effective materials, but this preliminary report describes only the effect of Maintain CF-125, a morphactin. At 600 ppm in a spray application, Maintain caused the plants to develop shorter internodes, more lateral branches, and a dark-green color. A certain amount of leaf rolling on older foliage was associated with its use, but this would not be noticeable in mass plantings. Be very careful in spraying Maintain, as other plant materials downwind may be more drastically affected. Some of the adverse effects of Maintain are: leaf drop, leaf roll, distorted new growth, and proliferation of lateral branches.

Richard A. Criley
Assistant Horticulturist

Over the years orchids and Hawaii have become nearly synonymous.

From the first orchid plant introduced in 1907, the growing of orchids has spread throughout this mid-Pacific archipelago, but it caught on nowhere so much as in the Big Island. Most of the orchids produced in the 50th state are grown here: hence, one of its names, the Orchid Isle.

When the Mainland visitor thinks of orchids, he often conjures up an image of the big colorful cattleya bloom. Yet there are over 15,000 of this largest family of plants ranging from some that look like weeds or grasses to the large and showy cattleya.

If the earth was made in six days then we are living that sixth day, for the earth is not yet completed, according to the kind of evidence scientists are finding in their probing of the earth's crust.

Continents are known to be moving — drifting toward each other in some areas, and away in others. The newest theory is that the earth's crust is composed of huge plates that move imperceptibly, their edges pushing up mountain ranges and causing earthquakes where they scrape against each other.

But there is one area of the earth that just doesn't seem to fit into this theory, that is the Southwest Pacific. Little is known about the ocean floor east of Australia and south of the Solomon Islands, but what is known doesn't fit into the simple explanations of the plate

FOR THE FIRST ti
the famous deep-sea-drilli
ship Glomar Challenger
enter these waters
spend two months — u
mid January taking c
samples to help solve
mystery of why this ar
is so geologically puzzlin

Dr. James E. Andre
associate professor
oceanography with the H
waii Institute of Geophy
ics, University of Hawaii,
co-chief scientist for the e
pedition.

The U.H. research vess
Kana Keoki, has been in t
area for the past thr
months making detail
surveys of proposed drillin
sites for the Glomar Ch
lenger.

THE SHIP will be drillin
on both sides of the Ton
Trench, one of the deep
places in the world's ocea
with depths exceedin
35,000 feet.

It is here that the Pacif

37

Mokuleia Beach, Waialua, Oahu.
Sept. 1, 1973.

Editor,
The Advertiser.

Dear Sir:

The request by the Hawaii County Council, as printed in the Advertiser August 31, that Hawaii be exempted from a Federal law declaring a moratorium on the killing of whales and porpoises is truly frightening!

The pet-food industry is attempting to reduce the wanton drowning of porpoises during the netting of schools of fish. This interest in the porpoise is perhaps not entirely for the welfare of these intelligent mammals. It is motivated to some extent by reduction in sales of canned tuna for cats by porpoise admirers.

Porpoises and whales playing off shore are an exciting sight for residents and tourists alike. If there are not enough tuna or chicken-of-the-sea available for a few whales and porpoises, I and my family, including two dogs and two cats, plan to avoid all tuna dishes. I shall purchase chicken-of-the-land instead.

I hope Kona Councilman William Kawahare will quickly rescind his ill-considered request before we kamaainas are stigmatized throughout the civilized world as being just a bit uncivilized.

Dr. Otto Degener
Whale-watcher of Mokuleia Beach

Otto Degener

whale, porpoise killing asked

Hon. Adv. 8/31/73

HILO—The Hawaii County Council has asked that Hawaii be exempted from a Federal law declaring a moratorium on the killing of whales and porpoises.

The resolution, introduced by Kona Councilman William Kawahara, said the overabundance of the two marine mammals in Hawaii waters has reduced the tuna catch by the State's commercial and sports fishermen.

save the porpoises

Hon. Adv. 9/7/73

The request by the Hawaii County Council, as printed in the Advertiser (8/31), that Hawaii be exempted from a Federal law declaring a moratorium on the killing of whales and porpoises is truly frightening.

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DR. OTTO DEGENER

Hon. Adv. 9/14/73

ditch system. The problem here is that the sugar companies need the water for their cane. It takes one ton of water to produce one pound of sugar.

CHICAGO (AMA News Features) — Medical marvels come from the darndest places. Star-Bul Adv

Lithium, for example, an effective treatment for mood disorders such as depression, is found in stone (lithos in Greek) and in various minerals and the sea. 9/16/73

Digitalis, a heart stimulant, came from the Foxglove plant.

And now the papaya, of all things, has been plumbed for a substance that has proven effective in treatment of a serious back problem. On a less serious note, the same substance has been found to be just the thing for a sting.

TO BEGIN WITH, it has long been noted that Polynesians wrapped pieces of meat in papaya leaves to make the meat tender. And modern meat "tenderizers" contain the enzyme, chymopapain, which is derived from papaya leaves.

Medical investigators reasoned that the enzyme might also be used to treat an ailment called herniated disk. In this condition, one of the disks which separate spinal vertebrae ruptures and its gelatinous core material protrudes, pressing against nerves and causing severe pain. The condition, commonly called "slipped disk," often is serious enough to warrant surgery.

AS AN ALTERNATIVE to surgery, the investigators wondered if the papaya enzyme could do to disk material what it and the Polynesians together did to a tough steak — soften it and eat it up.

So they tried it and it worked. To date, more than 7,000 patients have been treated with this method — called chemonu-

being often at the whim of tropical storms which are frequent in this latitude. The history of exploration of the Shoals is also delineated.
G. M. Hocking, Auburn, Ala.

BARLOW, B. A. Flora of New South Wales. LVIII. Loranthaceae. - Department of Agriculture of New South Wales, Sydney: 35 pp.; 1971.
A treatment of the family Loranthaceae (excluding the Viscaceae) found in New South Wales (Australia). Twenty seven species in eight genera are described.
P. G. Wilson, Perth

BARLOW, B. A. Flora of New South Wales. LVIII, A. Viscaceae. - Department of Agriculture of New South Wales, Sydney: 8 pp.; 1971.
A further part to the "Flora of New South Wales" (Australia) which formerly appeared under the title of "Contributions from the New South Wales National Herbarium, Flora Series". The family Viscaceae contains in this State the three genera Korthalsella, Viscum, and Notothixos.
P. G. Wilson, Perth

BOOSMA, C. D. Native trees of South Australia. - Wood and Forest Department, Adelaide: 224 pp.; 1972. (G. Follmann, Kassel)

BRODIE, H. J. The Nidulariaceae or bird's nest fungi of the Hawaiian Islands. - Canad. J. Bot. 50: 643-646; 1972.
Die 11 auf Hawaii vorkommenden Arten aus der Familie der Nidulariaceen werden beschrieben, abgebildet und geschlüsselt. Alle Arten sind bis auf die kürzlich beschriebene Art Cyathus crassimurus Brodie aus Hawaii überall in den Tropen verbreitet.
J. Damboldt, Berlin

BRUGGEN, H. W. E. van. Aponogetonaceae. - In: Foundation Flora Malesiana. Flora malesiana. I. Spermatophyta, flowering plants. 7 (1). Wolters-Noordhoff, Publishing Company, Groningen: 6 pp.; 1971.
Four species of Aponogeton in Malesia.
K. U. Kramer, Utrecht

CONNOR, D. J. and CLIFFORD, H. T. The vegetation near Brown Lake, North Stradbroke Island. - Proc. roy. Soc. Queensl. 83 (6): 69-82; 1972.
The distribution of all vascular species present in an area near Brown Lake, Stradbroke Island, has been recorded using a grid of quadrats and the relationships between species analysed using an information-gain statistic. The species groupings thereby detected are discussed in relation to the controlling environmental factors of topography and soil type (lists, maps, profiles).
G. Follmann, Kassel

DEGENER, O. Caveat emptor. - Newslett. Hawaii. bot. Gard. Found. 4 (7): 1-4; 1970.
The plan of establishing a National Park on Hawaii (Hendrix 1970) is criticized. This park would duplicate other volcanic areas with aa, pahoehoe lava, ash, cinders, and clinkers. It would be preferable to preserve the lush jungle areas of Hawaii which stand in need of conservation since they contain many plants which are not found elsewhere and will be lost in the course of time with the attempts at "improvement", commercialization, and pollution going on in the Hawaiian Islands. It is most important that the cloudbelt forests be conserved; these are of little commercial or agricultural value. The plan to build a superhighway is also condemned.
G. M. Hocking, Auburn, Ala.

DEGENER, O. and DEGENER, Isa. Rumex of Hawaii. - Phytologia 21: 139-146; 1971.
On the island of Hawaii, the following Rumex species occur natively: R.

giganteus Ait. var. giganteus; R. giganteus var. nelsonii Deg. et Deg. var. nov.; R. giganteus var. nelsonii f. annectens Deg. et Deg. f. nov.; R. skottsbergii Deg. et Deg. sp. nov. (common on ash and lava flows from about Kilauea and Kilauea Iki craters and beyond; cultivations at Volcano, Hawaii, for several years show important distinctions from R. giganteus). There are also added notes on Rumex on the smaller islands of the Hawaiian Archipelago. Thus, R. giganteus and R. skottsbergii complexes occur on Maui, R. giganteus is known from Molokai, and R. skottsbergii is found on uninhabited Nihoa. On Oahu, there occurs R. albescens Hillebr., and this also occurs on Kauai. G. M. Hocking, Auburn, Ala.

DEGENER, O. and DEGENER, Isa. Review and comments about a thing. - Phytologia 21: 369-374; 1971.

Criticism of a volume ("thing") published in 1968 representing an expedition to the Kipahulu Valley on Maui (Hawaii). Many of the identifications of plants are claimed to be erroneous, there are numerous errors of spelling of name, and the need for conservation of the plant life and the danger to plants of disturbance by man of the natural habitat are not sufficiently stressed. Included is a table of the various errata of taxonomy/nomenclature.
G. M. Hocking, Auburn, Ala.

DEGENER, O. and DEGENER, Isa. Sophora in Hawaii. - Phytologia 21: 411-416; 1971.

Three species of Sophora are recognized as endemic to the islands: S. lanaiensis (Chock) Deg. et Deg.; S. molokaiensis sp. nov. nud. (specimens were collected but mislaid before the entity could be described; this plant material was lost in a museum so that it only remains to find it again; in the meanwhile, the taxon seems to have become extinct as a result of bulldozing of the area); S. unifoliata (Rock) Degener et Sherff var. elliptica (Chock) Deg. et Deg.; and var. kanaioensis (Chock) Deg. et Deg. This varies from the treatment by A. K. Chock, who recognized only one species, four subspecies, 11 varieties, five subvarieties, and 12 forms for the Hawaiian Islands (1956).
G. M. Hocking, Auburn, Ala.

EGGLER, W. A. Quantitative studies of vegetation on sixteen young lava flows on the Island of Hawaii. - Trop. Ecol. 12: 66-100; 1971.

Eighteen different areas on 16 lava flows from Mauna Loa and Kilauea volcanoes, Hawaii, were studied between 1965 and 1968. Each area differed environmentally from each other in one or more important ways. No pattern of succession was detectable among the 18 areas, but the possibility of succession was indicated by a comparison of some of the study areas with nearby islands of old lava. Plant communities in none of the 18 areas was thought to have reached the condition known as the climatic climax, but several appeared to have reached a "steady state", in terms of biomass, because tree and shrub die-back equalled new growth. P. V. Bole, Bombay

ELIASSON, U. Studies in Galápagos plants. XIII. Three new floristic records and two supplementary remarks. - Bot. Not. 125: 320-322; 1972.

Alternanthera lehmannii Hieron., Callitriche deflexa A. Br. ex Hegelm., and Rumex crispus L. are reported as new to the Galápagos. The differences between Chrysanthellum fagerlindii Eliass. and C. pusillum Hook. fil. are pointed out. A recent record of Lecocarpus lecocarpoides (Robins. et Greenm.) Cronq. et Stuessy from San Cristóbal is discussed. A. L. Stork, Stockholm

ELLIS, R. P. and JONES, B. M. G. Cardamine-pollen. - Watsonia 8: 45; 1970.

Observations on the pollen of a number of British species of Cardamine.
D. Kent, London

Fields of waving corn may fill a good part of the 6,000 to 8,000 acres of choice land which the sugar and pineapple industries have given up.

That will include sweet corn for the family table and field corn to feed cattle and pigs. Already corn is green on 2,000 acres of former sugar land at Kilauea on Kauai and at Kohala on the Big Island.

"It's beautiful land," said Dr. James L. Brewbaker, horticulturist at the Hawaii Agricultural Experiment Station in Waimanalo. "I'm just itching to find an economically feasible crop for it. Corn is going to be a very important crop in those areas in a couple of years."

Brewbaker grows corn for experiment purposes. He is seeking the hardiest and most productive strain of hybrid corn for Hawaii. Waimanalo is not the best corn country in the world. It's too cloudy, too rainy. Twenty-eight inches fell on Waimanalo in January. Much of the corn at the experiment station is only as high as a peacock's eye. The fields look sodden. Brewbaker sloshes around in bare feet.

"Last winter we had corn 8 to 10 feet high," he said, almost apologetically.

"Corn needs sun. It's the No. 1 requirement, after water and soil."

HE CARRIES with him in the field a ledger marked "Tally Book," in which he records the vital statistics on the corn he grows. He planted 5,220 rows last year. Each is of different lineage, or parentage. "I try to plant a little every week," he said. The book tells all. It's as hard to decipher as some reporter's notes, but he can read it easily.

"If I lost that book, I'd just retire," he said.

One patch of four 140-foot rows of jade-green corn brought a gleam to his eye. "Isn't it a goody?" he said.

This corn is of well-mixed parentage: a strain from Thailand, by way of Guatemala; a line from India, another from Purdue University, another from Cuba, plus "two parents of my own breed," he said.

He recited a corny, little proverb:

"To breed vigorous results, use diversified parentage."

He said in-breeding can reduce a strain 6 inches in height in one generation. Cross-breeding makes a strain that is hardier and that can resist disease and insects which plague corn.

BREWBAKER DOES NOT SPRAY his crops. He is trying to develop breeds that can resist their enemies — such as mosaic which mottles the green leaves ("it shoots them down"), blight, rust and stalk rot.

Or insects, such as aphids, leafhoppers, and the pesky earworm which Brewbaker fights by producing tightly-packed husks into which the worm can't crawl.

"I use no insecticides" he said. "I let things go with the rationale that we are trying to find genetic resistance, rather than use chemicals.

"The name of the game is resistance. We are trying to get genes that resist pests, disease, and — " he looked up— "The lousy weather."

Of course, this is a never-ending fight. "You lick one thing and you're immediately galloping off on another one," he said.

How does he know what strain to mate with another?

YOU PICK STRAINS for their superior traits, he explained. Say, one strain for a strong root system, another to fight rust, and a third to resist earworm. You add a little here, a little there. It reminds you of a chef at work.

"Sometimes we are just like your wife cooking in the kitchen," said Brewbaker.

No longer do horticulturists try to produce exceptionally tall corn. "Corn as high as an elephant's eye?" said Brewbaker. "That's a waste. Today nobody grows corn higher than a man. In general, we've gone to dwarfishness in a

Career Analyzed, Findings Rich, Varied

Mrs. Bilger, Top Chemist, Leaves UH

In 1907, a young girl in Cincinnati won both the silver and gold medals for oratory offered by the Women's Christian Temperance Union.

That was the beginning of honors for Leonora Neuffer Bilger, who today probably could give a chemical analysis of the contents of any type of bottle the WCTU could find.

For the Ohio orator turned into a senior professor of chemistry who has addressed leading scientists of the world and is listed in 13 directories of outstanding men and women.

• • •

MRS. BILGER isn't slowing down, either, but there's occasion to look backwards at her career—four days ago she retired from the University of Hawaii faculty.

Her husband, Prof. Earl M. Bilger, will be on the faculty several more years. And she will be on campus to do more than just drop by and see him at work, she said.

She wants to wind up research and finish preparing for publication reports on graduate students' work.

• • •

THE TWO BILGERS, for whom an exception was made to a rule against two members of the same household being on the faculty, have been known as Ma and Pa Bilger to thousands of UH students.

Mrs. Bilger in her 32 years on the Manoa campus has been professor of chemistry, dean of women, chairman of the chemistry department, senior professor, and technical advisor to the architect in planning and building of a new $1,250,000 chemistry building.

MRS. BILGER

Off-campus, she has spoken in grade school assemblies, lectured on chemical warfare, briefed Army and Navy men on the atomic bomb, judged high school science contests, challenged alumni groups to enter into responsibility for higher college ethics.

• • •

PAPERS SHE has authored or co-authored have been as varied as the community work she done, from "Three Ethyl Secondarybutyl Hydroxylamines" in 1914 to 1953's "Chemistry and Art Work Together (The Application of a Simple Laboratory Process to Distinguish between Ancient Genuine and Modern Fake Specimens of Chinese Ceramic Art."

In a roundup of her public work are included leadership of the Christ Church Young Girls Social Club in Cincinnati; chairmanship of the Casualty Information Service, Office of Civilian Defense, Hawaii, during World War II; service on the Board of Health fumigation committee, organization of the UH chapter, Student Affiliates of the American Chemical Society.

• • •

AS BROAD in scope are the organizations to which Dr. Bilger belongs:

American Chemical Society, American Assn. for the Advancement of Science, Hawaiian Academy of Science, New York Academy of Sciences, Hawaiian Sugar Technologists, UH Chemistry Club, UH Student Affiliates, National Science Teachers Assn., American Assn. of University Professors, American Assn. of University Women, Honolulu Chamber of Commerce, National League of American Pen Women, Hui Pookela, Delta Kappa Gamma, Phi Beta Kappa and a half dozen more.

• • •

DR. BILGER received her doctorate in 1916 from the University of Cincinnati, studied under Sir William Pope, Sir Ernest Rutherford, Sir J. J. Thomson and Drs. F. W. Aston and T. M. Lowry at Cambridge University, England, and took further graduate courses at UH.

Before coming to the University of Hawaii as a faculty member, she was professor of chemistry and head of the department, Sweet Briar College; instructor, assistant professor and associate professor University of Cincinnati, and engaged in post-doctorate research at Cambridge on a Sarah Berliner Fellowship.

the Degeneria

Garden director Dr. Peter Raven examines the plant in the Climatron. photos by DICK WEDDLE

the Degeneria

continued

flowering plants in the world and at least 50,000 of them are considered endangered now.

"You see, more than half of all these plants — 125,000 — are in the tropical lowland rain forests," Dr. Raven continues. "And these are areas where the population is growing very rapidly. Furthermore, in tropical rain forests, seeds are poorly dispersed and plants have a short life span in which to reproduce. And finally, these forests are now being cut down in quantity everywhere. It's estimated that there will be no tropical rain forests that haven't been cut at least once by the year 2000.

"So you can see that the estimate of 50,000 endangered plants is actually conservative."

Dr. Raven uses the island of New Caledonia as an example. According to the director, there are 3,000 species of plants there, 98 per cent of which are restricted to that island.

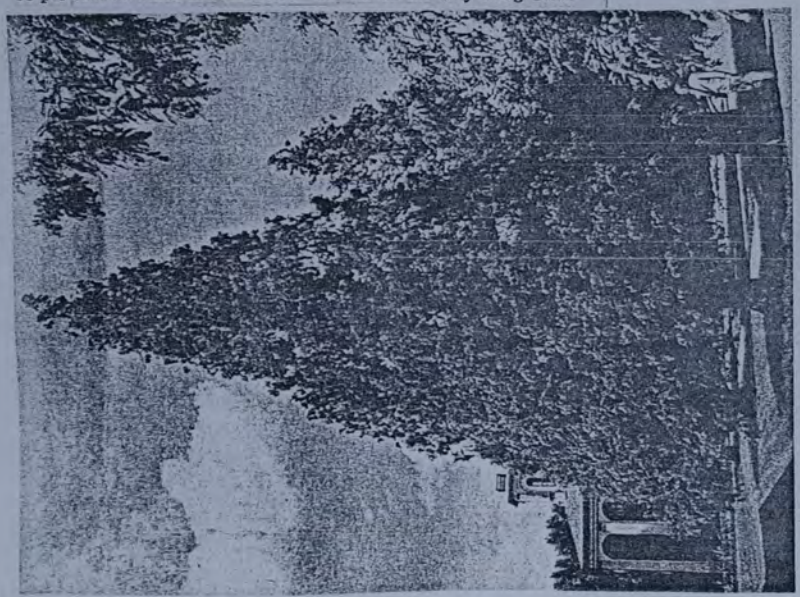
"The French are now strip mining there for aluminum," he says, "and also turning vast amounts of land into pasture in order to raise beef. Within five to 10 years, it's estimated that the process of stripping off the island will be complete. Now there are five families of plants in New Caledonia equally as primitive as the Degeneria.

"So if any of these things are of interest and importance to us, we will have to take steps to preserve them," Dr. Raven stresses. "The Missouri Botanical Garden would like to find funds to work in both New Caledonia and Madagascar which is having the same problems -- to bring back plants to grow and to get samples for study.

"We feel very strongly that whatever United States botanists do will be the only thing done."

Dupl. to D R. Mulcahy, U. of Mass, NRTA, Tepfner, Ames, Woolliams, Aarhus, Adelaide, Ann Arbor, Auckland, Berkeley, Berlin, Bloomington, Bochum, Brno, Brussels, Budapest, Calcutta, Canberra, Carbondale, Chiba, Christchurch, Copenhagen, Coimbra, Dallas,

(75 words)



According to Dr. Raven, these trees on the Garden grounds — Dawn Redwoods — were first described as fossils in 1942 and then two years later living specimens were found in several valleys of western China.

Most people will probably walk right by it without even noticing it. After all, it's just a green plant —one of hundreds in the Climatron at the Missouri Botanical Garden.

But it's a sight to gladden the heart of any botanist. For the Degeneria is a very special plant—a living fossil. And, as far as Dr. Peter Raven, director of the Garden, knows, the Degeneria here is the only one in cultivation anywhere outside its native Fiji Islands.

It's named after Otto Degener, the botanist who discoverd it in the Fijis in the 1940s, who's one of only two living people to have a family of plants named for him. And, all by itself the Degeneria, with its brownish blossoms and seeds, constitutes a family — in contrast to the orchid family, say, in which there are about 30,000 different species.

The Degeneria was shipped to the Missouri Botanical Garden late last spring from the National Arboretum in Washington, D.C., where it had outgrown its facilities. It was grown there from a seed by Fred Meyer, formerly director of horticulture at the Garden here.

"Flowering plants originated 140 million years ago and we estimate that the Degeneria is about 100 million years old," explains Dr. Raven. "It's very, very primitive. The walls of the flower which contains the ovules are open and they don't fuse together until after pollination."

Eventually the Degeneria will grow into a tree, 30 to 40 feet tall. However, although the Garden's plant is about 10 years old, it's still only about seven feet high because it was kept in a pot and constantly pruned at the National Arboretum in order to keep its growth down.

One of the reasons Dr. Raven was particularly pleased to obtain it for the Garden is that it, like many other rare plants, may soon become extinct.

"You hear a lot about rare and endangered species of animals but not much about rare and endangered species of plants," he points out. "However, it's a very real problem. We have about 250,000

continued

Green and Growing

By Horace Clay

That is the way I feel too. I just do not like the idea of cutting the lawn twice a week. That's why I'm all for ground covers — and I don't mean lawn.

There are many to choose from, coming in all sizes, shapes and colors. Even that bright green moss covering the soil in the bonsai pot is a ground cover.

There are a number of pileas which make excellent ground covers in Hawaii. Pilea is usually called artillery plant, because it explodes its pollen just like a cannon or artillery piece. One of the artillery plants locally is called a jade plant, with bright lettuce-green rounded leaves that are somewhat fleshy. It has several forms, and is shrubbing to about 18 inches in height. Every little piece of this particular jade plant — and all of the artillery plants — will root right in place if kept well-watered. All do well in sun or in part shade.

ANOTHER ARTILLERY PLANT is called creeping Charley — and there are large-leaved and small-leaved types — which closely resemble the edible mint which you place in your glass of iced tea. Creeping Charley, as its name suggests, is vine-like with roots at every joint as it travels along. It may bunch-up to about 2 feet in height, but can be trimmed down if a more level appearance is desired. The smaller-leafed creeping Charley hugs the ground more closely than the larger one, so may be more desirable in constricted areas or as a rock garden ground cover.

Creeping Charley also does well in hanging baskets. If there is any complaint about it, it is that it occasionally appears to be rather straggly in baskets. This is because it is grown in too much shade, or it is over-watered, or it is over-fertilized, or it has fertilizer burns. This latter problem, with blackened foliage, is due to dry fertilizer being thrown carelessly on the leaves, and may be avoided by using a liquid fertilizer which is applied only on the soil, and not on the sensitive leaves.

STILL ANOTHER artillery plant is one which is locally (and erroneously) called baby's tears. The real baby's tears is a tiny-leafed plant which is uncommon in Honolulu but common in Hawaii's higher elevations and very, very common along California's foggy, cool coasts. The local baby's tears is usually grown as a hanging basket plant, but I highly recommend it as a dense, close mat of bright green. It blooms as do the other artillery plants, but the flowers are tiny and very insignifcant. The pileas, being soft-stemmed, will not tolerate foot traffic, so do not use any of them, as you would a lawn, for a baseball field.

One of the most useful ground covers is mondo, or lily turf, or Janohige (in Japan). This attractive, grassy-looking plant, actually in the lily family, is a native to Japan, China and Korea. In its Asian home it bears tiny white flowers and rounded blue fruit. In Hawaii, except in very cool locations, it does not flower or fruit.

NORMALLY, DIVISIONS (keikis) are set out about 6 inches apart in a new planting. In about a year, during which time you must carefully remove all weeds, you will have a wonderful thick mat of dark green grassy foliage. Mondo likes moisture, so water frequently. And fertilize with a complete garden fertilizer such as 15-15-15 about every four months. Mondo eventually may make a dense mass about 10 to 12 inches in height. It may be lowered down with a pair of pruning shears, but be careful to avoid pruning down below the crown of each plant. If the crown is cut, the plant will die.

A solution to the pruning problem is to plant the low growing darker-leafed variety of mondo. Ten years ago I brought three little sprigs of this dwarf variety from the Zento Gosho, a large garden in Kyoto, Japan, belonging to the Imperial family. In Hawaii these three little plants have thrived, and are widely available for various kinds of plantings — even as potted plants. This dwarf mondo makes a very low mat, only a few inches deep, and is darker green in bright sun than its taller growing cousin. Over-fertilization will cause longer leaves on this dwarf variety.

BOTH MONDOS ARE, with some protection, even very satisfactory at the beach. One of the best plantings of mondo on Oahu is at Lanikai, right on the ocean front. Of course under beach conditions, daily watering is necessary, and fertilization is required at least every other month. Place stepping stones among the lily turf plants, for they will withstand very little walking-upon.

A succulent Sedum Rupestre, often grown in dish gardens also makes a neat, light green and lush looking ground cover in a very short time. Little leafy heads of the plant can be cut off with shears, and if the small shoots are merely planted in place, they quickly root and spread. Sedum makes a soft desireable mat only a few inches high, and is best in the full sun or part shade. Do not walk on it, but do keep it lightly moist at all times.

Diploma costs varied

Interested in the article about "Surplus' UH diplomas" (12/24), I wish to add that the graduation fee with diploma included was not uniformly $5 at the Manoa Valley institution. Names of graduates were carefully and beautifully hand-written on each diploma. Hawaiians, who happened to be blessed with unusually long middle names—I remember "Kapohakimohewa"—were assessed a few additional dollars for the extra time necessary to prepare such a complicated diploma.

DR. OTTO DEGENER
University of Hawaii, M.S., '23; Faculty, '25-'27

A near miss— Russian rule over Islands

By ROBERT C. MILLER
UPI Honolulu Bureau Chief

LIHUE — But for a slight error of judgment by a German agent for czarist Russia, Americans today might be paying their Waikiki hotel bills in rubles.

Historian Catherine Stauder says new research shows that Dr. Georg Anton Schaffer, as an agent for the Russian American Co., attempted to annex the Islands for St. Petersburg in 1816, and built four fortifications in Hawaii. But he bet on the wrong Hawaiian king.

Records of the Alaska-based company made available by Soviet historians show that a boatload of dried taro and preserved pork probably thwarted the ambitions of Schaffer, who declared: "No power in the world has more right to these islands than Russia."

Bavaria-born Schaffer — or Egor Antonovich Scheffer, as he was known in Russia — made a mistake that affected Russia's future in the Pacific. He bet that Kauai's frustrated King Kaumualii could successfully overthrow the regime of King Kamehameha.

On July 1, 1816, Schaffer induced Kaumualii to sign a treaty that would "place himself, with all the people under his sway, under the protection of the Russian emperor, Czar Alexander I."

In addition, Schaffer promised arms, ships and men to help overthrow Kamehameha's government. In return, Kaumualii promised the Russians half of the island of Oahu — when they conquered it — as well as the sandalwood concession on Oahu and Kauai, and permission for the Russian American Co. to establish factories and plantations on all his islands.

Schaffer's empire-building ambitions collapsed when three things happened:

- Alexander Andreievitch Baranoff, chief manager for the Russian American Co. in Alaska, divorced himself and the company from Schaffer's announced plans.
- The ships, arms and men Schaffer promised Kaumualii for his war never arrived.
- The British and Americans who feared Russian expansion into the Hawaiian Islands ganged up on the doctor and undermined his position with Kaumualii.

Eventually, Czar Alexander said thanks but no thanks to Kaumualii's appeal for Russian protection and sent him instead a gold-tasseled sword and a beautifully embossed letter and made the king a member of the order of St. Anne.

The director of the Kauai museum, Robert Gah-

Hawaii's valuable ecosystems

Hon. Adv. 2/4/77

It has been more than a month since the Entomological Society of America held its annual meeting in Honolulu. As president, I am writing on behalf of the society to express appreciation for the excellent news item published in the Dec. 5th issue of your newspaper. Copies of the resolutions referred to in that news item have been sent to the Governor of Hawaii as well as to State legislators and other State and Federal public officials with responsibility of management of natural areas of Hawaii. These were accompanied by a covering letter that further explained the society's interest in the matter. The following is an extract from my letter to Governor George R. Ariyoshi.

"As Governor of Hawaii I know you are concerned about the future of Hawaii's remaining undeveloped natural areas. You no doubt also receive much often conflicting advice as to how these areas can be best utilized. The enclosed resolutions represent the expressed concern of a scientific society representing basic and applied aspects of the study of insects. Because of its many unique characteristics, the Hawaiian insect fauna constitutes a natural laboratory that for more than a century has provided a fruitful source of information on dispersal and evolution of organisms. Entomologists, evolutionists, and biogeographers of many countries have contributed significantly to knowledge of basic biological and ecological phenomena as a result of studies in the Hawaiian Islands.

"Much remains to be learned. Aside from the loss of unique life forms, the continued destruction or modification of native Hawaiian ecosystems means that the sum of knowledge concerning life on this planet will be poorer. It is therefore the sense of the society's resolutions that everything possible be done to preserve Hawaii's remaining natural areas."

REECE I. SAILER
President

AIIAN BOTANICAL SOCIETY

t of Botany, University of Hawaii
e Way, Honolulu, Hawaii 96822

THE HAWAIIAN BOTANICAL SOCIETY NEWSLETTER is published in February, April, June, October, and December. It is distributed

heobald

Mr Degener:

This material need not be returned.

Arthur P. McCormack

Big Island botanist dies at 53

Amy Beatrice Holdsworth Greenwell, 53, a Big Island botanist and specialist in Hawaiiana, died at the Queen's hospital Monday after a long illness. Hon. Adv.

Miss Greenwell, who resided in Kealakekua, was the daughter of the late kamaaina rancher Arthur L. Greenwell of Kona.

Services will be private. Instead of flowers, friends may make donations to the Daughters of Hawaii for the restoration of Hulihae Palace. 8/7/74

A LONG-TIME Island resident, Miss Greenwell attended Hanahauoli and Punahou Schools and the University of Hawaii. She also attended Stanford University.

Her passion for Hawaiian studies led her to extensive writing and research on local plants; she co-authored the fifth volume of Flora Hawaiiansis with botanist Otto Degener.

On May 6, Miss Greenwell received a certificate of recognition from the Hawaiian Botanical Society for her contributions to the aims of the society.

Miss Greenwell also worked closely with the Bishop Museum, joining its archaeological projects on the Big Island. She has been credited as being among the first researchers to discover evidence of the first landings of the Hawaiians at South Point.

SHE HAS been a member of the Bishop Museum Association, a life member of the Daughters of Hawaii and a member of the Junior League of Honolulu.

During World War II, Miss Greenwell joined the Women's Air Raid Defense group and became a Red Cross nurses' aid at Queen's hospital.

Her Big Island community ties included membership in the Kealakekua Christ Church and the Kona Civic Club, where she once served as president. She also was past director and chairman of the board of Kona Hospital.

Miss Greenwell had served as director and treasurer of Kealakekua Ranch Ltd., which was acquired by her grandfather, Henry Greenwell, in 1881.

She is survived by her mother, Mrs. Arthur L. Greenwell; brother, Sherwood R. H., a former Big Island councilman and now Kealakekua Ranch manager; and two nieces and a nephew.

Cruel death for pets

I read the article about the "Nazi Holocaust Survivor," referring to the gas chambers of the Auschwitz Concentration Camp (4/24). Can it happen here? Surely not to humans.

When my faithful dog was ready for the Happy Hunting Grounds in the Sky due to painful tumors, I brought her to a veterinarian. While I was petting her on the operating table and she felt comfortable and at ease, he gave her an injection. As a result I, and certainly she, never realized that she had died. Her death was practically instantaneous, absolutely painless and without distress or fear.

Our faithful pets, to save the cost of a few cents worth of a barbiturate per animal, are now being crowded in many institutions in the United States into a sealed chamber. A motor is then turned on and the air gradually exhausted from it. This very painful and distressing death by asphyxiation may take as long as 10 minutes!

Now that we realize what may be happening to our faithful pets in many parts of the United States, I appeal to owners not to forsake their faithful, four-legged friends to such a final, cruel fate.

OTTO DEGENER
Waialua

第49巻 第7号 (通巻第557号) Vol. 49 No. 7

植物研究雑誌

THE JOURNAL OF JAPANESE BOTANY

昭和49年7月 July 1974

津村研究所
Tsumura Laboratory
TOKYO

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〔表紙カットの説明〕 *Degeneria vitiensis* の果実と種子。フィジー諸島に産する1科，1属，1種の裸子植物で原始被子植物の一つとしてよく知られる。図はソ連の A. Takhtajan 氏がフィジー諸島調査の帰途，日本により，行山高氏に寄贈されたものを写真にした。　(山崎　敬)

〔Explanation of the cut on the cover〕 A fruit and seeds of *Degeneria vitiensis* presented by Dr. A. Takhtajan to Dr. T. Tuyama in 1971. Photo by T. Yamazaki.　(T. Yamazaki)

does not sign the marketing agreement," Mr. Rice explained.

"In other words," interrupted Justice Bailey, "if the Hawaiians enter the agreement, they will get the money—otherwise not?"

Called Strictly Legal

Mr. Rice said that was the situation and it was strictly legal.

"This proclamation does not mean they may not receive benefit payments but does mean they will not unless they sign a voluntary agreement," Mr. Rice said.

"That seems to be coercion," commented the judge.

"No, it is not coercion; it was the only thing the government could do," corrected Mr. Rice.

"That may be your opinion, but it is not mine," retorted the judge.

Royal D. Mead, HSPA counsel, explained that if HSPA members signed the marketing agreement, they would be liable not only to present sugar regulations but to all future regulations, the department of agriculture might issue.

Quotas "Reasonable"

Mr. Rice, in a brief argument for the government, said the Jones-Costigan act is constitutional; that its quotas are reasonable and proper; that the secretary of agriculture did not exceed his authority under the act; that the complainants had failed to show a basis for relief in equity, and asked that the bill of complaint be dismissed.

He said Secretary Wallace had to accept the best figures obtainable in fixing quotas; that months would have been required to check statistics.

He said the announcement of quotas sent sugar prices upward and but for sugar regulation prices would have sagged to record lows.

He said the Hawaiian quota is only three fourths exhausted today and will not be exhausted until near the end of the year, and it will be no burden for Hawaii to store excess sugar for a week or two at the end of the year.

Cuba, Mr. Rice said, was once a great customer of American farm products, but its purchases have now decreased almost to the vanishing point.

He said congress' action regarding sugar was entirely legal because congress can interest itself in any matter affecting interstate commerce.

He declared the people of the United States as sovereign owners of a national territory have supreme power over territories and their inhabitants and can discriminate against them if they choose.

Mr. Rice said the property right may be cut down in the interest of public welfare.

James R. Garfield, HSPA counsel, in his closing argument said there had never been any doubt about the incorporation of Hawaii as a teritory; that congress never before had attempted such legislation as the Jones-Costigan act; that the sugar law was designed to benefit Cuba at the expense of Hawaii; that Hawaii; that Hawaii was like Texas in that it was an independent nation before it came into the union; that it was shocking to hear counsel say congress might legally dispose of Hawaii, but Hawaii produces sugar not with cheap oriental labor but with labor better paid than that in continental United States; that Hawaii is unwilling to sell its birthright; that this case goes deep down into fundamental rights of American citizenship; that the sugar act is uncertain, incongruous, impossible and discriminatory in every sense.

Goes to the Court

This afternoon's arguments closed the case and it is now in the hands of the court. A decision is expected within a few weeks.

Justice Bailey commented during the summary by Rice that he would have a very difficult time deciding the case.

Mr. Garfield, in his opening argument, said that the government in building a new economic system of controlled agricultural production violates the constitution and overrides the laws of the United States.

His statement came in the closing arguments of the HSPA suit to withhold application of the Jones-Costigan sugar act from the territory of Hawaii.

Mr. Garfield said that whereever his clients turned in the sugar act they found discrimination against Hawaii.

When congress passed the original agricultural adjustment act, it refused to include sugar as a basic commodity because there was in the sugar industry neither emergency, domestic surplus nor overproduction, Mr. Garfield said.

Sugar was added to the list later in an effort to help continental beet sugar producers and Cuba, he declared.

"Congress itself discriminated against Hawaii when it classified Hawaii with Cuba, Puerto Rico and the Philippines," he went on.

"Congress exercised a power it may not exercise, in discriminating against one section of the country in favor of another.

"This act gave Cuba benefits not extended to any other area."

Arguments were expected to be concluded today and Justice Bailey will take the case under advisement.

Both sides have announced a desire to have the supreme court decide the case as quickly as possible.

Answering Mr. Garfield, Mr. Rice said the Jones-Costigan act does not provide for limitation of production in any area but merely stipulates how much sugar each area may dispose of in the United States.

AVOCADO CO. GETS BIG ORDER FOR ITS PRODUCT ON COAST

The Hawaiian Avocado Co. has entered into a five year contract with the Gelfand Co. of Los Angeles, large food manufacturer and distributor, for shipments of avocado pulp in barrels which will amount to approximately $25.000 a year.

Under the terms of the contract the local company will supply the Los Angeles concern with a minimum of 20 barrels of pulp monthly and with as much more as the Hawaiian Avocado Co. is in position to furnish.

The Gelfand Co. will use the pulp in the preparation of avocado mayonnaise, a product developed by the Honolulu concern and now gaining wide favor on the mainland. The Hawaiian Avocado Co. has authorized the Los Angeles concern to make avocado mayonnaise and distribute it in California and Arizona.

Officials of the Honolulu concern have announced that other contracts are in prospect, inquiries regarding avocado pulp having been received from several large eastern, western and middle western food manufacturing centers.

KAMAKAHALA . . . --By Degener

Drawing of a plant described in Harold St. John's "Hawaiian Plant Studies," from Otto Degener's "Illustrated Hawaiian Flora."

Hawaii Plant Studies Series Launched Here

HAWAIIAN PLANT STUDIES, No. 1, by Harold St. John. Bishop Museum Press.

Reviewed by Otto Degener, botanist, University of Hawaii, 1925-27; author, "Plants of Hawaii National Park," "Flora Hawaiiensis."

The Bishop museum is projecting, under leadership of Dr. Harold St. John, a series of "Hawaiian plant studies," of which the first was published recently. This paper of ten pages deals with four plants now growing in the islands.

It correctly determines which one of two technical names a native loosestrife (Lysimachia) should bear. It records the first known occurrence of a certain American marsh fleabane (Pluchea) in the islands. This last was found on recent coral fill in Honolulu in 1931. The plant is spreading rapidly because of its wind-borne seeds. It now being found all the way from Honolulu to Barbers point and beyond.

Dr. St. John gives valuable additional facts regarding the occurrence and shape of a strange Hawaiian shrub first described and figured as new to science by the reviewer in his "New Illustrated Hawaiian Flora." This shrub, called kamakahala by the Hawaiians, bears pale yellow flowers. Such flowers were reserved for the making of leis for royalty in olden times.

The paper gives an excellent description of a naupaka found in Kipapa gulch, Oahu. This plant, according to the author, is new to science and is named by him Scaevola Skottsbergii. It is said to be most closely related to a plant growing in west Australia.

"Hawaiian Plant Studies" bids fair to become a welcome addition to the technical botanical literature of Hawaii. The value of the initial number, according to the reviewer and his assistants, is somewhat marred by the fact that Skottsberg's scaevola is not a new kind of plant at all but is actually Menzies' scaevola described by Chamisso exactly 100 years ago. Besides growing in Kipapa gulch, the plant may be found on Oahu easily today by anyone who will take the trouble to walk along Niu ridge and on the plateau above Kaena point. We need not go to Australia to find its nearest relative—that grows near Makaopuhi crater on the island of Hawaii and is known as the Kilauea scaevola.

Seventy Years Ago—1857

The Flora of the Hawaiian islands, the posthumous work of the late Dr. Hillebrand is a most valuable book. Those interested, even in an amateur way, in the botany of the Islands have long looked forward to its publication.

Botanical Riches

Our Environment

By Harry Whitten

DESPITE THE destruction of native plants in the past 200 years, the Hawaiian Islands are still a mecca for research, according to the husband and wife botanical team of Otto and Isa Degener.

They estimate that the Hawaiian archipelago may have had an endemic flora of 50,000 species before the advent of man. Most botanists have lived or collected on Oahu, to a large extent neglecting the Neighbor Islands.

"What wealth of plants must still be growing there unknown to man!" the Degeners say.

Their comments on Hawaiian plants are in a review, published in the scientific journal Phytologia, of Harold St. John's book, "List of Flowering Plants in Hawaii."

THE DEGENERS are especially qualified to comment. They are the authors of the monumental series of books entitled "Flora Hawaiiensis" or "New Illustrated Flora of the Hawaiian Islands." Book I of the series was published in 1933; Book VII will be published in the next year or so, Degener said yesterday.

He has been a plant explorer in Hawaii since 1922 and has collected more than 35,000 species. He is the author of the fascinating book, "Plants of Hawaii National Park," and since 1933 has been collaborator in Hawaiian botany with the New York Botanical Garden.

The Hawaiian Archipelago had a huge number of native plants before the arrival of man, according to two Island botanists. They say many plants still have not been discovered.

Now almost 76 years old, Degener is well aware that all the great variety of Hawaii's endemic or native plants can't be collected in his lifetime.

"WE APPEAL to the biological workers of the world to come to this Mecca to collect its neglected riches before 'progress' destroys them," the Degeners say.

"As botanists cannot prevent the continuous slaughter of one endemic taxon after another, they should at least attempt to collect, preserve and record as much of the Hawaiian flora that is still extant so that future generations shall better understand what a splendid Paradise of the Pacific their forbears lost."

Taxonomy is defined as the orderly classification of plants and animals according to their presumed natural relationships; a taxon is the name applied to a taxonomic group in a formal system of nomenclature.

THE ANCESTORS of the Hawaiians brought to these islands dogs, pigs, chickens, and, probably as stowaways, rats. They also brought plants useful in clothing, food and medicine which came from the Marquesas, Tahiti and Samoa.

"Set fires and the pursuit of agriculture wiped out much of the original, extensive dry forests," the Degeners say, and feral pigs also decimated the vegetation.

The destruction was small, however, compared to what occurred after the arrival of Capt. James Cook, when native plants suffered the onslaught of cattle, insect pests, bulldozers, and competition from plants introduced from Occident and Orient.

"Yet despite wholesale destruction, goodly proportions of most islands are still relatively undefiled, particularly in our two national parks, in the fogbelt too wet for crop plants and farm animals, and on the precipitous slopes," the Degeners say.

THEIR ARTICLE includes a photograph of a statue, now in the Museum fur Volkerkunde, Berlin, that presumably is of a Spanish grandee, carved out of Hawaiian lava. It was dug up in the early 19th century in a taro patch, the Degeners were told when they visited the museum in 1952.

They mention the statue in connection with their assertion that the Hawaiian Islands were discovered in the 16th century, between the discovery by the Hawaiians and the discovery by Capt. Cook. This was when a Spanish galleon was shipwrecked on the Big Island.

They say that a map of the Pacific published in 1696 by Vicenzo Maria Coronelli shows a group of islands that might easily represent the Hawaiian Archipelago.

"The 'unwritten literature' or epics of the Hawaiians handed down from father to son and from priest to priest refer to the coming of Spaniards. In fact some Hawaiians, among them a teacher living along the Kona Coast of Hawaii, maintain their relationship to some of these Spaniards."

The Degeners say natives were in possession of metal of European origin before Cook's arrival and may have had the pineapple since Spanish times.

Audubon Program

OLD SONGS, an ancient chant and new poems about Hawaiian wildlife will be on the program at the general meeting of the Hawaii Audubon Society at 7:30 p.m. Monday at the Waikiki Aquarium Auditorium, 2777 Kalakaua Ave.

Steve Montgomery, who is coordinating the program, says it will include:

Michael and Lorna McClellan playing musical instruments and singing three Hawaiian songs.

Presentation of part of the Kumulipo, a Hawaiian creation chant, telling the poetic story of the origin and interdependence of birds, plants and sea life;

Dr. John Unterecker of the University of Hawaii reading his poem about the nene, "State Symbol;

Sunny Gail Mitsui of Kauai reading Joe Hadley's pidgin poem, "Dabeegeeneen," which relates a wilderness experience. This reading will be combined with slides that illustrate Robert Wenkam's book, "Kauai and the Park Country of Hawaii."

SILVERSWORDS & THE BLUE DATA BOOK.

by Drs.Otto & Isa Degener.
(Authors:Flora Hawaiiensis).

The beautifully illustrated warning appearing in the January issue of the "Smithsonian" by Jenkins & Ayensu entitled "One Tenth Of Our Plant Species May Not Survive", is causing some wonder & criticism among its readers in the Hawaiian Islands.That our archepelago harbors a flora consisting "approximately of 2,200 kinds of plants" is absurd,and that the photograph of a silversword on page 96 is that of Argyroxiphium kauense is a misidentification.

As mentioned elsewhere(Phytologia 29: 240-246.1974),the Hawaiian flora probably consisted of about 50,000 well recognizable species & varieties before the original Polynesians arrived a few thousand years ago with pigs,rats,chickens and their cultigens.From that time on native farming wiped out many of the lowland endemics particularly on the lee side of the islands safe from torrential rainfall;while their introduced rooting pigs & gnawing rats,spreading from sea level to all but the highest mountain peaks,undoubtedly ravaged the endemic vegetation particularly of the rainforest into which native hunters with their primitive weapons seldom penetrated.

With the rediscovery of the islands by Captain Cook in 1778,the remaining Hawaiian flora consisted of close to 30,000 species & obvious varieties.Due to resulting Caucasian & Oriental introductions of food plants,farm & range animals,weeds & timber trees,insect & fungus diseases, animals prized by hunters,& the bulldozing of vast areas for golf courses & human housing,today only about 20,000 of such taxa remain.Of this impressive number barely 3,000 have been adequately described.

An inkling of our present vast ignorance of the botanical riches about us is shown

by a modern listing of cyrtandras native to the Hawaiian Islands:

ISLAND	No.OF KINDS KNOWN TO DATE	SQUARE MILES
OAHU	128	604
MAUI	29	728
HAWAII	23	4,030
KAUAI	22	555
MOLOKAI	13	260
LANAI	6	141

Does it not seem strange that Oahu with 604 square miles has 128 cyrtandras when Maui with 728 square miles has only 29 known cyrtandras & Kauai with 555 has only 22? Figuring differently,is it not suspicious that Oahu with only 604 square miles has 128 cyrtandras,when the remaining five islands with 5,814 square miles should have only 91? The explanation for such a discrepancy of distribution in the genus Cyrtandra is not botanical.IT IS HUMAN!

"Oahu has been the center of human activity for nigh unto two hundred years.It is the seat of the capital,Honolulu,where the Bishop Museum & the University are located. Most visiting botanists & collectors resided there,and collected within easy walking, riding or driving distance of the city. Teachers...scoured Oahu with their students weekends & holidays for its botanical riches. The "outside islands",in contrast,always have been neglected."If Oahu with about 600 miles averaged one cyrtandra for every four or five square miles,could not the entire archipelago with a combined total of 6,418 square miles theoretically harbor 1,283?Even were we to reduce the "mileage" by half because of some inhospitable lava flows and alpine heights on Maui & Hawaii,our population of discovered & still undiscovered cyrtandra taxa would exceed 500.What applies to the genus Cyrtandra,relatively unknown in the archepelago excepting of Oahu,applies more or less to the remaining Hawaiian genera.

To propose a list of endangered,threatened and recently extinct species of higher

group to discuss the issue.

Among those expressing their opposition were Dr. Roland W. Force, director of the Bishop Museum; faculty of the Church College biology department; Dr. J. Linsley Gressitt, Bishop Museum zoologist; Dr. Wayne C. Gagne, secretary of the Hawaiian Botanical Society; Dr. Dieter Mueller-Dombois, director of a U.S. study on Big Island ecosystems, and Dr. F. R. Fosberg, adviser for tropical biology at the Smithsonian Institution in Washington, D.C.

No testimony was submitted in favor.

HEATED DISCUSSION punctuated the hearing, held at Bishop Museum, until museum scientist Dr. Frank J. Radovsky took the chair to testify. Dr. Radovsky was suffering from laryngitis, and his whispering lowered the volume all around.

Takata asked Radovsky why he felt Axis deer could potentially become the "most important disease reservoir" on the Big Island.

Radovsky said the deer probably carry as many different diseases as sheep, goats and pigs that are transmittable to cattle. Additionally, deer carry some transmittable diseases that the other animals don't, he said.

Because the nimble deer are difficult to fence out of cattle pastures, they would be a lot harder to control in the event they ever become a menace to cattle, he said.

Radovsky said some deer afflicted with tuberculosis on Molokai haven't apparently endangered many cattle on that Island because they remain more or less isolated at Molokai's east end.

AXIS DEER on the Big Island would be less likely to remain isolated in small pockets of land, he said.

In a position paper written by Dr. Fosberg of the Smithsonian, Fosberg said, "Scientifically this introduction is indefensible. All previous experience shows that the inevitable result of the introduction of four-footed animals on an oceanic island is degradation of the ecosystem, loss of vegetation and soil and of the animals which depend on these."

Fosberg said earlier introductions of foreign species to the Hawaiian Islands were based on "ecological illiteracy . . . There is no longer any excuse for losing these things through ignorance. If we deprive our descendants of some of what makes the world, and especially Hawaii, an interesting place to live, it is now only because we don't care, not because we don't know.

"Scientifically, I have no hesitation in saying that introducing deer on the Island of Hawaii will, in the long run, be a catastrophe with no compensating benefit."

Advertiser Photo by Art Ohm

Takata and Endrizal: Board has final say.

THIS is what sells papers?

The State Animal Species Advisory Commission ran into a public relations problem yesterday.

Commission member Dr. Alan C. Ziegler has been leading a petition drive against a proposal to introduce Axis deer onto the Big Island.

Commission member Earl J. Pacheco, a Big Island resident, asked if it was "ethical or unethical for commissioners to influence public opinion."

Commission member Dr. Wilbur Y. K. Yee moved for a moratorium on any discussion of the deer issue until the group learns what members of other State advisory groups do.

Commission member Dr. Garth L. Murphy moved to amend the motion. He wanted to limit discussion of the deer problem to commission meetings only.

MURPHY'S amendment passed, with Ziegler dissenting.

Yee's motion passed next, unanimously, it appeared.

Then the group realized they had agreed to limit their discussions to meetings only, and to prohibit any discussion at all. That was a self-contradiction.

They took another vote. They agreed to 1) learn what other State groups do, 2) discuss the issue at their meetings, and 3) prohibit themselves from discussing it publicly in the meantime.

Someone asked if their meetings weren't public. Reporters looked up. Chairman Ronald Endrizal reached for a cigaret.

Ziegler moved 1) to allow deer discussions at meetings, 2) allow members to speak up outside of meetings, and 3) ask the Ethics Commission what to do.

His idea failed for lack of a second.

ZIEGLER ARGUED that banning members from speaking out on the issue, to be effective, would mean that everyone's "lips are completely sealed."

He said it would mean Pacheco couldn't say a word about commission business to anyone back on the Big Island, even when they asked him what was going on.

Congressmen speak out on issues, he said, and advisers to the State should do the same thing.

"Let's have a moratorium and be objective," said the chairman."

Murphy accused Ziegler of making an "outrageous misinterpretation of the facts" in his public statements on Axis deer. Ziegler and Dr. Yee discussed shooting fawns. A question arose on the difference between "shooting" and "slaughter."

THE CHAIRMAN wanted the members to be objective. He asked member Dr. Andrew J. Berger how he felt about things. Berger said he was unsure.

"This makes beautiful reading in the public press," said commission member Michio Takata, head of State Fish and Game. "Perhaps this is what sells papers, but it won't help this commission."

Favor of introducing Axis deer to the Big Island, Star-Bulletin, 11/19/75

EMMA AHUENA TAYLOR was one of the great historians of Hawaii. She knew the old families intimately and was herself a part of them — not by marriage, mind you, but by birth. And she had a saying in Hawaiian that was quite apropos to the moment. Aohe nou keia halau, nolaila aohe no oe e like i kuu mau poopoo: You are not of this house, hence you do not know the secrets of its closets. Frederick Simpich is not of this house, hence he knows not the secrets of its closets.

Against Axis Deer

SIR: I read with considerable boredom that "The hotly disputed question of introducing axis deer to the Big Island for hunting has been taken up by the Animal Species Advisory Commission at the request of the Big Island commission member who favors the introduction." Nothing at all is mentioned about any Plant Species Advisory Commission that would be presumably 100 per cent opposed. It further states that the Commission Chairman Ronald J. Endrigal, an attorney and not a biologist, feels "it's a good objective commission which will be able to arrive at an acceptable solution."

This question of introducing axis deer to the Island of Hawaii is ancient history! Articles and letters appeared about it in the Star-Bulletin as long ago as June 2, 1950, and in the Advertiser, Aug. 28, 1950, and at intervals since then.

The above express the opinions held mostly by our parents, who were as wise or almost as wise as we. The consensus was against deer then. Why rehash everything over again? Waste time!

From study of the above, I find the arguments in favor of introducing axis deer to the Island of Hawaii to be:

1. Easier access for hunters to a preferred game animal.

2. A small increase in income for the State from hunting license fees.

3. A small increase of business for a few concerns selling sporting goods.

In contrast, I find arguments in opposition to the introduction of deer to the Island of Hawaii to be:

1. Ranchers feared competition from deer for forage for their cattle, and particularly the spread of cattle diseas-

The student made a major discovery on Molokai. He spotted an 'iiwi, one of Hawaii's most beautiful native birds, which has not been recorded on the island since the turn of the century.

He also found three species of land shells still existing in Molokai's forests.

HE HAS recommended to the commission that the entire forest reserve from the west wall of Waikoku to the east wall of Wailau be set aside as a reserve area.

He said he has made no recommendation for West Maui except that something be done about the cattle.

Gressitt commended the youth for his work, adding to the scientific knowledge of West Maui and Molokai, and observed:

"He deserves a lot of credit for not falling off a cliff."

By OTTO DEGENER

University of Hawaii Class '30, Faculty '35-'37 Naturalist, Park, National Parks, Info Collaborator in Bot. Botany, N.Y. Bot. Garden Contributor, Flora Haw., etc.

Trib-Herald

The question of introducing axis deer to the Island of Hawaii (raised again recently) is ancient history! Articles and letters on the question have appeared periodically in the newspapers since 1934.

2/13/72

The articles and letters against the epidemic idea mostly by our parents, who were as wise or almost as wise as we. The consensus was against deer then. Why rehash everything over again? Waste time!

From study of the above, I find the arguments in favor of introducing axis deer to the Island of Hawaii to be:

1—Easier access for hunters to a preferred game animal.

2—A small increase in income for the State from hunting license fees.

3—A small increase of business for a few concerns selling sporting goods.

In contrast, I find arguments in opposition to the introduction of deer to the Island of Hawaii to be:

1—Ranchers fenced competition from deer for forage for their cattle, and particularly the spread of cattle diseases from one paddock to another—deer are fence hunters.

2—Dairymen feared transmission of bovine tuberculosis. All axis deer in Manoa Valley, Oahu, were infected; and the infection had spread to the dairy herd.

3—Pineapple growers on Lanai showed photos of how deer had eaten out the hearts of pineapple plants; cane growers feared damage in cane; vegetable growers reported injury to vegetables.

4—Axis deer are grazers and browsers, and hence tend to destroy forests. The dry forest of West Molokai where I collected the native gardenia and other rare trees in 1924 is gone forever; the Kamaopuu Forest of Lanai is now decadent and shrinking in area; East Molokai was so damaged many years ago by deer that hunters were hired to shoot and exterminate them.

5—Besides helping to destroy our native forests by browsing, deer cause injury and death by trampling roots with resultant gully erosion. They also kill trees during the rutting season by girdling them.

6—Axis deer are selective in their feeding habits. Of Hawaiian plants (algaroba, kiawe, cactus, Christmasberry poisonous, Hilo grass, etc.) have developed spines or poison to discourage animals from eating them to death. Islan[illegible] almost 100 per cent endemic, are mercilessly sp[illegible] by browsers and [illegible] are protected by only [illegible] native Hawaiian plants, encouraging their replacement by noxious introduced weeds.

7—The introduction of deer takes hunter pressure off goats, which are presently our major destroyers of vegetation. What hunter will shoot goats when deer are available?

8—The National Park personnel (Mr. Eberhardt) deplored the threatened introduction of axis deer.

9—The late Governor Samuel Wilder King in a letter dated to me Jan. 6, 1955, stated in part: ". . . as far as I am personally concerned, I would not approve it (liberation of axis deer) either administratively or legislatively."

10—Mrs. Degener and I visited New Zealand a few years ago, a country not unlike our own. The damage by unwisely introduced deer was so great that paid bounty hunters were engaged to "cull" them.

11—The biologically educated World knows that isolated Hawaii's native plants and animals are intimately associated with one another for survival—destroy one link, and the chain collapses. For example, 70 kinds of bird species once lived in the Islands. Now 24 are extinct. Of the 61 bird species threatened with extinction in the United States, 23 are Hawaiian. This is internationally known. With their specialized food plants gone, they tend to starve to death. The same type of extinction pertains to other groups of Hawaiian plants and animals.

The American Society of Mammalogists, comprising experts from all the States including the Territory of Hawaii, met in Yellowstone National Park June 22-23, 1950. They expressed strong disapproval of the introduction of axis deer to the Island of Hawaii. They used the word "folly," a word easily translated into the Hawaiian language by every one of us.

Were the Italians to Tear down the Coliseum for building blocks, the Greeks to burn the Parthenon for quick lime, the Egyptians to bulldoze the Pyramids for a hotel with sunny golf course, or the French to paint out the illusive smile of da Vinci's Mona Lisa so that her mouth stood agape to show a missing tooth, the entire civilized World would be aghast!

Similarly, if the State of Hawaii were to introduce deer to the Island of Hawaii to exterminate endemic plants and animals that Nature or God in His infinite wisdom has created on the Island of Hawaii and here alone, the civilized World would be similarly aghast at such vandalism! May God have mercy on the souls of those who make the wrong decision. Hitler with the aid of gauleiter practiced genocide on Jews and Gypsies in Europe. Will Hawaii with the aid of axis deer practice genocide the native plants and animals God has created in Hawaii?

Scientists oppose introducing deer on Big Island

Star-Bulletin 2/5/72

[illegible] that distinguished scientists enlisted the State Animal Industry Advisory Commission with written testimony yesterday against the introduction of Axis deer onto the Big Island.

For more than 20 years, hunters have pressed to introduce [illegible] but influential conservationists have opposed the proposal.

[illegible] Tinsley, head of the State Fish and Game Division, [illegible] that the deer would [illegible] He said the matter is [illegible] Governor now until the commission [illegible]

A FINAL DECISION rests with the State Board of Land and Natural Resources.

7/30/72

Hunt

farmers federation opposes Axis deer

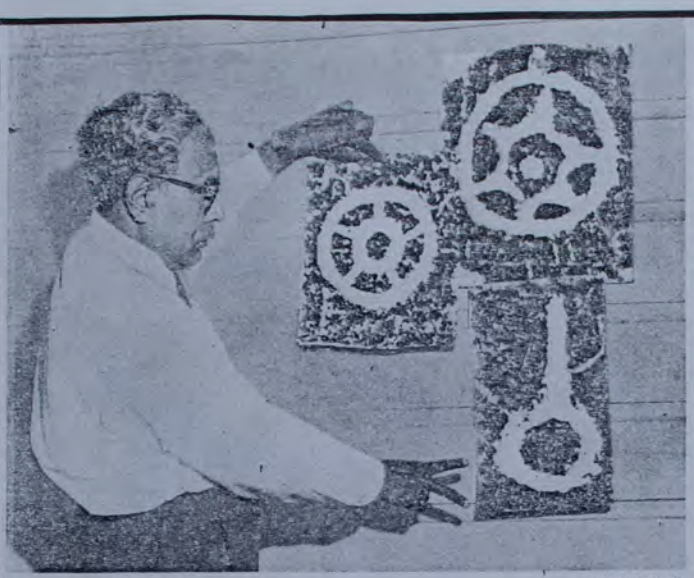
HILO — The statewide Hawaii Farm Bureau Federation has joined in opposing the introduction of Axis deer on the Big Island, president Wallace Nitta has announced.

The bureau joins several Hawaii agricultural organizations in lining up in the fight that has been going on for 20 years.

"ACTUAL AND potential economic danger to agriculture is greater than the possible advantages," Nitta said in a letter to Gov. John A. Burns.

He predicted two or three deer could cause great damage to vegetable crops, and added costs to cattle ranchers to fence deer out "would figure out to several hundred dollars per acre on a small farm."

Nitta said there was potential danger to sugar cane and macadamia nut producers. "We also question the advisability of deer introduction to the Island on the grounds of ecology," he said.



Sonny McNicoll

Isle Petroglyphs Similiar to India's

A few estampages from Big Island petroglyphs having ancient Indian significance are displayed by Dr. Bahadur Chand Chhabra in Hilo. The archaeologist found a dozen Hawaiian rock carvings similar to letters of the ancient Brahmi alphabet and a number like Hindu religious symbols. Indian meaning of these three imprints: Five-spoke wheel, left, the symbol of the chariot wheel used as a weapon by the god Vishnu; six-spoke wheel, left, the symbol of the sun god (spokes representing the six seasons); character, below, the letter "V" in Brahmi, dating back to about the third century before the Christian era.

Oahu ecology study allowed

LIHUE—The State Board of Land and Natural Resources yesterday approved a proposed five-year ecological study of some 260 acres of land in the Mokuleia area of Oahu, to be conducted by the University of Hawaii's Harold L. Lyon Arboretum Hon. Adv.

The area is a portion of Pahole Gulch, in the Mokuleia and Makua-Keaau forest reserves. 5/11/74

Among various conditions on the permit to use the land, the board included a note that no buildings are to be constructed in the area.

STORIES IN PLANTS

Hawaiian Botanist's Book

THE pineapple and the bread-fruit are found all over the islands of Hawaii. But they are not indigenous. Therefore, how did they get there? They seem to have been there before Europeans settled in, at the beginning of last century.

That is only one of scores of intriguing problems discussed in "Plants of Hawaii National Park", by Otto Degener, of Honolulu; who is famous throughout the South Seas as a botanist. He has spent a good deal of time in Fiji and Samoa.

In spite of its unimaginative name and unattractive cover, this book is written by a man who really can make nature study as fascinating and interesting as is should be; and the compilation, while no doubt of value to the scientist, is readable from cover to cover by the non-scientist.

The section on coconut palms, for example, does full justice to the world's most interesting tree. The author describes not only the innumerable uses of the coconut palm, but also its origin. He rejects the theory that it came from Africa and Madagascar, via the Orient—following, it would seem, the track of the supposed Polynesian migrations.

There is also the fascinating story of the taro (or kalo, or dalo) that root which is a staple foodstuff throughout Oceania, and which appears to have originated in the East Indies, and been distributed all over the Pacific Islands by the wandering Polynesians. Incidentally, Mr. Degener, in his study of Hawaiian plants, finds plenty of evidence that the Polynesians reached Hawaii via Tahiti.

from injury by insects and herbivorous animals? If not, put your tongue against the cut stem of an old-type taro that has not yet been boiled. The new-style taro, introduced from Japan in recent years, has not got that natural protection, and can be eaten raw.

Mr. Degener, in this copiously illustrated book of 300 pages, deals also with birds, insects, native customs—with everything, in fact, that makes the Islands interesting to the visitor from the temperate zones. But, written so carefully and authoritatively, it is of interest also to the salted dweller in the Islands: the old-timer, no matter how long he has been in Oceania, can always learn something new about plants, insects, birds and native customs.

The index of plant and bird names should be most valuable, because so much of what is found in Hawaii is found also in other Pacific Islands.

The book was printed and published in United States, and copies are not available in Sterling areas. Copies may be obtained, for 2½ dollars, from the author, Mr. Otto Degener, Waialua, Oahu, Hawaii.

VANDERBILT

Just as every Hawaiian god or goddess maintained a rightful station in the outer world, so also did he or she retain the prescribed number of kapus. The word "kapu," when used in reference to the royalty, or alii, meant sacred. It was often rather tangled up with that strange supernatural power known as mana. However, the kapu system, as it affected the Hawaiian people as a whole, was actually a set of tradition-bound laws much like our own legal rules of today. Though in terms of values they reached right up from the relationship between the common people and their ruling chief, to that with their many gods, most of these kapus were well-known to the fisherman and the farmers alike, and there was little chance of their being violated voluntarily.

It is happy for the Hawaiians that they had, from the lowliest taro patch worker to the members of the alii, this clear knowledge of the more common of their laws. The usual penalty for violation of a kapu was death. . .in any of several forms. Burning to death, stoning and strangling were all made good use of, but most popular seems to have been merely a good clout over the head with a club. Prominently mentioned by earliest historians is beheading, but inasmuch as the Hawaiians were without metals at this time, and no matter how finely tooled a stone-axe might be it hardly seems like the right instrument for the job, we must dismiss this as one of the strictly native forms of punishment. 3/13/55

* * * *

While on the subject of the early Hawaiian law, or kapu system, it must not be overlooked that owing to the constantly increasing number of new gods and goddesses of varying rank, which these people and their priests created on the spur of the moment, it finally became as difficult to keep up with the new kapus as it was with the new gods. While these gods themselves were supposed to actually punish un-

A mock orange tree.—Photo by Bob Young.

THE CREPE GARDENIAS (which are not ardenias at all, but are related to plume-ias) make stunning small trees in the arden or on the condominium lanai, and ey bloom 12 months of the year with single r double white night-scented flowers. The repe gardenias are about 15 to 18 feet in eight, evergreen, easily pruned, have dark strous foliage, and are native to the north-rn parts of India. They are quite happy up the valleys, or even at the beach if they ave protection from the direct salt winds nd spray.

Consider, too, the allspice tree, evergreen, ith olive-green leaves, masses of cream-olored flowers, and purplish fruits. The ruits, picked green, may be dried, and are hen the allspice which you can use for your ickles or pumpkin pies. The smooth mottled runk and the handsome oval crown to 30 eet or so, make this tree from the Carib-ean and Central America a must for the mall contained garden.

IF YOU LIKE the sound of the allspice, hen you will also have a hankering for the ay-rum tree which is very closely related nd comes from the same part of the world. he bay-rum tree has a more weeping type f growth than the allspice which has more ree branching. It is the essential oil from he leaves which is used to make a familiar having lotion.

If you are interested in a further discus-ion of trees for the average-sized garden, I ope that you will let me know.

Happy New Year, and all the best in 1975.

WHAT'S MORE, for the first time, public officials found to be withholding information illegally may be subject to punishment. Before the amendments, the law provided punishment only in the event that personnel disclosed trade secrets.

The Freedom of Information Act is generally viewed as a law to aid reporters — so it may astound you to learn that the law has been cited most often by businesses in requests for data given to the government by competitors and for notices of regulatory agency investigations and actions.

In fact, under the FOIA law to date, business has made three times as many inquiries as journalists, public interest law firms and scholars combined! Now, the new revisions underscore your rights to obtain basic and useful government information on data you pay your public agencies to gather — ranging from the conditions of nursing homes to bids for public contracts of vital interest to you.

The 1966 law has not been radically altered. But loopholes which public agencies and officials have abused in their efforts to maintain a shield of secrecy around many of their decisions and operations are being closed

ONE LOOPHOLE: Previously, government agencies could turn down your requets forinformation merely because you didn't know the exact title or document number of the material you wanted. A member of one public interest group, for instance, asked the Department of Agriculture for a report on the safety problems of handling pesticides. He was told that his request was not specific enough, so he asked to see the department's index in order to submit a more detailed request. The agency's next excuse was that the indexes were interagency memoranda and therefore, exempt under the 1966 law.

To avoid this sort of bureaucratic evasion, the revised law now stipulates that public agencies must distribute up-to-date indexes of previously unpublished records — and documents not indexed must be released if your request is reasonably specific.

As of 1975, you, an ordinary consumer or small businessman, seeking classified data from the government may petition a federal judge and ask him to examine the requested material privately. The judge then will decide whether access to the information should remain restricted or be extended to you, the public. Until now, judges have had this authority only in criminal cases. Honolulu.

Also beginning this year, government agencies no longer will be able to stall your queries — as individual citizens, public interest groups, private lobbies, professors, journalists — by exhausting you with administrative procedures until your need for the requested information becomes moot or your financial resources run out. Consumers Union, for instance, waited 10 months before obtaining material it requested on the prices of hearing aids. 1975

But under the newly enacted amendments to the Freedom of Information Act — which became law over the objections of President Ford and virtually every government agency — you must receive a reply to your inquiry within 10 working days.

If an agency denies your request for material and you appeal, upper-level bureaucrats have 20 days in which to give you a second ruling. If the agency still opposes your request for material and you appeal under the law's previous provisions, you are entitled to file a complaint in a U.S. District Court. The governmen agency then must prove that the information you seek falls into such exempt categories as medical reports, trade secrets, internal agency rules, classified data.

The law also has been expanded to include government owned or controlled corporations, such as the Postal Service, the Office of Telecommunications Policy, the Office of Management and Budget. All of these and other federal agencies must report annually to the House and Senate on their record of compliance with the law.

For more guidance on how to obtain government information, send for "You're Entitled to Know Your Rights under the Freedom of Information Act" (American Civil Liberties Union, 20 East 40 St., New York, N.Y. 10016. Price: 25 cents).

The Twenties
June-July 1979

Otto Degener '22 was recently commended in a resolution adopted by the Hawaii state senate for his contribution to the preservation and enhancement of Hawaii's wildlife resources. The resolution says that Degener, a botanist, taxonomist, conservationist, author, and advocate, has "stood alone for most of the past 50 years as a voice in the wilderness, steadily appealing year after year for recognition of Hawaii's botanical wonders and conservation of their habitats, having no peer in his unshakeable, deep commitment to Hawaii's natural environment."

The Alumnus, Univ. of Mass., Amherst

mental trees. HON Star-Bull. 12/29/74

Here are some suggested trees, attractive because of their flowers, foliage, or fruit, and suitable for the not-too-large gardens.

From the Caribbean and Central America, the lignum vitae, is a slow growing, multiple-trunked, evergreen which has light green leaves, lavender-blue flowers and attractive orange colored fruits which open up to expose bright red seeds. After many years the eventual height is about 25 feet in Hawaii. This desirable tree is equally at home at Wailupe Peninsula, Diamond Head, in Nuuanu Valley, or in a container on your open lanai. 12/29/74 H.T. Ahue

In the United States there are at least three totally unrelated plants called mock orange. The one I want to recommend is a dark-leaved evergreen that grows to about 25 feet. It is usually grown as a hedge and has fragrant white flowers and little orange fruits.

THE MOCK ORANGE of Hawaii, like its orange and lemon cousins, comes from Asia —from India to Indonesia and the Southern Philippines. It is slow reaching tree form, but the outstanding tree which results is well worth the wait.

If you live in an apartment or a condominium, why not plant mock orange as a screening hedge up there on the 19th floor, or why not use it as a small tubbed shade tree?

The mock orange of California, which is a native of Eastern China and Japan, is referred to in Hawaii by its scientific name, pittosporum. The only vague similarity between these two very different mock orange plants is that they both have delightfully fragrant white flowers. Pittosporum only flowers in the cooler uplands of Hawaii.

The pittosporum has for its species name tobira, which is its common name in Japan. Two forms of this pittosporum are commonly grown in Hawaii as hedges or as small 20-to-25-foot trees. One has oval dark green leaves, the other has oval gray-green and white variegated foliage. Both of these types can be small shade trees in your garden, or potted plants on your apartment lanai.

AND THERE ARE three other pittosporums which can be highly recommended as small shade trees. One is gradually being used more and more as a street tree—pittosporum pentrandrum. This dainty 20-to-25-foot tree with light green pointed leaves and masses of tiny white flowers followed by clusters of orange fruits, was introduced to Hawaii from the Philippines by Foster Botanic Garden.

Another is pittosporum nadarivatuense, which was brought to Hawaii from Nadarivatu, a mountainous area on the island of Vitu Levu, Fiji. Donald Anderson, retired horticulturist at the University of Hawaii's H.L. Lyon Arboretum, collected seeds of this beautiful 20-foot-tree, with its masses of fragrant white flowers, just 15 years ago. This pittosporum is very well adapted to dry areas and to the cooler damper valleys, and has already seeded profusely in Hawaii. It's readily available to Island gardeners.

The last of the pittosporums is one which should be no stranger to you, because it is a native of the Hawaiian Islands. This is the ho'awa, pittosporum hosmeri var. longifolium, a 20 feet evergreen, dark foliaged attractive tree for your enclosed patio area, whether it is in Kaimuki, Wailuku, Lawai Kai, or Kailua, Kona. The odd lumpy fruits of the ho'awa open up to expose sticky seeds which are part of the diet of the Hawaiian crow, the 'alala.

WAILUKU — Both the State and Maui County have stepped in to assist Maui Norfolk pine tree growers who have had difficulty selling their Christmas trees in the State. Star-Bull. 12/27/74

The County has taken 500 trees and the State, 1,000 trees from members of the Maui Norfolk Pine Growers Association to be distributed generally among State and County facilities. 12/27/74

MAUI COUNTY WILL sell about 100 of the trees to community groups too, according to County information officer, Arthur Fernandez.

The other trees were distributed to various offices and facilities in the County, including schools and fire and police stations.

The support of the Norfolk pine growers is "a matter of continuation of the growing," Fernandez said yesterday. He said the County resource conservation and development project has encouraged the development of Norfolk pine growing as an industry.

THUS, HE SAID, the County used $2,000 in economic development funds to purchase the trees. The State paid $4,000 for 1,000 trees, he said.

"They did not have a good marketing program to start with," Fernandez said of the Maui growers. "With a good marketing program, they could have sold all of it easily."

Fernandez noted that a Norfolk pine grower jeopardized the tree growing program five years ago by selling substandard trees to a major Honolulu market.

SINCE THEN, markets in Honolulu have been reluctant to handle more of the Island-grown trees instead of the more familiar and more plentiful spruce trees imported from the Mainaand.

Thus, the Maui growers— producing about 6,000 trees this year and anticipating up to 28,900 trees ready for cutting within three years — faced a major problem in selling their trees during the 1974 holiday season.

Besides the 6,000 trees cut on Maui, about 13,500 Norfolk pines are available from growers on the Big Island.

Three weeks ago, Douglas MacCluer of the Maui association pleaded with former State board of agriculture chairman Frederick Erskine for assistance in marketing the trees.

At the time, Erskine said the marketing would need to be handled by the State Department of Planning and Economic Development.

I know that it is always a matter of choice, but sometimes I wonder why a large tree is planted in an area where a much smaller tree belongs. Most of our home properties are around 6,000 to 8,000 square feet, and there just isn't room for a whole botanical garden of various plants, especially monu-

Peer Review: NSF Faces Changes, the Question Is How Extensive

When the House Science and Technology Committee's oversight hearings on the National Science Foundation's (NSF's) peer review system ended in July (*Science*, 15 August) there were no signs that the congressmen were appalled by what they had learned. Neither, however, did they give NSF a resounding vote of confidence on peer review.

The hearings do seem to have convinced subcommittee chairman James W. Symington (D-Mo.) and his colleagues that peer review raises complicated questions and that changing the system requires a deliberate approach. The hearings record is expected to emerge from the Government Printing Office in the next few weeks and a report should follow, indicating the general lines of corrective action—if any—the panel will recommend. The likely timetable would put any such action in the next cycle of authorization legislation, which will begin after the Congress convenes for its second session in January.

Since the end of the hearings, however,

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several things have happened to keep the peer review pot boiling:

• Most recently, NSF's constant critic in the House, Representative John B. Conlan (R-Ariz.) has introduced legislation (H.R. 9892) which would drastically revise the NSF review system and grants management generally. Senator Jesse Helms (R-N.C.) has introduced a generally similar version (S. 2427) in the Senate.

• In mid-September, NSF got what amounted to a negative peer review of its peer review system from Philip Handler, president of the National Academy of Sciences (NAS). Handler suggested that NSF adopt a review system which relies "systematically" on advisory panels to replace the present mixed system, which uses both advisory panels and mail reviews from individual scientists (*Science*, 6 June).

NSF is taking a number of internal actions aimed at improving the present peer review system. The effect, essentially, would be to amplify the array of checks and balances in the system.

At NSF's policy-making body, the National Science Board (NSB), which is considering the major policy question of whether to make names of reviewers available in certain circumstances, has decided to conduct an opinion survey to elicit a more comprehensive answer to the question of how scientists react to a possible change in NSF policies on confidentiality.

In a statement accompanying the introduction of his bill, which he read into the *Congressional Record* on 29 September, Conlan said that "The main purpose of this bill is to establish research award and management system at the Foundation which is fair, open and accountable to the scientific community and to the Congress."

He called the present peer review system "secret and arbitrary" and charged that "Recent statistics show that NSF funding is restricted primarily to a small group of preferred institutions in a few states, with special preference to an elite corps of academic institutions heavily represented on the Foundation's advisory committees."

Conlan's criticism of peer review seems to have been triggered by NSF's refusal to comply with his requests for peer review material and the identification of reviewers in connection with NSF-funded social science course improvement projects. Conlan's bill calls for establishment of a "Peer Review Office" in NSF to administer the

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peer review system, which would compile the sort of detailed information in which Conlan is interested and make it available to Congress. The office, for example, would maintain an elaborate log on applications, containing details of proposals, reviewers, and foundation action. The log would make it possible to trace relationships between applicants and reviewers more readily.

The bill also requires that grant applicants be given access to verbatim reviews and the identities of reviewers of their proposals. A formal appeals mechanism would be set up. NSF would have to carry out a "needs assessment" on research projects and corriculum development projects before funding was approved. Under the provisions of the bill, NSB would get its own small professional staff, a move clearly designed to lessen its dependence on regular NSF staff.

Conlan's passion to reduce the influence of NSF program managers is evident in many sections of the bill and is reflected most clearly in the detailed provisions written into the section on the peer review system. For example, the bill specifies that each proposal submitted to the foundation have at least five reviewers, that the program officer select no more than 50 percent of reviewers and the applicant 20 percent, and that the rest be selected by random sample from an approved list.

In arguing for disclosure of reviewer identities in his statement, Conlan made the following allusion to testimony at the July hearings.

The National Science Board recently empan-

study the whole question of NSF peer review and make recommendations to the Board.

Dr. Rice testified before our recent Subcommittee hearings that it was the *unanimous* recommendation of the Task Force that signed verbatim peer reviews be made available upon request to grant applicants.

Dr. Rice testified that the Task Force carefully studied arguments on both sides of the confidentiality issue before recommending an open peer review system to the full National Science Board.

The Task Force unanimously rejected arguments that only confidentiality in the peer review process encourages candor in peer review evaluations. Its members agreed, instead, that qualified reviewers can be relied upon to participate and be candid and straightforward in their evaluations, and that openness would result in more responsible, objective reviews with fewer superficial or personality-based criticisms.

Conlan's recapitulation differs substantially from Rice's account of his testimony before the Symington subcommittee. Rice says that he summarized arguments both for and against identification of reviewers. The hearings followed the decision by NSB to change NSF policy and make verbatim reviews available to applicants. NSB, however, decided to give further consideration to the question of also changing policy to identify reviewers. Rice says that the task force had been asked to frame a proposal on peer review changes for the board to discuss and the task force voted to propose that the board take both steps at once. He says that the task force members, with one exception, voted in support of the board action.

Rice described the prevailing attitude in the task force as a "disposition toward more openness in the process" but "consistent with an equitable and effective system." As for the question of identifying reviewers, he said there was "a lot of sentiment to think about it seriously" before taking action.

To acquire more complete information, the task force is mounting a survey on the subject. A questionnaire is being designed and a final decision has not been made on whether a mail or telephone survey will be used. In either case, says Rice, the plan is

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to poll a "substantial sample" drawn from among both NSF's reviewers and applicants. The task force hopes to complete the survey by the end of the year.

Handler's recommendation on peer review came in a statement intended for inclusion in the hearings record but was submitted in mid-September because Handler was out of town when the hearings were held. He said he was basing his suggestions not only on his observations of the working of NSF—Handler was a member of the NSB from 1962 to 1974 and served as chairman from 1966 to 1970—but also on extensive experience as a participant in the review system of the National Institutes of Health (NIH). It is the NIH model, in fact, which he commends to NSF. His key point is as follows:

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With flagrant corruption during President Nixon's tenure in Washington, we must ever guard against Pysenko's use of U.S. Natural Sciences

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native procedures and also meet various of the criticisms that have been directed at present procedures would be to rely, systematically, on the use of formally constituted advisory panels as the principal mechanism for rating the merit of individual research proposals. As you have learned in all but a few areas, the NSF presently relies largely on a system of mail reviews performed by highly competent reviewers selected, ad hoc, by the appropriate agency program manager. It is immediately relevant to note that the National Institutes of Health, which manage the allocation of 3 or 4 times as much money for support of basic and applied research, relies entirely upon study sections (convened advisory panels) for the review of those research proposals to be supported by grants and is under great pressure to use the same mechanism for the small fraction of all its funds utilized to support research activities performed under contract.

The personal interactions among a group of scientific experts who meet, formally, several times each year, to review research proposals offer a number of unique advantages as compared with *ex parte* criticisms by individual reviewers.

As for NSF director H. Guyford Stever's reaction to Handler's proposal, NSF sources say that the conversion to panel review has already been discussed, and it is "possible that NSF may go in that direction." Stever and NSB members, who would figure in a policy decision, are concerned that the agency does not commit itself to a single, rigid review mechanism which might limit the agency's flexibility in dealing with different types of projects.

Within NSF, a good deal of reformist activity is in progress. The foundation is in the midst of a major review of the NSF's social sciences program. Agency officials are now pondering whether other disciplinary areas should receive such examination, which goes far beyond the peer review issue.

Stever has ordered that each NSF directorate establish a formalized grant review board of its own. The main feature of the board is the involvement of foundation staff from outside the directorate concerned. For example, the science education directorate, the most recent directorate to set up a review board, will have four members from other directorates on its six-member review board. The main business of the boards is to look critically at project awards and declinations, but the boards are also expected to pay attention to the directorate's requests for proposals, program solicitations, and announcements. The idea of the review board started in NSF's RANN (Research Applied to National Needs) program and is said to have permitted a more unified oversight of that program.

NSF grants and contracts people have been told to give more intensive consideration to grant titles and to come up with titles that are more informative and less likely to incite the critics' risibilities. It was "silly" titles, after all, which attracted attention and started NSF's current round of troubles.

Longer Term Effort

A more long-term effort is under way to [illegible] audit" of the grants award process. No decision has been made on what form it will take. Examination of the handling of projects randomly chosen might be instituted. There is some interest in using the approach taken in last spring's special crash study on selected science curriculum projects carried out when congressional criticism of behavioral science courses, in particular, was mounting. In the special study, scientific, financial, and management expertise was brought to bear, with results foundation officials thought helpful.

Does all this activity portend radical change in the peer review process? Conlan has succeeded in calling attention to peer review, which is now under the most searching scrutiny it has ever received from Congress. Conlan's bill would certainly open up peer review, but would complicate it considerably and require major bureaucratic reinforcements to handle the new mechanics.

There are few signs that many of Conlan's colleagues feel that the system is as deeply flawed as he does; there seems to be no rush to cosponsor the bill in either House or Senate. By introducing the measure even before the hearings and report are out, Conlan, in the congressional perspective, could appear to be taking unilateral, premature action which may not help him much when the bill comes to be considered in committee.

At this point, the odds seem to be against comprehensive change in the peer review system of the sort Conlan is calling for. At the same time, NSF is clearly on notice that it has to do better in managing the system and that Congress is watching.

—JOHN WALSH

harvesting of hapu'u

Berlin,

to be subject of land board hearing

The state Board of Land and Natural Resources will schedule a public hearing in the future on a request to harvest hapu'u (tree fern) on 300 additional acres of Ka'u land owned by Bishop Estate.

According to William Stayton, Kona land agent for the Bishop Estate, Niu Nursery is currently leasing 150 acres of estate land to harvest the hapu'u, but wants to expand its operations.

But the request has run into some opposition from noted biologists Drs. Otto and Isa Degener, authors of "Flora Hawaiiensis."

The Degeners have written a letter to Land Board Chairman William Thompson, urging that an environmental impact study be performed to determine the effect of the harvesting on the forest land.

The hapu'u helps regenerate the underground water supply through fog drip and provides a home for many native birds and insects, according to the Degeners' letter.

"Most of these trees were already old before Kamehameha I was born; some very likely developed as sporelings about the time of the birth of Christ. They are Methuselahs," the Degeners wrote.

The area proposed for the harvesting also harbors several rare plants that should be protected, they said, including the naio or false sandalwood tree, a Tetrasplasandra tree that is new to science, and the rare fern, Toppingia, they wrote.

According to Stayton, Niu Nursery has had a license to harvest the fern tree for several years. The nursery harvests the logs for planting orchids, anthuriums and other plants, he said.

Natur

KAENA POINT, the farthest tip of Oahu, looks dry and barren, a characteristic mentioned in Hawaiian chants.

Those who have been there know, however, that it is an interesting place because of legends connected with it, archaeology, geology, good fishing in nearby waters, and interesting plants.

The features of the area are described in a recently published book, "A Nature Walk to Ka'ena Point" by Edward Arrigoni, a teacher of marine science courses at Kaiser High School.

The book is an abridgement of a booklet published in 1977 under funding from the Office of Sea Grant and the Hawaii Committee for the Humanities.

ARRIGONI, WHO also teaches field trip technique courses at the University of Hawaii, has had considerable experience leading adults and children on field trips; he emphasizes safety factors as well as how to make field trips interesting.

The book is written in simple language, easy to understand, has sketches by Maria E. Tseu, a few color photographs, and plant drawings from "Flora Hawaiiensis", the monumental series of books by Otto and Isa Degener.

The book tells some of the history of the area, gives some information on geology, archaeology, legends, and about marine algae, invertebrates, fish and birds.

It describes the three-mile hike to the point, either from Mokuleia or Keawaula (Yokohama Beach) beyond Makaha.

THE BULK of the book is taken up with descriptions of coastal plants, their range and use. For instance, it describes how ma'o, or Hawaiian cotton was bred with commercial cotton to get a cotton that could better resist fungus.

One of the plants mentioned is the endemic ohai, (*Sesbania tomentosa*), whose Oahu range is restricted to Kaena Point.

The ohai has gray-green leaves and orange-red flowers. It grows into a small tree, stunted by the dryness, heat and wind, thus becoming a natural bonsai.

THE DEGENERS have written at greater length on the ohai in the May issue of Phytologia, a botanical magazine.

Otto Degener says the ohai, a member of the pea family, was quite common in the 1920s when he first collected it but that it is now on the verge of extinction. Motorcycle traffic has damaged many of the plants at Kaena Point.

The Degeners say that close relatives of the Oahu ohai are found on Neighbor Islands and give descriptions of the specimens on these islands.

THE DEGENERS also bring up the damage to plant life caused by feral goats on Kahoolawe and offer an interesting suggestion for biological control of the goats.

This is to take lions from the zoo and put them on Kahoolawe to handle the goat problem.

The plan, they say, "would not only reestablish its former dry forest

Harry Whitten

but save it from further wind erosion. The cost of such vacations for these genial, giant pussycats would be trivial as only a helicopter and a tranquilizer gun would be necessary to end it."

This would assume that the lions can eat goats faster than the goats can breed.

A NATURE WALK TO KA'ENA POINT. By Edward Arrigoni. 159 pages. Topgallant Publishing Co., Ltd.

Before Honolulu Zoo patrons get concerned about the possibility of the lions being exiled to Kahoolawe, the Degeners state their suggestion is offered in facetious vein.

RARE PLANT—This Hawaiian "sweet pea" was found on Keauhou Ranch and photographed in 1978.

Ka'u plant commemorated on upcoming postage stamp

Hawaii Tribune-Herald, Sunday, June 3, 1979—

An endangered Hawaiian plant, "Vicia menziesii," found only in the Ka'u district, will be honored nationally on a commemorative 15-cent postage stamp to go on sale June 8.

The Hawaiian name for this rare native plant has been lost since the arrival of continental man in the islands. "Vicia" was first seen by a western naturalist, Archibald Menzies, in 1794 in the upper Kapapala forest in Ka'u.

Later botanists found it on only four occasions in upper Mauna Loa forests despite extensive searching.

It was considered extinct for 50 years until Dr. Wayne Gagne of the Bishop Museum rediscovered a clump in the Kilauea Forest Reserve above 5,000 feet elevation.

This commemorative stamp will be issued on a sheet of stamps featuring four endangered U.S. plants; three from mainland states and the fourth being this "Vicia" or wild broad bean that is a relative of the garden sweet pea.

The 'ohi'a-koa forests of upper Keauhou Ranch and Kilauea forest are its last remaining habitat, shared with four endangered species of Hawaiian forest birds.

The survival of this attractive climbing vine with colorful flowers is threatened by logging, cattle grazing and wild pigs. "Vicia" is the only Hawaiian plant so far to be given official federal and state recognition of its endangered

Otto Degener '23 Reviews Book By Crawford On Hawaiian Crops

"HAWAII'S CROP PARADE" by D. L. Crawford. The Advertiser Publishing Co. $2.50. Review by Otto Degener, M.S., Univ. of Hawaii '23; Faculty, Univ. of Hawaii 1925-27.

When a trained scientist, a world-acknowledged authority on Hawaiian Psyllidae or Jumping Plant Lice, blossoms forth with a book on plants, both entomologists and botanists prick up their ears. The entomologists must regret that one of their learned members has forsaken their fold for greener pastures, while the botanists must welcome a valuable neophyte to a study sorely neglected in Hawaii. When the self-same author turns out to be no less a personage than the president of the University of Hawaii, because of the prestige of the position, not only the scientists but also the layman will take notice.

President David L. Crawford in "Hawaii's Crop Parade" has given us a volume that, after some changes, deserves a place in the library beside Neal & Metzger's "In Honolulu Gardens" and Kuck and Tongg's "The Tropical Garden." Like these two popular garden books it deals chiefly with the well-known or important plants of the Islands, not with the obscure ones that bloom unseen in our mountain recesses. Unlike these books, however, it concentrates on "a review of useful products derived from the soil in the Hawaiian Islands, past and present," and is not concerned with ornamental plants. After devoting 31 pages to "Agricultural Prospecting" and a very readable chapter to the "Historical Outline of Agriculture in Hawaii," the author parades various crops before us in alphabetical order. On the first page stand, for instance, Abaca, Acacia, Akala, Alcohol, while on succeeding pages march such subjects as Avocado, Bees and Beekeeping, Coffee, Dairying, Eucalyptus, Frogs, Goats, Horses, Indigo, Macadamia Nut, Ostrich, Pineapple, Sugar Cane, Taro, etc. This parade, after dealing with a good 300 distinct topics, ends on page 289 with Yard-Long Bean and Yerba Mate. The expected straggler, Zizyphus jujuba, has found his place among the Js.

At the modest sum at which "Hawaii's Crop Parade" can be procured, this work is evidently not a business venture in the literary field but the ripe result of a labor of love. It is largely a well-documented and attractively bound compilation, compact and not interspersed with troublesome maps and illustrations. Where such a large array of subjects is given, errors are apt to appear, and in this instance their number is generously large. The reader can, by the simple expedient of pasting several pages of ERRATA on the inner covers, have a very instructive reference work.

It is usually wisest for the successful entomologist to stick to his bugs no less than for the successful cobbler to stick to his last. According to the reviewer's belief, a book on crops to be worth while and safe for classroom use should be written by a trained botanist or agriculturist, hardly by a university president perhaps distraught with executive duties. From a perusal of the plant names alone, it is perhaps fortunate for our University that "Hawaii's Crop Parade" is not an official document. Should the author retire from administrative duties this year to return to teaching, the reviewer suggests that he go back to insects, his first love, and not go back to plants.

DR. OTTO DEGENER

West Hawaii Today, Friday, May 25, 1979—17

Dr. Otto Degener, author of eight books on Hawaii's native plant life, has been commended by the Hawaii State Legislature for "his contribution to the preservation and enhancement of Hawaii's wildlife resources."

Degener, presently living in the volcano area, has devoted more than a half-century to the study, research and compiling of information concerning the preservation of Hawaii's natural resources, according to the senate resolution.

"Flora Hawaiiensis" is a seven book reference to many plants found in Hawaii. The book was written by Degener especially for use by professional botanists. It is published in loose leaf form so that new discoveries can be added to the booklets. Degener and his wife, who assisted him in collecting the material for the books, have provided for a trust to continue the "Flora" series after their deaths.

Degener also authored and included many of his illustrations in "Plants of Hawaii National Parks Illustrative of Plants and Customs of the South Seas."

The Senate resolution stated that the people of Hawaii "owe a bottom-line debt of gratitude to Dr. Degener for his lifetime perseverance in relating humankind to the natural environment upon which we ultimately depend for survival as a species."

Degener, who is celebrating his 80 birthday this year, will receive a copy of the resolution from the State Legislature whose members feel that "this outstanding service of Dr. Otto Degener in fostering the preservation of community's precious

(5/23/1844 - 9/22/1916) born in Braunschweig, Hannover. A merchant in the Orient for three years before emigrating to New York City to join an older brother in wholesale textile importing firm shortly after U.S. Civil War when cotton mills and plantations had been destroyed in Northern forces. He was also partner of the unsuccessful Unicorn Silk Mill in Chatauqua, N.Y.

(6/23/1863 - 9/11/1920), born in Mantua during brief time it was Austrian. Her father Cavalry Officer Kaempf of Vienna was stationed with his troops during a campaign in the Castle Franichsfeld 30 miles from Graz, Austria. He married the daughter of the owner of the Estate. She traveled to Mantua, recently conquered from Italy, to be near her husband. Here Marie mother of Otto, was born. Shortly thereafter, Mantua was returned to Italy in the Franichs-peace treaty. Franichsfeld Estate since World War II, is in Yugoslavia, and the Castle is now a somewhat dilapidated Senior Citizens' Home.

Now you know why annually good collections of Degener's herb. specimens are located in Graz & Wien

Genetic Roots!

member, Hawaiian Sugar Planters' Association, Honolulu Chamber of Commerce, Hawaiian Board of Missions (past President), Social Science Association, University Club.

Dr. Dean was graduated from the Dedham, Massachusetts, High School (1896), Harvard University (A.B. 1900) and Yale University (Ph.D. 1902). For twelve years he was an assistant, instructor and assistant professor at Yale. In addition to his duties on the Yale faculty, Dr. Dean was research assistant for the Carnegie Institution for one year, and chief of the section of wood chemistry of the United States Forest Service for several years.

Arriving in Honolulu on June 15, 1914, to accept the presidency of the College of Hawaii, Dr. Dean served in that capacity after the institution became the University of Hawaii on July 1, 1920, until February, 1927, when he resigned to devote full time to the directorship of the Experiment Station of the Association of Hawaiian Pineapple Canners which he had been carrying for several years in addition to the presidency of the University. In July, 1930, he resigned his position with the Experiment Station and joined the staff of Alexander & Baldwin, Ltd.

Intensely interested in chemical research, one of the important achievements of Dr. Dean at the University of Hawaii was the discovery of a laboratory method of refining chaulmoogra oil into the specific used as a palliative in the treatment of leprosy. Physicians for many years had known of the value of chaulmoogra oil in the treatment of leprosy, but in its crude form it was of comparatively little value. The problem was taken to the university laboratory, where a refining process was developed. During Dr. Dean's presidency, the University of Hawaii enjoyed a period of remarkable growth and increased prestige as an educational and scientific research center.

Dr. Dean's scientific accomplishments led to his selection by the large sugar and pineapple interests of the Territory as an associate in the scientific advancement of the industries. As Vice President of Alexander & Baldwin, Ltd., Dr. Dean divides his attention between the two major industries of the Territory, acting as an interpreter between the scientific and business ends of the enterprises. He is active both in the Hawaiian Sugar Planters' Association and the Pineapple Producers' Cooperative Association.

Dr. Dean was appointed a member of the territorial Board of Commissioners of Public Instruction in 1932 and in 1935 was named Chairman of the board by Governor Joseph B. Poindexter.

A splendid man we would never conspire with a caste Gregorian as his Pres. Crawford. Both Dean & Crawford were Methodist sons. What a difference!

Degener, Otto: Collaborator in Hawaiian Botany, New York Botanical Garden, Bronx Park.

Born in Orange, New Jersey, May 13, 1899, son of William and Marie Ludovica (Kaempf von Baldenstein) Degener; Fellow, American Association for the Advancement of Science; member, National Parks Association, Torrey Botanical Club, American Museum of Natural History, Hawaiian Botanical Society, Hawaiian Academy of Sciences.

Mr. Degener was educated at Trinity School, New York City; Collegiate School, New York City (1918); Massachusetts State College, Amherst (B.S. 1922), University of Hawaii (M.S. 1923), Woods Hole, Massachusetts (post-graduate study 1924), New York Botanical Garden and Columbia University (1925).

Mr. Degener first visited Hawaii in 1922 as a tourist and a student of tropical botany. He liked the Islands so well that he decided to make Honolulu his home. After a year as an assistant Botanist for Massachusetts State College (1924), he was appointed Botanist for the University of Hawaii, serving in this capacity from 1925 to 1927. In 1929 he was a Naturalist at Hawaii National Park.

Mr. Degener is the author of several works on botany printed by The Honolulu Star-Bulletin. These include "Plants of Hawaii National Park, with Descriptions of Ancient Hawaiian Customs and an Introduction to the Geologic History of the Islands" (1930), "Flora Hawaiiensis or New Illus-

trated Flora of the Hawaiian Islands" (Book I, 1933; Book II, 1935). He has also written numerous technical papers, both alone and in collaboration with other scientists.

Mr. Degener is a recognized authority on Hawaiian flora and has amassed the largest collection of Hawaiian botanical specimens, estimated to exceed 40,000. These are stored in Honolulu and at the New York Botanical Garden, and duplicates have been widely distributed to botanical institutions in Europe and continental America. These plants constitute working material for continued research and writing by Mr. Degener on Hawaiian floras. Plants belonging to various groups have been named in his honor by mainland botanists.

The New York Botanical Garden

Newsletter

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In This Issue

Books

Dr. Degener Gets Things Off His Chest

IN 1959 G. C. RUHLE published a 94-page *Haleakala Guide* with a color photograph of the Silversword, native to the Island of Maui. Now appears a companion booklet of 72 pages, *Waimea Canyon and Kokee, A Nature Guide* (Kauai Publishing Co., Lihue, Hawaii), with a color photograph of the Kauai Silversword (*Wilkesia gymnoxiphium*). The author is Thelma A. Hadley, her sponsor the Hui O Laka.

This attractive booklet does not limit itself strictly to northwest Kauai but wisely displays an informative map of the entire island. It describes climate, geology, soil and topography, trails, legends, birds, mammals and, above all, plants. There are 42 half tones, that of mist drifts at Kalalau Lookout being particularly lovely.

As in so many publications, typographical errors have not been weeded out. Though it was permissible in the olden days to spell the name either "Honoruru" or "Honolulu," it is not now permissible to spell "crutches" for "clutches." What raises the hackles of an old biologist like the reviewer, however, is the word "animal" used for "mammal" on page 3, "berry" used for "capsule" on page 39, and "trees and plants" used as a heading on page 9, as though a tree were not a plant! "Trees, shrubs and herbs" could have been used or, simply, "Plants." The "broad-leaved cactus" is *Opuntia megacantha*, a plant with tiny, caducous, awl-shaped leaves and a broadened stem. The *pukiawe* belongs to the Epacris Family, while the *ukiuki* belongs to the Lily Family. The Silversword is not limited to Maui. David Douglas, before his murder on the slopes of Mauna Kea, used dried stalks of this plant as firewood. Not six native lobelia are peculiar to Kauai, as stated on page 30, but well over 30;

Distinguished Service Awards

The New York Botanical Garden presented its Distinguished Service Awards this year to Drs. Otto and Isa Degener and Mr. Frank J. Anderson.

The Degeners, co-authors of *Flora Hawaiiensis or New Illustrated Flora of the Hawaiian Islands*, were cited by the Board of Managers for their continuing contributions, through botany, to botanical science in general and to The New York Botanical Garden in particular. As our Collaborators in Hawaiian Botany they have greatly enriched our Herbarium holdings with their field collections. For decades they have compiled documentation — and worked to preserve — Hawaii's magnificent but severely stressed wildlife resources.

Mr. Anderson, a former editor of this newsletter, is now Honorary Curator of Rare Books and Manuscripts. He was instrumental in the Garden's acquisition of one of its prize possessions, the earliest known medieval manuscript of the *Circa in stans*, the fountainhead of modern pharmacology and botany, which he is translating. One of his most recent publications is *An Illustrated History of the Herbals*, Columbia University Press, 1977. The citation noted that despite his official retirement from the Garden, the vast contributions he is making have by no means diminished and it spoke of the "personal and professional enrichment he has brought to all our lives."

Marc Seastrom for Carol & Mary

...mers

and the second paragraph of page 31 obviously applies to the Cyanea rather than to the *Dracaena*, better called *Pleomele*. *Zingiber* (not *Zingeber*) *zerumbet* is a ginger thought to be of ancient introduction by the Polynesians from the South Seas, and is probably about as native to the Hawaiian Islands as are Hawaiians themselves.

The author's account of man's stewardship of this wonderful region is most disheartening. With man's silly introduction of the passionflower that smothers native trees, the raspberry and tibouchina that crowd out native shrubs and herbs, the barn owl that is a veritable flying mongoose, the goat and mouflon that browse along dry cliffs and ledges, already subject to erosion without four-footed help, and the blacktailed deer that will devastate the endemic bog flora of Waialeale, man is wrecking within less than 200 years a flora that has taken 20 million years to perfect. Then, in this Age of the Bulldozer, man proudly slashes a road with his new toy through the endemic jungle from the end of the Kalalau Parking Area around the head of Kalalau Valley.

May the Lord have mercy on the poor souls who have contributed to the rape of Kauai's natural resources and beauty!

The present state of Kauai has stimulated in some quarters the current demand that the most scenic and interesting areas remaining of this island be placed under the jurisdiction of the National Park Service. Having observed the malignant changes about Waimea Canyon and Kokee since 1922 during protracted botanical expeditions, the reviewer feels it is too late to expect the federal government to pull the chestnuts out of the fire for the citizens of Hawaii Nei. Without a king's ransom, Kauai can never be brought back to a natural state within the standards required of a National Park. If the U.S. department of the interior has reasonable funds available for establishment of a National Park with outstanding Polynesian characteristics, it should concentrate on American Samoa, an area that resembles Kauai before the *haole* opened his Pandora's box of biological evils.

—*Dr. Otto Degener*
Author of "Flora Hawaiiensis"

Catholic Herald

Island Botanists Honored in Berlin

Sept. 28, 1979

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Dr. Otto Degener of Honolulu on Sept. 10 received the Willdenow Medal at the 300th Anniversary of the Founding of the Berlin Botanical Garden Museum from Dr. Peter Klotz, Senator for Science and Research for West Berlin, Germany. Degener began his study of Hawaiian plants practically full time in 1922 to the present. His wife, Dr. Iso Degener, joined him in the project in 1953. The original sets of plants collected were always donated to the New York Botanical Garden, an institution already known to this New Yorker as a child. Incidentally, the Degener's are staff members of this huge institution, residents in Hawaii nei and representing it there. The best duplicated set was sent as a gift year after year soon after collected to Berlin, and other sets to the Bishop Museum and elsewhere. Many of the specimens deposited in Berlin as early as 1922, were destroyed during aerial bombing by British aircraft during World War II. Some good duplicates luckily distributed to other institutions on loan escaped the holocaust, and are now back in Berlin.

The Degeners separately and jointly have published to date nine books and over 400 scientific articles about the Fiji and Hawaiian Archipelagoes. The Botanical World, with access to such publications often in international journals, is aghast at the wreckless extermination of Hawaii's peculiar international plant (and animal) treasures of inestimable value intellectually and for research. Furthermore, to enable Hawaiian tourism to continue to flourish, Hawaii nei must remain Hawaiian and not ~~open~~ competing tourist centers which foolishly cover their interesting lands with the usual gaudy but monotonous bougainvillea from Brazil, oleander from Greece, hibiscus from China, erythrina from Africa, and similiar exotic cultigens. Why come to Hawaii when you can see such plants nearer home?

The bestowal of the Willdenow Medal shows approval of the study of native Hawaiian plants, their collecting and preservation in museums before island population exterminates them, and the attempt to teach people conservation.

2/1st WILLDENOW MEDAL — Dr. Otto Degener, botanist and specialist in Hawaiian flora and fauna, received the Willdenow Medal from Dr. Peter Klotz. The medal honors Dr. Degener's contributions in botany to the various museums and botanical gardens of the world. The award was presented in West Berlin last week.

By Russ Lynch
Star-Bulletin Writer

2/22/77

For years there's been talk about the imminent demise of pineapple in Hawaii and the truth is that production in the Islands is down about 40 per cent from its peak in 1973-74.

Ten years ago there were eight pineapple companies in Hawaii and now there are three—Dole, Del Monte and Maui Land & Pineapple.

But there are encouraging signs nevertheless and the three who stayed are busily producing and packing the "fruit of kings." They believe the industry is stabilizing.

Nason E. Newport, president of the Pineapple Growers Association of Hawaii, speaks for the industry:

"We'll stay at the level we're at now in processed fruit and we have high hopes for increasing fresh fruit sales."

Newport's own company—he is manager of the Hawaii pineapple division of the Islands' biggest grower, Dole Co.—made bigger cutbacks than anyone else.

But the company is aggressively marketing fresh fruit on the Mainland, freighted by sea or zipped "jet fresh" in the cargo bellies of the giant 747s, and Dole is a very big producer by world standards.

Del Monte, although it has cut back altogether in Hawaii, has still to make its long-threatened pullout from Molokai, and the pullout seems to get further and further into the future.

Maui Pine, which cans under a number of labels, seems steady and makes a profit from pineapple.

All the companies are benefiting from higher prices.

"There's no secret the industry in the Islands is down from its peak 40 per cent at least," Newport said in an interview.

"The largest cutback was ours at Dole, followed by Del Monte and Maui Land & Pine.

"If growth is to come now it will come in the fresh fruit market," he said.

The problems of the industry are economic—soaring costs —in addition to competition from all types of canned fruits, particularly oranges, peaches and apples.

In the early 1970s, Newport explained, there was a worldwide peak in pineapple production. Domestic production in the United States increased too.

The result was too much pineapple on the market and a consequent drop in the price the product would fetch.

Just like Hawaii's problems with sugar, much of the competition came from low production cost countries who could afford to sell their product cheaper.

The glut on the market forced pineapple companies everywhere to cut back production, however, and there has been a swing to more demand.

Competing products have gone up in price too.

"Prices have not only stabilized now but firmed up," Newport said, "so we feel we can maintain present production."

Dole itself grows pineapple overseas to compete in the world market for the canned fruit and juice.

It has a major growing and canning operation on Mindanao in the Philippines, a growing operation in Thailand and produces some fresh fruit in Honduras.

The Philippines, Malaysia, Thailand, Kenya, South Africa, Puerto Rico and Taiwan—all of them lower cost producing countries than the United States—all produce pineapple these days.

But Hawaii was where it really

Dear Editor,

Living at Mokuleia, Oahu, my wife and I have noticed wide tire marks of some auto along the beach one or two times within the past year. Being conservation-minded, we were particularly disturbed at the slaughter of our sand (ghost) crab population. The death is not evident as they are, of course, crushed.

Yesterday, we and our neighbors, in addition to hundreds of bathers and picnickers along the stretch of beach, saw a jeep drive along the beach. We doubt that the men are antisocial or objectional in any way. They were enjoying their Sunday afternoon, and simply did not realize that they were breaking a wise law and slaughtering delightful animals that, incidentally, are efficient nocturnal beach cleaners of rotting fish and other refuse.

Dr. Otto Degener, Waialua, Oahu

We agree! Only on our beach they disturb the grass & sands too. Mahalo Hostess

University of Hawaii
COASTAL ZONE NEWS
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Dorothy Hargreaves
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Nov. 1

ADDRESS CORRECTION

Rare Plant

OTTO AND ISA Degener, veteran island botanists, are authors of an article in the April issue of Phytologia, a botanical journal, on Hibiscadelphus, a Hawaiian plant that is almost extinct.

Star Bul. 5/16/75

By Helen Shiras Baldwin

Haw. Trib. - Herald

October's flower in the lower native woodlands, in gulches and along roadsides is the neneleau or Hawaiian sumach. Sometimes the name is shortened to neleau. Botanists know it as Rhus chinensus, variety sandwicensis. The species name means belonging to China; the variety name means belonging to the Sandwich Islands, the old name for Hawaii given in honor of the Earl of Sandwich by Captain Cook for the chief patron of the expedition. 10/16-22/77

You will see the neneleau's torch-like flower clusters lifted upright at branch tips as you drive through Hamakua, Puna and Ka'u and parts of other districts where it is damp enough and not too cold. The individual flowers are very small, bright flame-like yellow but massed so closely together that each cluster or panicle seems a unit.

Not Cut Flowers

Do not gather these floral torches to brighten your home indoors as cut flowers. They wilt quickly and do not revive easily. Enjoy them as growing torches lit with the fire of life. Plant the neneleau in your garden if you wish. It is a small tree and will never grow so large as to crowd out other flowers in the garden.

The neneleau is attractive when not in flower, too. Its big compound leaves are tinged with red and yellow even as they unfold from their buds, giving a rich heather tone to the foliage. Individual leaves turn brilliant red and yellow as they fall. In colder climates this and other sumachs drop their leaves all at once in a brilliant show of autumn leaves. This does not happen in Hawaii.

Presumably migratory birds carried seeds of the ancestral tree to Hawaii long ago. Although most of our migratory birds fly to Hawaii from the Aleutian Islands and Alaska, stragglers come from Asia occasionally. These

utrinque acuminata, acuta, coriacea, breviter petiolata petiolis longitudine variantibus, plerumque 5 mm longis. Pedicelli axillares, 4—6 ex axillis foliorum superiorum orti, foliis subaequilongi, glabri. Calycis fere usque ad basin partiti, corollae 2-plo breviores, laciniae 5—7, ovatae, acuminatae, acutae; corollae rubro-purpureae, fere usque ad basin partitae, campanulatae lobi 5—7, late obovati, obtusi; stamina 5—7, corollae multo minora; filamenta basibus dilatatis tubum 3 mm altum, parti inferiori corollae adnatum formantia; antherae erectae, basi affixae; stylus corollae fere aequilongus. Capsula globosa vel ovoidea, glabra, sublignosa, 5—7 valvis dehiscens. Semina numerosa.

Var. *α.* **typica** R. Knuth. — Frutex 1—1½ m altus, dense foliatus foliis lanceolatis.

Oahu, auf kahlen Gebirgsrücken des Kaliki und Manoa (Hillebrand!, Wawra n. 2241, 2380!).

Nota. Varietas ab incolis »Puahekili« teste Hillebrand nominatur.

Var. *β.* **subherbacea** Hillebr. l. c. — Frutex 45—70 cm altus, prostratus. Rami elongati, laxe foliati foliis lanceolatis, utrinque longe acuminatis, fere linearibus.

Molokai b. Halawa, in tiefen Schluchten auf Kieselgeröll längs der Bäche (Hillebrand!, Remy n. 457!, 458 ex pte!).

Var. *γ.* **maxima** R. Knuth. — Frutex magnus, erectus, 1½—2½ m altus. Rami elongati et pedicelli ferrugineo-tomentosi. Folia alterna vel subopposita vel subterna, oblongo-obovata, breviter acuminata, basi acuminata et lata, sessilia.

Molokai: Pali des Pelekunuthales (Hillebrand!) und kleinere, ganz kahle Form bei Mannahui (nach Hillebrand); Ost-Maui bei Haleakala, 1000—1300 m (Hillebrand!).

Var. *δ.* **venosa** Wawra l. c.; Hillebr. l. c. — Suffrutex diffuse ramosa, 1 m alta, glabra. Folia magna, patentia, tenuiter coriacea, obovato-lanceolata vel obovata, plus minus longe acuminata, acutissima, subsessilia, laetius viridia, subtus paullo pallidiora, manifeste nervata nervis valde prominentibus. Calycis laciniae lanceolatae, media plus minus longiores, laete virides; corolla roseo-purpurea. Capsula pro specie parva.

Kauai, auf dem Gipfel des Waialeale, 1200 m (Wawra n. 2165!).

Var. *ε.* **Helleri** R. Knuth. — Folia oblongo-obovata vel obovato-rotundata, breviter acuminata, 4 cm longa, 3 cm lata, subsessilia, nervis moderatim prominentibus. Calycis laciniae lanceolatae, longe acuminatae, corolla minores. Pedicelli folia longitudine aequantes.

Kauai, auf dem Hanapepe und am Wahiawa-Wasserfall (Heller, Pl. of the Hawaiian Isl. n. 2614!).

Nota. Var. *venosa* a ceteris varietatibus distincta calycis laciniis magnis, laete viridibus, foliorum nervis prominentibus, var. *maxima* foliis breviter acuminatis, basi obtusis vel subcordatis, var. *subherbacea* foliis angustis.

107. **L. Lydgatei** Hillebr. Fl. Hawai. Islands (1888) 284. — Suffrutex, 30—130 cm altus. Caules partim procumbentes, angulati, parte superiore ferrugineo-tomentosi. Folia praecipue apicem ramorum versus sessilia, alterna, oblongo-ovata vel oblonga, utrinque acuminata, acuta, coriacea, pubescentia, obscure viridia, subtus rubro-fusco-tomentosa, petiolata petiolis 1—2 cm longis, rubro-fusco-tomentosis. Capsula magna, 6 valvis sublignosis, crassis dehiscens. Flores ignoti.

Maui: Lahaina (Hillebrand!).

108. **L. Remyi** Hillebr. Fl. Hawai. Islands (1888) 284. — *L. Hillebrandii* var. *angustifolia* Gray in Proc. Amer. Ac. V. (1862) 329. — Suffrutex prostratus, 30—60 cm altus, glaber. Caulis ascendens, ramosus, praecipue parte superiore densiuscule foliatus. Folia alterna, anguste linearia, utrinque acuminata, subsessilia, 4—5 cm longa, 1½—2½ mm lata, costata (in plant. exsicc.). Pedicelli axillares, ex axillis foliorum superiorum, foliis fere aequilongi, plus minus erecti. Calycis fere usque ad basin partiti, corolla 3-plo brevioris laciniae 6 vel 7, ovato-lanceolatae, acutae; corollae campanulatae, rotatae, 12—18 mm diam., purpureae lobi 6—7 secundum numerum calycis laciniarum.

Endangered Plant Disputes

Hon. Sites - Bull.

GENERALLY SPEAKING endangered plants haven't yet aroused as much emotion as endangered mammals, such as the whale, or endangered birds, such as the bald eagle.

But interest in endangered plants is heating up, accompanied by disputes among scientists and government officials and by sharp comments between botanists and foresters. 12/13/75

An example was the article by Tom K. Tagawa, State forester, published Thursday, in which he cites the need for much more study. Tagawa, in his article, answered a Letter to the Editor (Nov. 25) from Edward S. Ayensu, chairman and director of Endangered Flora Project, Smithsonian Institution.

Ayensu's letter commented critically on statements by Tagawa and Otto Degener, veteran Island botanist, which we quoted in "Our Environment" Oct. 4. Degener has written a rejoinder to Ayensu.

THE SUBJECT of endangered plants also came up at the annual Forestry Conference Oct. 23 in Hilo, to which F.R. Fosberg, one of the two major compilers of the list of endangered Hawaiian plants, sent a paper sharply criticizing opinions of Robert E. Nelson, head of the Institute of Pacific Islands Forestry in Hawaii.

Fosberg, curator of botany at the Smithsonian, has studied Island botany for more than 20 years. He and Derral Herbst, of the Lyon Arboretum, listed 1,765 species and varieties of rare, endangered and extinct plants of the Hawaiian Islands.

Of these, 1,088 were deemed in such precarious state that they were included in the Smithsonian's report to Congress, the first step toward their being officially protected by federal law, and were published in the Federal Register July 1.

Fosberg's and Herbst's list of 1,765 plants was published in the first number of Allertonia, a new botanical journal issued by the Pacific Tropical Botanical Garden, Kauai.

GOV. GEORGE ARIYOSHI, in a letter to F. Eugene Hester, director of the federal Fish and Wildlife Service, said the list proposed in the Federal Register "is not acceptable."

He enclosed a revised list, with 418 fewer entries than the federal list, and recommended that a State committee of botanists, foresters, agriculturalists and others work with the Fish and Wildlife Service in developing an official list.

The new list, and Ariyoshi's recommendation, resulted from a review by the Division of Forestry.

Our Environment

By Harry Whitten

Ariyoshi pointed out Hawaii does not have a State botanist and that the State forester handles such matters. Forester Tagawa has said that he'd like to have a botanist on his staff but the State hasn't funded such a position.

Ariyoshi's letter was sent to Hester because the Endangered Species Act of 1973 gives the primary responsibility for endangered species lists of both plants and animals to the Fish and Wildlife Service.

The State's edited list excluded ex-

Government officials, botanists and foresters all say they want to save endangered plants but they have their disagreements.

tinct species from the list "because there is nothing we can do to protect them."

OTTO DEGENER, in his reply to Edward Ayensu's letter, emphasized the need for more botanical research in Hawaii and the likelihood that there are many native plants that haven't been discovered.

He criticized a "Red Book" of endangered plants as inadequate, saying that such a book ignores all native Hawaiian flowering plants not yet studied, all ferns, mosses, lichens, fungi, limu and "humbler" plants making up an ecosystem necessary for survival of native birds and "humbler" animals.

He proposed a "Blue Book," not yet in existence, which would list Hawaiian plants which are not endangered and which could be chopped or bulldozed away without worry over their future. Plants not on this list should be protected, he said.

AS AN EXAMPLE of how plants might be revived, he cited the Haleakala, Maui, silversword, *Argyroxiphium sandwicense*. Due to depredations of feral goats and fly maggots, barely 100 plants were found when he studied it in 1927. Because of protection by the National Park Service, there are now more than 25,000 plants, he said.

However, a related plant, the Kau silversword, *(Argyroxiphium kauense)* is truly an endangered and threatened species, he said. There are only 1,000 plants in its concentrated range of 20-30 acres on private land on the southwest slope of Mauna Loa.

The Kau silversword grows about six feet tall. A few flowers from it were collected and presented to Emperor Hirohito and Empress Nagako of Japan on their recent visit to the Big Island.

DEGENER EXPRESSED some concern as to what might happen to the Kau silversword if mouflon sheep, now on Mauna Kea, should reach Mauna Loa.

The mouflon, a native of Sardinia and Corsica, was introduced to Mauna Kea several years ago and the first hunting season for the animal was held in August. Ronald Walker of the State Fish and Game Division said the division started a five year study in July of the mouflon's food habits. The animal will be observed and stomach contents studied of animals killed by hunters.

"We are also concerned about the silversword," Walker said. A small stand of Maui silversword exists on Mauna Kea and has been fenced off by the Forestry Division to save it from feral goats or sheep.

DEGENER AND his wife Isa attended the International Botanical Congress in Leningrad last summer and lectured there on Hawaiian plants.

They are authors of the series of books, "Flora Hawaiiensis," of which six volumes have been published. Degener, also the author of "Plants of Hawaii National Park," has been a free lance botanist in Hawaii and staff member of the New York Botanical Gardens since the 1930s.

F. R. Fosberg, incidentally, is author of an article on Hawaii's endangered plant species in the October issue of National Parks and Conservation Magazine. The front and back covers of the magazine have color photographs of flowers of three endangered plants, taken by R. J. Shallenberger, Derral Herbst, and Ken Nagata, all well-known in Island scientific circles.

Volcano, Hawaii 96785.
Feb. 10, 1975.

Editor, Haw. Press Newspapers
777 Ala Moana Blvd., Honolulu.

Dear Sir:

AN UNRECOGNIZED LUCRATIVE ASSET

Six thousand botanists from over fifty Nations attended the XII International Botanical Congress held last July in Leningrad, Russia. Among them were leading scientists from various branches of botany. Dismay was expressed by many delegates already at that time regarding the rapid extermination of the Hawaiian flora, considered by them not so much an American National Treasure, but rather an International one in the custody of the people of the State of Hawaii.

It is common knowledge to them, but hardly to the kamaaina, that U.S. mainland and foreign botanists come to the Islands to study our remaining native plants. But to write and publish their various monographs of plant groups, these botanists spend most of their time in mainland and European museums. Only there can they find the plants, to be sure only in the dried and preserved condition, that have been exterminated by Caucasians and Orientals since the time Captain Cook rediscovered the Islands in 1778. Such plants had been collected by the botanist David Nelson whilom Cook's voyage, and by other botanists and naturalists of later exploring expeditions. In fact, many plants collected by Chamisso on the Russian expedition to the "Sandwich Islands" under Kotzebue during Kamehameha's reign are highly prized and carefully preserved in the Komarov Botanical Institute in Leningrad.

One of us left his home in New York City in 1922 to emigrate to the Hawaiian Islands, then generally known as "The Paradise of the Pacific," a phrase seldom heard today as it is no longer so appropriate. Being major Hawaiian botanists and minor botanical book dealers by this time, we knew the import of botany to Hawaiian economy. We get enquiries about botanical conditions and book orders from the most surprising places, for example, for the last two years we have received attractive orders from a northern California college for a readable paperback about our flora. These books are used as a text by a professor who flies with his students here to study ecology in a superb setting. This July about 75 students, aged from about 18 to 80, are coming from a southern California university to study for two weeks the native biota of the Islands of Kauai, Maui and Hawaii. A two-day stay will be devoted to Oahu, not for its man-mauled jungles but for the exhibits of Hawaiiana and exotic birds and other creatures at the Bishop Museum, led by a retired [illegible] Park Ranger assisted by mainland specialists, will be brought in daily by tour buses from strategic locations to places of interest. A professor from Georgia, James, is coming with his wife to our Islands this spring, not to study our native trees but to collect and study our grasses. A local botanist is confused with [illegible] Another botanist who has come from afar with an ardent assistant [illegible] studied grasses; a native of Siberia, treeferns; a native of Finland, Kauai; owner of mansion, D.C., plants; citizen of Sweden, the Hawaiian akia grass and mainland lilies; and stone of Manhattan, Maui, Molokai and its only relatives.

[illegible] extinct birds preserved in Europe and elsewhere, aided [illegible] others and called them, may be cautious observers of museum [illegible] people; poor use of matrix, losses; the art of preparing, limiting [illegible] routes. Our extinct and extant botanical treasures are certainly of international fame.

The above examples, our sales of books mostly to tourists and foreign institutions, and the many National Science Foundation and other grants-in-aid indicate the great interest that the more educated have in Hawaiian plants. They are interested more for the plant's intellectual value than whether it can be eaten, manufactured into nylon or cut into boardfeet. Moreover their interest, from a mundane standpoint, amounts to BIG BUSINESS BRINGING MILLIONS OF DOLLARS TO OUR STATE ANNUALLY! No waiting years for trees to mature for chopping is necessary. In fact, such exotic plantings would tend increasingly to induce prospective tourists and scientists # 2 with their students to search for greener pastures South of us.

Though we are not ecologists, the destruction of our endemic plants means the hampering of all the branches of science devoted to animals specializing on them. Of these the more commonly known are "land-shells," insects and spiders, bats and birds. All of these animals bring scientists to our native forests with appropriations of considerable value. Incidentally, coniferous trees, planted to replace the bulldozed natives, form an almost life-free desert with their fallen, poisonous needles. These trees are known as one of the very worst groups of plants for an efficient watershed. The eucalypts are almost as bad.

Can the lack of appreciation by so many of us kamaaina for our unique endemic plants and the animals that use them as food and shelter, be blamed on our school system? Perhaps it is not at all strange for a population consisting of an unusually large proportion of boys and girls who have been graduated from school without knowing how to read and write. Such boys and girls, some highly educated and others not, are now grown men and women with the power of acting like Almighty God and voting the destruction of His remarkable Creations for a paltry handful of shekels! To my horror in 1928 such illiterate dullards did not even sense the significance of a magnificent heiau near Pukoo, Molokai, beyond its use as a handy source of fill or road metal.

We recommend residents of the Islands to get the Christmas number of the magazine "Defenders," published at 1244 Nineteenth Street NW, Washington, D.C. 20036, and costing about $2.00. Its 75 or so pages concentrate solely on the Hawaiian Islands. Those of us who can, should read the text; while those who cannot, should look-see the colored pictures, almost 100 of them. These are more-better than comic books. This issue shows why the proposed "conversion of 5,000 rural acres each year into plantings for commercial lumber operation" recently proposed by a State Government official would be a ghastly blunder. The color photo on page 516, if viewed by a mythical Martian who had walked neighboring streets, would certainly induce it to classify the pack gunnying itself on the beach at Waikiki as little more than a very variable assemblage of flabrous to mangey or moth-eaten hairy apes, the most destructive, prolific and pornographic on Earth. Yet such "Primapes," with the practice of wisdom, reverence and compassion can enable the surviving endemic plants and fellow-animals to continue their evolutionary development. The Hawaiian Islands will then approach their former state of being a fascinating Paradise of the Pacific, rather than rush to become a boring Hell on Earth.

Dr. Otto Degener, M. Sc., '23; Faculty, '25-'27; Univ. of Haw.
Naturalist, Haw. Nat. Park, '32; Recipient Carolus Linnaeus Medal, Royal Acad. Sciences, Sweden

Dr. Isa Degener, Bot. Garden & Museum, Berlin, Germany, '49-53

Dupl. Haw Bot Soc. Newsletter

Mr.Neil Abercrombie,
Room 440,State Capital, 2 May I976
Honolulu,Hawaii,USA

Dear Sir !

In the newspaper "Honolulu Advertiser" of 4 February,1976 I have read the article "Endangered plants list draws fire"by Bruce Benson Advertiser Science Writer.The article expresses alarm about the fate of the list of plants of the Hawaiian flora subject to protection,compiled by the Smithsonian Institution.Judging from the article,the list is strongly opposed in Hawaii Tom K. Tagawa,State Forester, consideres 639 species,included in the list, an exaggerated figure.

The opponents of the above-mentioned list fear,that if the list should be adopted by the Congress,henceforward it would be impossible to convert new areas into plantings for commercial lumber operations.This prompts them to call in question not only the correctness and validity of the list,but also the very necessity to take care of the further destiny of local species.

Being a florist and botanist-geographist,I take the liberty to express my opinion in so far as the problem of conservation of Hawaii's native flora is of international importance.The Hawaiian flora in distinction from other kind of flora is a unique creation of nature.It differes from any other flora in the world.Endemics make up 95 per cent of it.Almost half of this quantity falls on isolated endemics,that is such as can be found on one island only,in a certain part of it and nowhere else.Besides endemic speies there are many endemic genera in Hawaii,which imparts still more originality to the flora of the Hawaiian archipelago in comparison with that of India,Japan and North America.It possesses ten times as much originality as the flora of the Caucasus and the European Alps.

The originality of the Hawaiian flora consists in the fact, that though it has some typical features inherent in the flora of East Asia,America,Australia and New Zeland,it can't be referred to the flora of these countries and is singled out as an isolated floristic area,like that of the Mediterranean or the Cape regions.The Hawaiian flora has arboreal forms in much higher degree,than any other flora,even those genera and families comprising only grasses. This peculiarity makes the Hawaiian flora incomparable and exceptionally important from scientific point of view (it can be compared

with a sanctuary where most rare species have been preserved and at the same time it is a laboratory in which various problems can be solved).The great significance of the Hawaiian flora imposes upon the scientists of the Hawaii State and the United States a particular responsibility to save the Hawaiian flora in the name of science. In connection with such a high standing of Hawaiian flora it seems inadmissible to indulge in reflecting,if the list with 639 entries of species is long or short.All Hawaiian species must be preserved. To connive at the destruction even of a small part of it,spells an international crime.The broad Hawaiian public should also assume responsibility for the preservation of their flora because human activity exerts influence upon the entire nature of the islands.It should be noted that though the Hawaiian flora occupies a relatively small area as compared with the rest of the globe,it is very vulnerable because of the difficulties in preserving it.Certain species may be ruined even unintentionally.For instance some isolated species in tiny areals may be destroyed by road construction,ploughing up the slopes of hills and so on.This must be taken into consideration too.

At present time on the Hawaiian islands many species have been exposed to danger not only by chance.What is more a deliberate destruction of flora has begun on an increasing scale.On many islands forests have practically been destroyed,a number of precious species have become excessively rare.It has been put forward to expand plantings for commercial lumber operations at the cost of land covered by forest.This initiative is being backed by the chief of planning in the Hideto Kono State.This creates a threat not only for various species,but also for the entire flora of the islands.The situation which arose,though the presence of it is called in question by certain people,cannot but cause anxiety,indignation and counteraction. The list of plants subject to conservation measures is the first step in this direction and a great merit of the Smithsonian Institution as well as a number of Hawaiian botanists.However,judging from the article in the "Honolulu Advertiser",this step has not yet been taken and it is uncertain if we may hope for it.The situation is more than serious.It is much too much to add 5000 acres of new plantings on such a small territory as the Hawaiian islands.Every new 5000 acres of plantings will obliterate dozens of aboriginal species.

Much evil comes from the lack of understanding relative to the importance of the Hawaiian flora,its uniqueness in the world and

also from the lack of knowledge how to solve a number of local problems,such as the problem of lumber production.No need to dwell upon the urgent necessity for the humanity to preserve vegetation the world over and the Hawaiian verdure in the first instance.Much was said to this effect at the XII International Botanical Congress. However it is indispensable to note,that such endemic floras as Hawaiian are of great interest for science and they may be preserved in their own habitat,that is the Hawaiian flora may survive only on the Hawaiian islands.The struggle launched against the Smithsonian list does just the opposite.It testifies to the fact that no due attention has been given to the problem at least by a part of its citizens.All this bespeaks the fact,that there is an urgent need to take drastic measures and as a first step to adopt the list,what is a matter of vital importance.

The opponents of the Smithsonian list are struggling for the new 5000 acres to convert them into plantings of eucaliptus and pine-tree. But how much lumber can be produced on such small islands?Will it bring a large income? Is the protection of soil and water flow regulation less important for Hawaiian islands and particularly for agriculture? Neither eucaliptus,nor pine,or any other exotics can protect your islands from erosion,yet one cubic metre of soil is much more valuable than one cubic metre of lumber.No matter how unconvincing at present this argument may seem,after the destruction of natural forest the calamity will be more than eloquent.Natural forests solely can cope with the task of soil protection and moisture retention.

There are many more reasons.One of them is that without natural flora Hawaii would become sapless.The islands would lose their distinctive features and acquire a look similar to that of coastal areas on all continents.This would impair the economics of the State.The influx of tourists would drop.The returns from lumber production would not be able to make up for the total losses.Yet tourism is the most profitable industry for Hawaii,as the territory is too small to develop other branches of economy.It must be kept in mind,that visitors are attracted not so much by beaches,hotels,parks and industrial enterprises,as by the chance to see,sometimes for the first time, exotic nature,to satisfy the curiosity.The future of the Hawaii's population depends on the preservation of forests and volcanoes,for the tourist industry only can guarantee a stable income,which will increase parallel with the growth of cultural level of peoples and the expantion of international contacts.If I had an alternative what

country to visit, my choice would be Hawaii,to see the Hawaiian forest belt,meadows high in the mountains,stony deposits and craters. Next time I would go to Australia,New Zeland,South America and South Africa,for these countries are also original and distinctive.Analogous opinion have millions of people,who will never reconcile themselves to that 5000 acres idea in the interests of a small group of businessmen.As for the Smithsonian list,it is not irreproachable inasmuch as it does not comprise all the endemic species of the Hawaiian flora.Approximately 40 per cent of the endemics have been skipped, which will leave them unprotected by the law after the adoption of the list by the Congress.The list may be considered satisfactory only as the first version.It has been compiled quite knowingly by the proficients of the Hawaiian flora,who are fully aware of such a situation in which many species are in imminent danger.

To insist,that 639 species figure is an exaggerated amount,means to compare not floras,but the dimensions of states,it means to forget that Hawaiian flora is not an ordinary flora,that isolated species are not common species.True,the number of 639 species is a large quantity, no other State can boast such an amount.Hawaiian flora is more original than the rest of the regional floras on the North American continent taken together.Within the limits of every State there may be more species than in Hawaii,but the number of endemics is much smaller.We must take it into consideration.I don't think that such originality is a plight of Hawaii,on the contrary,it is a guarantee of its better future.I have no doubts that by capable guidance endemic species may also bring in an income.

My sincere wish is,that the Hawaiian problem should be tackled in all seriousness.Your scientists as well as the learned men in the whole world have every reason to be anxious now.If those who have come out against the Smithsonian list gain the upper hand,something irreparable would happen.If the worst comes,very soon it would be manifest,that a terrible error was committed,an error past redemption,for Hawaii are not a continent with a lot of space for species.If something is lost,it is lost for ever.So take urgent measures to save your flora!

Sincerely yours

A Galushko

Anatol Galushko,
Professor,Doctor.Member of Central Council
of All-union Botanic Society of Academy of
Sciences.

Rice was once an important agricultural product of Hawaii. A hundred years ago it ranked as the number two export product of The Hawaiian Kingdom, next to sugar in importance. As, as the editor of the "Pacific Commercial Advertiser" wrote in 1879,".....most other articles of production have declined (in importance) showing quite plainly that sugar is King, while rice may be styled the Prime Minister".

Two things were responsible for the rise of the rice industry in Hawaii. One was the large immigration of Chinese laborers to Hawaii who wanted rice to eat and who knew how to grow it. The other was the rapid decline of the whaling industry during the 1850's and 1860's. Men who had made money from the wintering whaling fleet now cast about for some other source of income.

POOR CROP

According to Thomas Thrum writing in his "Hawaiian Almanac and Annual" for 1877, rice was first grown experimentally by the Royal Hawaiian Agricultural Society in Nuuanu Valle on Oahu in 1858. The seed rice had been imported from East Indies. It grew fairly well but produced a poor crop, ¾ pound unhulled rice per square yard of ground.

There were no rice mills in Hawaii so Mr. H. Holstein, the agricultural experimenter in charge of the project, took the rice to a flour mill set up to grind wheat on Oahu. The flour mill was not equipped to hull and polish rice. The result was a mess of cracked and discolored grains which look small, dirty and unappetizing.

Although disappointed, Holstein did not quit. A year or two later he obtained seed rice from South Carolina. This he planted under two breadfruit trees, a poor location for such a crop but Holstein learned the hard way to grow rice. These two trees were long pointed out as the place where the rice industry in Hawaii began. This did better than the first planting but not very well.

He did give some of his crop to Dr. S. P. Ford who followed the advice of certain Chinese men and planted it in an abandoned paddy field. The yield was enormous by comparison. His seven-acre tract produced over a thousand pounds per acre of "paddy" as unhulled rice is called.

Dr. Ford was a good salesman. He invited people over to see his rice planting and sold seed rice. Soon wetland taro patches were converted to rice paddies all around Oahu and then on the neighbor islands as well. Waipio and Pololu valleys were soon famous on this island for their fine quality rice. Chinese people were especially drawn into growing rice and were most successful. Rice mills were set up and the industry grew by leaps and bounds.

TARO PATCHES

So many wetland taro

Please Turn to Page 20.

33 million pounds.

Rice continued to be an important crop in Hawaii until three things happened. Certain species of insects began attacking rice ruining the crop and destroying young plants. California itself began growing rice in a big way. Hawaii's time-honored methods could not compete with California's more mechanized ones and the scale of California's industry. Younger generation Chinese left the rice plantations to get higher education and enter business, the professions or other better paying jobs.

Today rice sold in Hawaii is imported, mostly from California. But you can still see the outlines of old rice paddies in Pololu and Waipio valleys, though many of Waipio's have returned to growing taro. patches were converted to rice paddies that Hawaiians complained about the lack of poi and the high prices of what was available. This gave a boost to the growing of dry land taro though it was never the favorite for making poi.

The Reciprocity Treaty between the Hawaiian Kingdom and the United States favored rice growers as well as the sugar industry. A large portion of the Hawaiian crop was shipped to California in the late 1870's and '80's. Some was exported to China. too. The bulk of the crop was used locally. No official estimate was made as much was used in local barter and for family use, to pay employees etc. But the crop in 1899 was estimated to be in excess of

we bought needles and thread from town and the material was so cheap about 10 cents a yard and those flannel materials, cottons only 10 cents. Our bread was only 5 cents a loaf, we never baked our own bread. But we always made our own pancakes. We also had palaua moku moku, and we use to have this wild tea called the 'nehe' tea. This was almost like the 'kokoolau.' We used brown sugar.

Camels vs. Deer

EDITOR TRIBUNE-HERALD:

A professional naturalist years ago, I was unusually interested in Sunday's article about our 40-acre zoo being built in Panaewa. The proposal to have an Amazon deer or two in the simulated South American rain forest, however, frightens me.

Upper Monoa Valley on Oahu has an attractive assemblage of exotic birds for local and tourist attraction. Though properly caged, some species have managed to escape and are now reproducing and spreading, I have noticed, as far makai as Lower Manoa.

Such escapes pose a threat to our native birds. What if Amazon deer should escape their enclosure into the fastnesses of our jungles and help destroy our endemic plants and the endemic animals depending upon them for food and shelter? Such introduction of deer, I feel, is not worth the risk.

Instead of deer of any kind in Panaewa, I should like to see a few camels and a few famous "Kona nightingales," two animals known to so many children from stories told them by their elders, yet never seen.

Camels and donkeys would never escape. Moreover, they would be suitable for carrying children on their backs for short rides about the zoo for a modest fee.

DR. OTTO DEGENER
Volcano

Major problems which heretofore stymied efforts to grow good peaches and nectarines locally have been solved and the luscious fruits can now be raised more successfully due to cooperative work by researchers at the University of Hawaii College of Tropical Agriculture and the University of Florida.

Through selection and breeding of Mainland varieties with the Hawaiian peach, new types have evolved that may be grown successfully in elevated sectors like the Volcano area on the Big Island; Kokee, Kauai; Wahiawa, Oahu and Kula, Maui.

Main thrust of the work was conducted by University of Florida scientists who crossed promising Mainland varieties with the Hawaiian peach. Selection of varieties that fruit early, avoiding the summer period when fruit fly infestation is heavy, has also been helpful says Warren Yee, UH extension fruit specialist.

Pest Control

Where fruit flies are troublesome the pests may be effectively controlled with a malathion-protein hydrolysate spray, adds Yee, who strongly encourages home gardeners to start including peaches and nectarines in their home orchard plantings.

Peaches recommended by Yee are Flordared, P-101, P-105, P-24 and P-49 which fruit from May to June. Yield and size of these varieties, all white-fleshed, are affected by moisture availability. Irrigation is essential to the production of large-size fruit.

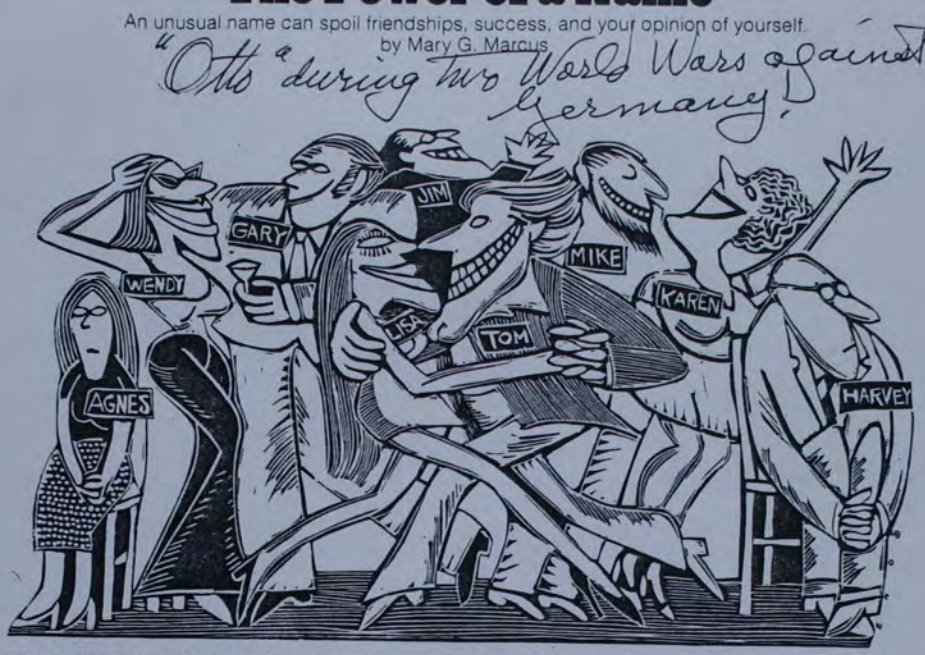
Nectarine varieties recommended for local plantings include Sunred, N-6, N-19 and N-21 whose fruiting season extends from May to June. All are yellow-fleshed. Scions of these recommended varieties are available by communicating with Yee at the University of Hawaii.

For best results Hawaiian peach stock plants should be used. Get seeds of the Hawaiian peach and after removing the shell, place the kernels in a plastic bag of moist peat or sphagnum moss. Keep seeds refrigerated for about a couple of months and those that show signs of growth should be planted in individual containers. Fertilize seedlings regularly to promote growth which should be sufficient after six months to permit grafting.

The Power of a Name

An unusual name can spoil friendships, success, and your opinion of yourself.

by Mary G. Marcus



THE MAN ON THE TV screen throws his hands in the air, a silly grin on his face, watching as the family washing machine overflows. As he's standing in soapy water up to his ankles, his wife bounds in, takes charge, and tells him that with Brand A, he needs only a quarter cup of detergent to get the family wash sparkling white. More likely than not, the sheepish, bumbling husband is named Harvey.

In 1965, to protest such advertisements, New Yorker Harvey Edwards organized a group of 150 Harveys and besieged the ad agencies. The Harveys won their fight, and three sponsors retired their offending commercials. To counter the media's portrayals of men named Harvey as weak and bumbling, the group set up an award for the best positive portrayal of a Harvey. The first winner: Columbia Pictures' Harvey Middleman, Fireman.

Harveys and other people with unusual names often do suffer. Psychologists and educators have found that while names cannot guarantee fame or insure neurosis, they can help or hinder the development of a good self-image, friendships, and even affect success in school and on the job.

As Humpty-Dumpty told Alice in Through the Looking Glass, certain names imply that their owners have specific characteristics. Alice asked, "*Must* a name mean something?" Humpty-Dumpty replied, "Of course it must...*My* name means the shape I am ...With a name like yours, you might be any shape, almost."

Trustworthy John. Whenever researchers ask people to describe the owners of specific names, they find wide agreement. In 1963, a British psychologist asked a group of citizens to rank names as to their age, trustworthiness, attractiveness, sociability, kindness, and lack of aggression. He found that Johns are seen to be trustworthy and kind; Robins are young; Tonys, sociable; Agneses, old; Agneses and Matildas, unattractive; and Anns, nonaggressive.

In the United States, psychologists Barbara Buchanan and James Bruning got college students at Penn State and Ohio Universities to rate 1,060 names. The students reported how much they liked or disliked them, whether the names were active or passive, and how masculine or feminine they seemed. The students had no difficulty agreeing that they especially liked active Michael, James, and Wendy, and that Michael and James were extremely masculine while Wendy was quite feminine. They disliked passive Alfreda, Percival, and Isadore, and felt that Percival's and Isadore's masculinity was in doubt. So was Alfreda's femininity. Feeling about most names was less intense.

In another study, psychologist E.D. Lawson asked a group of students to rank men's names. Ten of the 20 names (David, Gary, James, John, Joseph, Michael, Paul, Richard, Robert, and Thomas) were those most common on the campus. The other 10 (Andrew, Bernard, Dale, Edmond, Gerd, Ivan, Lawrence, Raymond, Stanley, and Matthew) were selected at random from the total enrollment. Both men and women held stereotypes about the 20 names; they saw common names as better, stronger, and more active than unusual ones.

charms had been snatched by an evil spirit, restored her hair and eyebrows through medications of hibiscus juice.

Today, Island newcomers are often intrigued by the charming fable of hibiscus "sign language."

A woman looking for a man is supposed to wear a hibiscus behind her left ear. A wahine who is spoken for or married is said to pin her hibiscus behind the right ear. But truth to tell, most Island beauties perch a hibiscus on whichever side seems most becoming, regardless of romantic status.

Then—just to add to the confusion—there's the inevitable Hawaiian gal who flaunts hibiscus behind both ears!

WASHINGTON (UPI) — The government wants to declare forests of mamani and naio trees on the slopes of Mauna Kea as essential areas needed for an endangered Hawaiian bird to survive, the U.S. Fish and Wildlife Service said yesterday.

The palila, a small bird found only in a small area above 7,000 feet elevation on the slopes of the dormant volcano on the Big Island, has been declining in population as its forest habit is destroyed, scientists said.

The bird depends on the mamani, a tree with very hard wood used for fence posts, and the naio for food, shelter and nesting sites.

The Hawaii Audubon Society and other conservation groups have urged special protection for the the forest land in the pending State master plan for use of Mauna Kea.

Conservationists claim one reason the forest acreage is declining is damage to young trees caused by foraging animals, such as sheep.

The Fish and Wildlife Service has proposed formally declaring an area on Mauna Kea, where the world's entire known population of the birds live, as a "critical habitat" for the species. This means government agencies would be prohibited by law from damaging or jeopardizing, or funding any project that would harm the living space needed by the birds.

The bird belongs to the Hawaiian honeycreeper family, scientists said.

Brewer Is Planting Guavas

The C. Brewer Co. has begun planting some 30,000 seedling guava trees in nursery plots at Kilauea on Kauai as the first step in an agriculture and aquaculture project planned there. John Buyers, Brewer president, announced the start of work on the first increment of a 600-acre guava orchard Thursday in a report to the Kauai Chamber of Commerce. Brewer is investing $3,000,000 into a program to return several thousand acres of former Kilauea sugar lands to agriculture use.

V 123

Engler, Syllabus der Pflanzenfamilien II. 1964.

eigenartig gelappt. — 1 Gattung: *Liriodendron* (2) Atlant. Nordam.; Zentralchina, Indochina; *L. tulipifera*, Tulpenbaum, Atlant. Nordam., wertvolles Holz, Zierbaum.

Fossil: *Magnolia* und *Liriodendron* zur Kreidezeit in Nordam. und Europa, im Tertiär auf der gesamten Nordhem. *Talauma* im Tertiär in Nordam. Daneben verschiedene fossile Gattungen; Samen von *Magnoliaespermum* (*Carpolithus fliegelii*) in der deutschen Braunkohle häufig. Pollenfunde bereits aus dem Jura bekannt.

Fam. **Degeneriaceae.** (Fig. 36). Blüten zyklisch, heterochlam., ☿, hypogyn Blütenachse etwas verlängert. Sep. 3, selten 4. Pet. 12—18, in 3—5 Kreisen. Stam. 20—30, in 3—4 Kreisen, flach; Pollensäcke extrors, flächenständig, eingesenkt, längs aufspringend. Innere Staminodien 10—13. Karp. 1, nicht geschlossen, mit 2 langen, parallelen, nach auswärts gebogenen Narbensäumen längs der Öffnung. Samenanlagen ∞, laminal-lateral in 2 Reihen. Karp. zur Fruchtzeit geschlossen; Frucht mit 2 parallelen Korkstreifen, ventral aufspringend. Samen ∞, mit 3 Kotyledonen. Pollen 1 furchig. Endosperm zerklüftet. — Bäume mit ⊕ Blättern, ohne Stipeln. Blüten einzeln, an der Spitze supraaxillärer Kurztriebe. Knoten pentalakunär. Tracheen mit leiterförmiger Perforation. Fasertracheiden oder Libriformfasern. Sklerenchymatisierte Holzparenchymstränge. Mark mit Steinzellnestern, nicht vollständig gefächert. Ölzellen. — 1 monotypische Gattung: *Degeneria viliensis*, Fidschi-Inseln.

Fam. **Himantandraceae.** Blüten spirozyklisch, heterochlam., ☿, hypogyn. Blütenachse etwas verlängert. Sep. (2), zu einer Kalyptra verwachsen und die übrigen Blütenteile einschließend, hinfällig; ebenso die (4) Pet. Stam. ∞, ⊕, flach, riemenförmig; Pollensäcke extrors, flächenständig, eingesenkt, längs aufspringend. Staminodien ⊕, den Stam. ähnlich, äußere 7—∞, innere ∞. Karp. 7—∞, ⊕, frei, ventral mit der Blütenachse ± weit verwachsen, geschlossen oder auch im freien Teil offen; Griffel papillös. Samenanlagen 1 (sehr selten 2), laminal-lateral. Karp. nach der Blütezeit zu einem fleischig-holzigem Synkarpium verwachsen, mit je 1 Samen. Pollen 1 furchig. Endosperm ölhaltig. — Bäume mit ⊕ Blättern, ohne Stipeln. Blüten einzeln, an der Spitze axillärer Kurztriebe. Spaltöffnungen kreisförmig auf der Blattunterseite angeordnet. Schildförmige Haare. Knoten trilakunär. Tracheen mit leiterförmiger bis einfacher Perforation. Fasertracheiden. Mark durch Steinzellplatten gefächert. Ölzellen.

Die Blüten werden auch als achlam. und die beiden Kalyptren als Hochblattopercula gedeutet (cfr. *Eupomatiaceae*).

1 Gattung: *Galbulimima* (*Himantandra*, 2—3) Neuguinea, Molukken und O. Australien.

Fam. **Winteraceae.** (Fig. 37). Blüten spirozyklisch (Pet., Stam. und Karp. oft ± ⊕) bis zyklisch, heterochlam., ☿, selten ♂♀ oder polygam, hypogyn. Blütenachse kurz oder schwach verlängert. Sep. (2—4, selten mehr). Pet. ∞—0. Stam. ∞—wenige, meist flach und breit, nur bei *Drimys* z. T. schmäler und in Filament und Anthere gegliedert; Pollensäcke bzw. Antheren apikal, subapikal oder extrors, deutlich von der Fläche des übrigen Stam. abgesetzt, längs aufspringend. Staminodien selten, nur in ♀ Blüten. Karp. ∞—1, frei, seltener ± verwachsen, nicht oder nicht vollständig geschlossen, mit 2 parallelen Narbensäumen längs der Öffnung. Samenanlagen ∞—wenige, laminal-lateral in 2 Reihen, selten (*Exospermum*) laminal-diffus. Karp. zur Fruchtzeit geschlossen. Sammelfrucht aus ∞—1 freien beerenartigen Früchtchen

270

READERS FORUM

Craters Road a Gamble

EDITOR — National Park officials laid out plans of the Chain of Craters road to the Kalapana Community Association at a meeting Feb. 2. Plans for the $3 million road, to be constructed directly below Kilauea's east rift, were met with mixed reaction. Several persons spoke of the beautiful view the road will have to offer.

Superintendent Bob Barbee of Hawaii Volcanoes National Park admitted to the eventuality of lava flows again crossing the road, and called the reconstruction "a gamble."

Geologists from the U.S. Geological Survey had been consulted, according to Barbee, and the road seemed a "reasonable risk."

A recent pamphlet published by the Interior Department and the USGS called "Natural Hazards of Hawaii" explains very well why reconstruction of the road can be called a risk: the entire road will be constructed in or below [illegible] eruption exists, and where active volcanic vents are located.

It is interesting to note that Kilauea volcano has erupted 42 times since the turn of the century, 17 times in the east rift zone.

At one point during the meeting, an elderly Hawaiian woman spoke with great feeling. "The road was taken away before but the federal government has lots of money," she said, referring to the Chain of Craters road that was destroyed during the nearly continuous eruptions that began in August 1968 and that lasted until 1973. These eruptions covered over 10,000 acres of land, including the road that was built only a few years before.

The Chain of Craters road was built and in use in 1965 and by 1967 some 12,000 tourists a month passed through Kalapana. At the meeting, questions were raised on the impact of the projected traffic on the community of Kalapana.

Chief Ranger Chris Cameron said that right now about 200 tourists a day visit the Kalapana section of the park, but with completion of the road three or four times that number will visit. This means there will be up to 24,000 visitors a month, and much of the traffic will be tour buses.

A question was then asked, "Will the community roads be upgraded to handle this tremendous increase in traffic?" Park officials deferred the answer to the county and state.

It has become apparent the road is indeed a gamble, and what is at stake is $3 million in public funds and the serenity of the community of Kalapana.

GREG OWEN
Volc

Dear Dr. Degener, Here I
the which remains your natural
cooperation. My best wishes
for the present year — Cordially

Divulgación de nuestra flora

Herbario del Museo de Historia Natural

Por Jorge A. Ibarra

El Dr. Otto Degener, vive desde hace muchos años en una de las islas de Hawai cultivando un bello jardín botánico. Al botánico Degener lo apreciamos en alto grado por sus palabras de

Un regado del trópico

estímulo y también por el obsequio de libros y de la revista National Geographic. Con él escribimos una breve monografía sobre **la papaya**, especie americana, propia de nuestro trópico y pudiéramos haber escrito más, pero los quehaceres cuotidianos

nombre de esta fruta excele
que en el país llegaron a m
hasta 60 cm. de largo y a pe
más de 22 libras no sabemos
mo esté la fruta ahora; más b
pensamos que su tamaño ha
generado como ha sucedido
otros frutos.

La **papaya** tiene fama de
una fruta apreciada por quie
padecen de la digestión y
dice que la semilla desecada
pulvenizada se emplea para co
batir parásitos intestinales.
otra parte se nos informa
en variadas ciudades centroam
ricanas parte de la fruta se em
plea para curar la tos; adem
todavía la sabia de la planta,
gún algunos, servía para ma
«niguas», diminuto arácnido
orden Acarina.

No se conoce el verdadero
gen de la **papaya**, pero sí se
que es de nuestro trópico,
contrándosele común en mu
partes, principalmente a una al
de 1,200 metros, pero esta m
extendida a otras alturas de
el fruto crece más pequeño.
término «**papaya**» según la
of Guatemala es de origen
llano, y con tal nombre se le
noce en todas las antillas,
excepción de Cuba, donde
término se refiere a cierta p
íntima de la mujer.

Pertenece a la amilia Ca
ceae; entre las especies de
familia existe la **Carica mexi**
(A. DC.), descubierta con
nombre por nuestro amigo el
signe botánico Dr Louis A.
lliams, coautor de **Flora of G**

University of Hawaii at Manoa

A Sea Grant College
Spalding Hall 252 B • 2540 Maile Way
Telephone (808) 948-8191 • Honolulu, Hawaii 96822 / Cable Address: UNIHAW

Marine Advisory Program

February 22, 1977

TO:
Ed Arrigoni
Otto Degener
Ken Nagata
Charles Lamoureux
Winona Char
Steve Montgomery

Dr. Degener.

Dear Friend of Ka'ena,

Here's the second half of the Ka'ena field book. Again, we have not carefully proofread the typing as we wanted to get the final draft to you as soon as possible. You probably know that several of us have been working through weekends and nights trying to complete the final editing and typing as quickly as possible. We are up against some tight deadlines now. Final proofreading will be done in the next few days.

The timetable is: obtain written bids from printers on Friday the 25th; complete layout of book by Monday the 28th; process a University purchase order by the end of the working day on the 28th; take a camera-ready copy to the printer during the first week of March.

Please keep the enclosed for your information. As we stated earlier, you will receive a copy of the final field book once it is printed. Again, thank you for your cooperation and assistance.

Aloha,

Ray Tabata

cc: Toni Snellback
Rose Pfund

P.S. Mahalo for the material. I'll be reading through the interesting articles and reports as time permits. I'll return them — as soon as possible. Ray Tabata

Returned corrected 3/2/77 + Paperback + ROT 1+2

Tuesday, April 5, 1977 HONOLULU ADVERTISER

Save the palila

The decision whether the rare palila bird and incidentally the plants endemic to Mauna Kea will be adequately protected from extermination depends on the decision of Chairman Christopher Cobb and other members of the Department of Land & Natural Resources.

From a dollars and cents viewpoint to construct, maintain and patrol a fence to exclude sheep and other herbivores from part of Mauna Kea would be ridiculous as we State taxpayers would be obligated to pay all costs. The Federal government cannot do so. As an alternate to such a proposed boondoggle, it would be cheaper for the State to finance a round-trip flight for each of the few inveterate hunters in our midst to and from Uganda or some other African country to shoot surplus game still surviving there than barnyard sheep that early ran away to our mountain top.

From a botanical standpoint, the flora of Mauna Kea is largely unknown. A few spot check expeditions show that some still surviving flowering plants are endemic and on the verge of extermination by feral sheep. In fact, the mamani (or *Sophora*) itself on Mauna Kea, according to the monographer Alvin Chock, are the 1.) forma *maunakeaensis* found no other place on earth except on that mountain, 2.) forma *obovata*, only near Puu Huluhulu and 3.) forma *ovata*, only on Mauna Kea and a small adjacent area on Mauna Loa. Incidentally, to name the false sandalwood *Myoporum sandwicensis* for Mauna Kea is a bit far-fetched and antiquated. It is the endemic *Myoporum fauriei* published in 1912. This is not a small bush but a tree. With the *Sophora* and *Myoporum* kinds so restricted, why be surprised that other kinds of Hawaii plants are similarly restricted in area?

What is significant is Ranger Don Reeser's outstanding, practical experiment in Kau, Island of Hawaii. Overrun with goats as Mauna Kea is overrun with sheep, National Park Ranger Reeser constructed a relatively small goat exclosure and simply left the goat-free area alone. Seeds of a swordbean (*Canavalia*), absolutely new to science and undoubtedly dormant for 50 years or more in the ground, germinated and soon covered the area as in former centuries. With Mauna Kea freed of sheep, what a wealth of plants, new to science, may not again cover the sheep-denuded mountain to further science, to promote survival of the palila and to increase fogdrip and rain to replenish our dwindling water supply?

The entire area of Mauna Kea from sea level to mountaintop should be freed of sheep (and goats) not only for the welfare of the State, already notorious throughout the civilized world for its biologic vandalism; but for the benefit of mankind as a whole. Let our archipelago return as much as possible to be a paradise of the Pacific. The biologically ignorant should realize that promoting conservation stimulates tourism with visitor dollars, and scientific research with liberal Federal and other grants. Tourism and research are bigger business than hunting and wood-chip lumbering.

DR. OTTO DEGENER

Enlarge Park

We don't know how many residents like to live like roaches on the crust of a red hot rhubarb pie, not knowing when or where the hot filling will erupt about them or when they will sink into it. We do not know how many lumbermen wish to plant exotic weed-trees for paperpulp for the Orient on land that may be overrun within 30 years by lava flows.

Is this not the critical time to get unfortunates "off the hook" by purchasing Puna lands adjacent to Hawaii Volcanoes National Park to enlarge and enhance an area supposed to attract tourists with displays of volcanism? Let the park follow Madame Pele, and embrace areas of her activity.

Not being realtors we do not know how to implement an addition to the park. We believe this commercially low grade land of outstanding scientific value could be purchased by such a wise association as the Nature Conservancy for the National Park Service, by exchange by the State of its Puna land for federal land now considered obsolete by the military, or by both methods.

However, the acquisition is accomplished, now is precisely the time to enlarge Hawaii Volcanoes National Park, one of the most lucrative assets for gaining outside cash for a State with dwindling pineapple and sugar industries, an expensive Kohala fiasco, youngsters emigrating to other states in search of employment, inflated salaries for many government servants, and a State debt we estimate at about $1.4 billion.

Drs. Otto and Isa Degener
Volcano, Hawaii

Thursday, September 22, 1977 Honolulu Star-Bulletin A-13

Egener

Löbbecke

du Roi

Joh.Phil. oo Brinkmann
Dr.med.Hofmedikus Fr.Wilhelmine
* 2. 7.1741 *
+ 8.12.1785 +

h.Friedrich oo Fritz Heinr.Ludw. oo Henneberg Wilhelm oo Schmidt
ufmann Christ.Henr.Charl. Kaufm., Banquier Henr.Doroth.(Etta) Dr.jur. Notar Marie
7.10.1772 * 28. 1.1780 * *30.12.1783 * 8. 3.1777 * 9. 9.1773
1.11.1846 + 15. 2.1851 + 9. 7.1852 +21.11.1864 +14.12.1849 +23. 1.1841

lh.Friedr.Eduard oo Etta Karoline oo Friedr.Wilh.Adolph
ufmann 16.10. Dr.jur.Notar
3. 7.1804 9.1.1833 *8. 5.1810 *15. 9.1813 1836 * 5. 1.1804
7.12.1874 + + 6. 1.1858

lhelm oo Kaempf v. Baldenstein
ufmann Marie Louise
. 5.1844 *
1916 +

Hugo
Zigarrenfabrikant, Kommerzienrat
Geflügelzüchter
*29.10.1839
+19.11.1911
unverheiratet

to
.Botaniker

Oldr. Brother [illegible]
Richard du Roi
living in Berlin
Jan 1910

JOHN FREDERICK DEGENER III '26

JOHN Degener died on Sept. 4, [illegible] Greenwich Hospital, Greenwich, Conn., of multiple strokes and pneumonia. He was 72 and had been in poor health for some time.

Jack's entire business career was with the firm where he became senior partner. He was a member of the Investment Bankers Association of America, New York Dealers Association, and the Municipal Bond Club of New York. During WW II he served on the Draft Advisory Board and participated in Red Cross and War Bond drives.

Born in NYC, Jack attended Browning School in preparation for Princeton. Following graduation he moved to Greenwich, where he resided for [illegible] years. He was a member of the Greenwich Taxpayers Assn., treasurer of the Greenwich Tennis Club, and also, he was a member of the Field and Riding Hill clubs in Greenwich, and the Racquet and Tennis Club and Union League club in New York.

Surviving Jack are his wife, the former Cynthia Dorr Robinson, whom he married in 1965; [illegible] a daughter by a previous marriage, Mrs. Robert Gledhill, two stepsons, Thomas Porter Robinson, Jr. of Stamford, Conn., and Davis Rogers Robinson of Washington, D.C., and four [illegible] children.

We missed Jack at our 50th Reunion, and [illegible] we share the grief his family feels in losing him.

The Class of 1926

Hugo [illegible] Degener
Gotha) † [illegible]

Hunt Institute for Botanical Documentation

HONOLULU ADVERTISER, Friday, September 23, 1977 A-15

'Expand Volcano Park'

We don't know how many residents like to continue
iving like roaches on the crust of a red hot rhubarb
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letters

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ark, one of the most lucrative assets for gaining out-
de cash for a State with dwindling pineapple and
igar industries, expensive Kohala fiascos, youngsters
migrating to other states in search of employment,
iflated salaries for many government servants, and a
tate debt we estimate at $50 million.

OTTO AND ISA DEGENER
Volcano

4 — Hawaii Tribune-Herald, Thursday, September 22, 1977

Time to Enlarge the Park

EDITOR — We don't know how many residents like to continue living like roaches on the crust of a red hot rhubarb pie not knowing when or where the hot filling will erupt about them or the surface upon which they sleep sink into it. We do not know how many lumbermen wish to plant exotic weedtrees for paperpulp and timber for the Orient on land that may be overrun within thirty years by mile-wide lava flows.

Is this not the critical time to get unfortunates "off the hook" by purchasing Puna lands adjacent to Hawaii Volcanoes National Park to enlarge and enhance an area supposed to attract tourists with displays of vulcanism? Kilauea has been a disappointing lua make for quite some time, and Halemaumau looks little more than a stone quarry with its avalanches of decadence. Let the Park follow Madam Pele, and embrace areas of her activity.

Not being realtors, we do not know how to implement an addition to the Park. We believe this commercially low grade land of outstanding scientific value could be purchased by such a wise association as the Nature Conservancy for the National Park Service, by exchange by the State for its Puna land for Federal land now considered obsolete by the Military, or by both methods.

However the acquisition is accomplished, now is precisely the time to enlarge Hawaii Volcanoes National Park, one of the most lucrative assets for gaining outside cash for a State with dwindling pineapple and sugar industries, expensive Kohala fiascos, youngsters emigrating to other States in search of employment, inflated salaries for many government servants, and a State debt we estimate of about $50,000,000

Drs. Otto & Isa Degener
Volcano

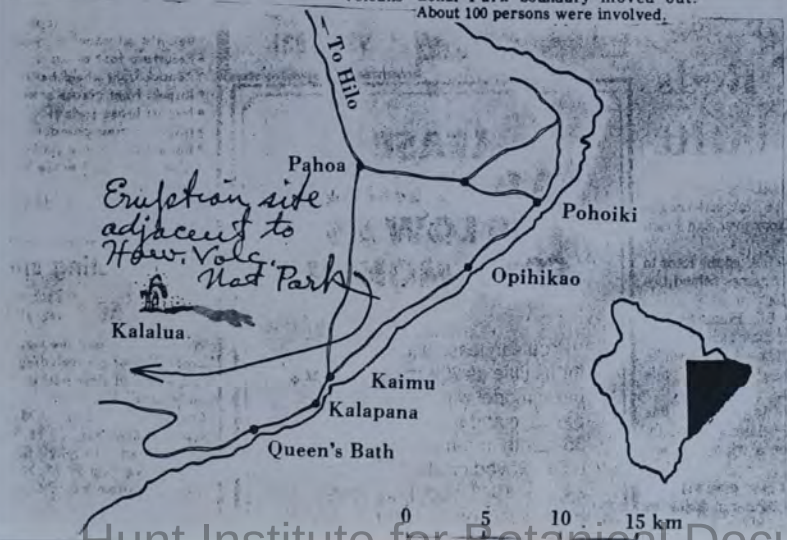
A-16 Honolulu Star-Bulletin Thursday, September 22, 1977

KALAPANA — The message was brief. Hon. Advertiser

"You are in danger and we want you to start evacuating in three hours," Hawaii County Civil Defense Administrator Harry Kim told some 250 lower Puna residents yesterday morning. 9/30/77

Three hours later, Kaimu and Kalapana families were loading their personal and household belongings onto 2½-ton National Guard trucks.

By nightfall, Kim planned to have all residents from Kaimu junction south to the Hawaii Volcanoes National Park boundary moved out. About 100 persons were involved.



Enlarge Park

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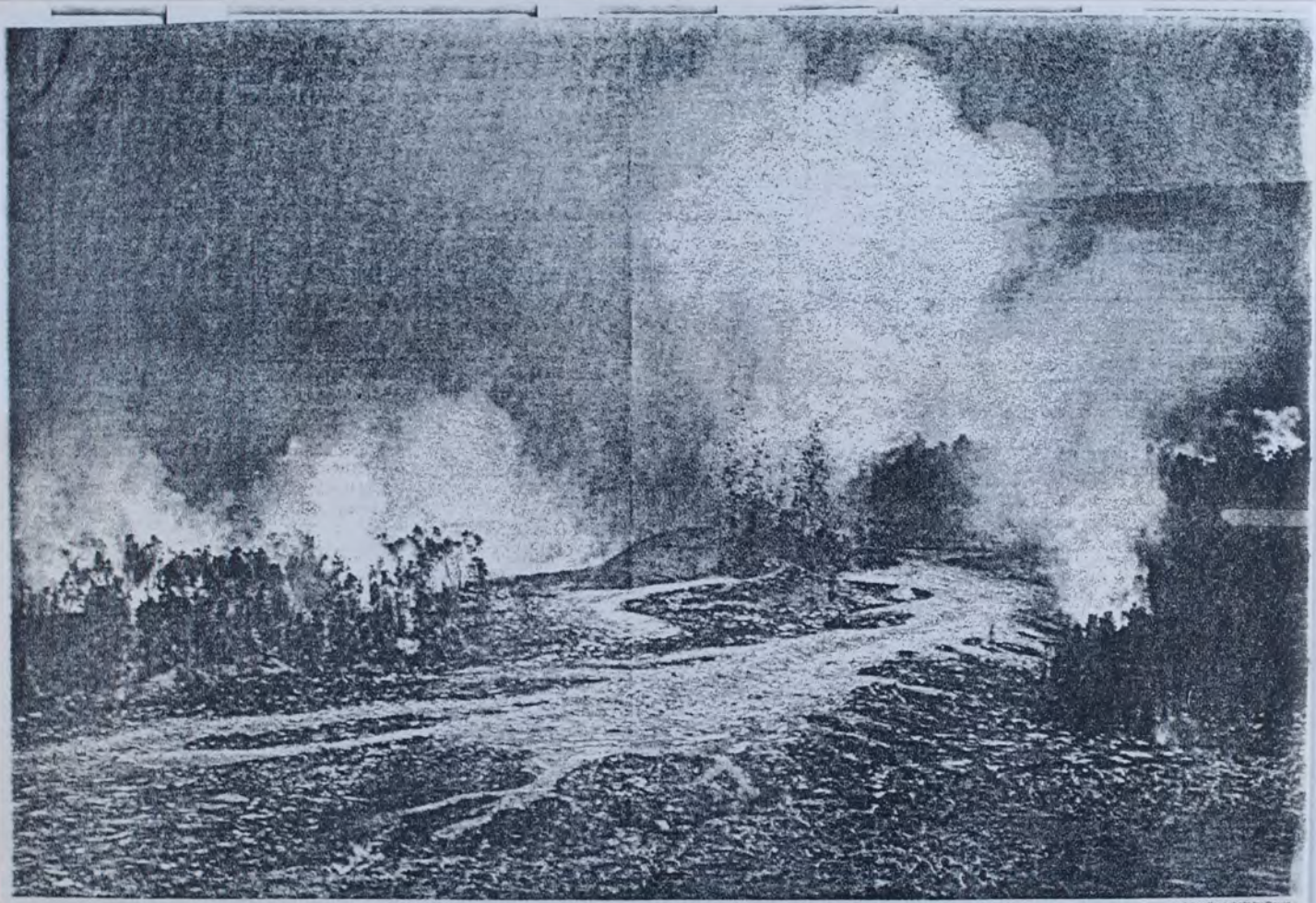
Drs. Otto and Isa Degener
Volcano, Hawaii



Advertiser photo by David

Lava flows down the East Rift Zone over the weekend, fed by fountain.

Hon. Adv. 9/20/77

Eruption goes off for now

Against Hapu'u Project

Haw. Tribune - Herald. Oct. 16/77

EDITOR—Regarding the proposed expansion of commercial hapu'u harvesting operations in the Kilauea Forest Reserve, Ka'u, Hawaii, Tax Map Key: 9-9-01:7 (File No.: HA—9/5/77-992) we wish to add a few comments:

We two are professional, haole botanists who have spent a total of about 75 years full time, on the flora of the Hawaiian Islands, one of us graduating from the University of Hawaii with an advanced degree in 1923 and teaching botany there in 1925-27. Due to this background we are opposed to expansion of hapu'u harvesting as contemplated in the area mentioned above. The four following reasons come to mind:

1. We wish an ENVIRONMENTAL IMPACT STUDY of the area performed to convinced skeptics what a National Treasure the area actually is. Common sense tells us that the hapu'u increase in height per year little more than the width of the stalk of its frond. Estimating this generously, it would be but a couple of inches per year. In seeing the hapu'u trunks turning and twisting among themselves over the ground before rising. Any child can figure that most of these trees were already old before Kamehameha I was born; some very likely developed as sporelings about the time of the birth of Christ. They are Methuselahs.

2. The Bernice Pauahi Bishop Estate, established by Kamehameha's granddaughter, is lead by a group of dedicated Americanized Trustees who are evidently imbued with the sacred haole duty to turn assets into dollars and cents: this, we believe, amounts to a rental of less than $75 per month to harvest or "eradicate" 300 acres of this virgin, irreplaceable, climax, treefern forest. In addition the Estate reaps, we were told, 3 cents per cubic foot of raw treefern fiber (actually aerial roots). The Estate is not paid for the woody part of the trunk nor for the starchy pith, both wisely allowed to rot on the ground. Can any one imagine that graceous Princess Pauahi, whose grandfather admonished his retainers to liberate forest birds after plucking a few of their prized feathers, would tolerate such vandalism? That would seem so amusing to us haole were it not so tragic is that the ohana make such a hullabaloo about a former prison island, a barren Alcatraz, that helps enable our Military to perfect their ability to defend our Nation during a Third World War; yet they fail to utter a boo against wiping out living Creations unique to the Island of Hawaii!! Once gone, they can never be replaced!

3. The Island of Hawaii, due to the action of modern man since its rediscovery by Captain Cook, with bulldozers and buzzsaws is slowly drying up. Many streams formerly permanently filled with rapidly flowing water harboring hihiwai and o'opu are now running dry. Areas such as that covered with treefern may register a rainfall of barely 100 inches per year according to rain grades; but it trapes more than that amount of water in fogdrip from cold fern fronds, like the drops of moisture condensing on the outside of a glass of ice water. Such rain and fogdrip is caught by the living treefern and its dead trunks, as would a sponge, and eventually tricles down to replenish our artesian water supply. An example of fogdrip is observable about the Humuula Sheep Station. There the grass under ever mamani is green and healthy; while away from it, it is but yellow hay.

4. Besides hapu'u the area involved harbors the peculiar tree (not the bush) naio or false sandalwood (Myoporum fauriei), a Tetraplasandra tree new to Science, and an abundance of the otherwise extremely rare fern Toppingia which has pale green fronds creeping horizontally through the jungle for six and more feet. Why mention other plants and the animals that depend on them for food and shelter? Don't just think of birds. There are many peculiar and fascinating Creations-who ever heard of Hawaii's wondrous predaceous caterpillars until recently! in danger of extermination. Extermination means forever.

Creations

In summary, we pray the ohana spirit of Kamehameha and his granddaughter Pauahi will prevail in land bequeathed to the Hawaiians, rather than the haole spirit of turning God-given ~~creatures~~ into dollars and cents. We hope that the area will be added to Hawaii Volcanoes National Park as an outstanding National Treasure. From a haole standpoint, a treasure should command a price far in excess of what harvesting of pulu fiber could ever bring the Estate. Such preservations surely would be in harmony with the ancient wisdom of Kamehameha and his granddaughter Bernice Pauahi Bishop.

Drs. Otto and Isa Degener
Collaborators in Hawaiian Botany
New York Botanical Garden
residence: Vol [illegible]

The unsinkable plant

Sisal is left high, dry

Hon. Adv. 10/3/77

By JAN TenBRUGGENCATE
Advertiser Kauai Bureau

LIHUE — Many plants have been brought to Hawaii as potential money-making crops. Now many of them now grow wild, their cultivation abandoned.

One such plant, introduced in the last century, would grow on dry, rocky land where most other crops would die. It would grow where the kiawe and panini, a cactus, flourish.

The plant was imported from Central America. It took its name from the port of Sisal, in Yucatan, from which it was first exported.

The plant's scientific name is Agave sisalana.

Its Hawaiian name (Agave is malina, a word that comes from marine. Rope made from sisal was used by mariners on ships that frequented the Islands.

Marie Neal's "In Gardens of Hawaii" and Otto Degener's "Flora Hawaiiensis" say the first sisal was brought to Hawaii from Florida in 1893 by the Hawaiian Commission of Agriculture and Forestry.

Some 20,000 of the plants were brought in and planted in the arid country at Ewa, on Oahu, and later on Hawaii, Maui, Molokai and Kauai.

The Knudsen family reportedly brought 300,000 seedlings to Kauai in 1902.

An industry got started about that time, and several firms were established. About 3,000 acres of sisal reportedly were under cultivation in 1918.

Degener reported that 600 to 900 plants could be grown per acre. The fibers from which the rope is made came from the thick leaves. One plant could provide 12 to 23 leaves per year.

Degener reports that an acre of sisal could produce 750 pounds of fiber, which sold for eight cents a pound in San Francisco in 1903. That comes to $60 per acre.

The rise in other profitable crops, and competition from South America, where labor was cheap, killed the industry. It was revived briefly in World War I, but died again.

The sisal, however, had been a useful plant. Its fiber was used for rope, twine and even, briefly, for hula skirts. The waste from the operation provided good fertilizer and cattle feed.

The sisal matures to harvest size in three or four years, and then grows for anywhere from five to 25 years before flowering and dying.

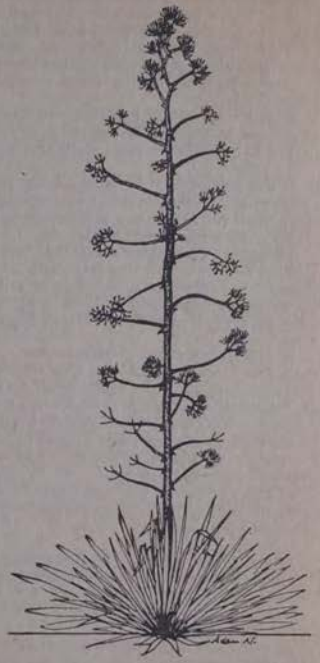
When it blossoms, the sisal shoots up a flower stalk several inches thick and several yards high. The stalks, when dried, are still sometimes used as fences, and one report said the inner part of a young flower stalk can be eaten.

Neal reports that the plant's uses in Mexico include the making of soap and killing insects.

In Hawaii, though, not much use is made of the sisal any more. Some people still collect the stalks for fencing material, and the plant is sometimes grown for decorative purposes.

Generally, though, the sisal is found in the dry wastelands of the Islands, where even a few cows have difficulty surviving.

It is one of the many agricultural products that were brought to the Islands to build an industry, but never made it through economic puberty.



The endangered palila bird

EDITOR—Whether caused by some lolo flicking his burning cigaret into the bushes or by intense sunlight focussed through a discarded bottle into tinder-dry grass, the burning the latter part of November of the endemic mamani (Sophora chrysophylla forma mauiakeaensis) forest upon which the endemic palila (Psittirostra bailleui) depends for food and shelter is a tragedy. This forest fire reduces the present few hundred birds of this famed endangered species to hunger and to reduction of space for breeding and nesting. But the palila has been subjected to such tragedy throughout its evolution in geologic time whenever the Goddess Pele enlarged Mauna Kea with volcanic eruptions and directed lava flows through its forests. After a resulting decline in population, the surviving palila always snapped back to its former abundance or even beyond as the area subjected to such a holocaust returned to its former forested state in a decade or two.

We botanized in Mauna Kea's decadent mamani forest as recently as July 30, 1977, hearing the bleating of sheep some little distance about us. We were then amazed at the great number of viable yellow mamani seeds peppering the ground, a condition that must have prevailed ever since tree and mountain existed together. Thus every time Madam Pele wiped out a mamani forest with her infrequent but regular eruptions, such mamani seeds sprouted to replace the old forest with a new one. This year's winter rains will cause the sprouting of the seeds as in the past. But, unfortunately due to the interference of man and his introduced varmints unlike in early times, feral goats and especially feral sheep will greedily seek out the tender seedlings to nibble them down to their roots, killing them "make, die, dead." As a result, without man's timely intervention NOW, the area presently devastated by fire will remain a burned out desert subject to wind and rain erosion—a second Kahoolawe. Do we "Primapes." want to leave such a heritage for our children to contemplate, or do we want to reclaim the land and save a remarkable bird from extinction? If the latter, we must foster the return to ancient ecological conditions. What may that be?

Exterminate Mauna Kea's feral goats and sheep so that mamani seedlings can grow to maturity to renew the palila's feeding and nesting sites.

Incidentally, such a mamani forest will milk clouds sliding over the mountain of their moisture as fog drip, augmenting Hawaii's artesian and ground-water resources.

Drs. Otto & Isa Degener
Volcano

Hunt

280

Drs. Otto & Isa Degener
P. O. Box 154
Volcano, Hawaii 96785
U. S. A.

Dec. ?, 1977

We are distributing these really self evident observations of ours to individuals and scientific groups here and abroad who may be interested. Locals do not realize how interested the outside World is in what they had thought to be a Paradise of the Pacific.

The Endangered Palila Bird of Hawaii

Whether caused by some lolo flicking his burning cigaret into the bushes or by intense sunlight focussed through a discarded bottle into tinder-dry grass, the burning the latter part of November 1977 of the endemic mamani (Sophora chrysophylla forma maumakeaensis) forest upon which the endemic palila (Psittirostra bailleui) depends for food and shelter is a tragedy. This forest fire reduces the present few hundred birds of this famed endangered species to hunger and to limitation of space for breeding and nesting. But the palila has been subjected to such tragedy throughout its evolution in geologic time whenever the Goddess Pele enlarged Mauna Kea with volcanic eruptions and directed lava flows through its forests. After a resulting decline in population, the surviving palila always snapped back to its former abundance or even beyond as the area subjected to such a holocaust returned to its former forested state in a decade or two.

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EXTERMINATE MAUNA KEA'S FERAL GOATS AND SHEEP SO THAT MAMANI SEEDLINGS CSN GROW TO MATURITY TO RENEW THE PALILA'S FEEDING AND NESTING SITES.

Incidentally, such a mamani forest would milk clouds sliding over the mountain of their moisture as gog drip, augmenting Hawaii's artesian and ground-water resources.

Aloha,

Drs. Otto & Isa Degener
Authors, Flora Hawaiiensis

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Do we "Primates" vandals want to leave such a heritage for our children to contemplate, or do we want to reclaim the land? If the latter, we must foster the return of ancient ecological conditions.

What may that be? EXTERMINATE MAUNA KEA'S FERAL GOATS AND SHEEP SO THAT SEEDLING MAMANI CAN GROW TO MATURITY TO RENEW THE PALILA'S FEEDING AND NESTING SITES. Incidentally, such mamani forest will milk clouds sliding over the mountain of their moisture, augmenting [illegible]

Drs. Otto & Isa Degener

The breakup of the library

I keep wishing the librarians would stop their fighting and power plays and get better acquainted with readers' needs. They are just fiddling while Rome burns, for on Jan. 12 the Board of Education is slated to approve the breakup of the main library as we know it. Hon. Adv, 12/24/79

Adult circulating books will be cut to 50,000, the size of the present children's collection. Children's books and services at the Main Library will be abolished, and the "State Library" will be just a string of branches that don't stock or keep much but popular and recent books, nothing in depth to help scholars and satisfy pleasure readers who like old classics and variety.

The main library "reference" (non-circulating) books will be kept, along with more administrative offices formerly at the Department of Education Building, and now jammed into the poor old library. But actually, a "reference" book is one you refer to to answer questions or provide information. An enormous number of questions and depth searches are answered from circulating books.

In a large metropolitan library like this one they go with reference books like bread and butter. Example: a reference book may tell you which circulating books contain the poem or story you want, but if you don't have those books in the library, what then? Throw out the circulating books and you lose many out-of-print irreplaceable treasures, many technical books, many minor authors that belong in a large library. This community treasure house should not be dispersed and lost.

If so, what will happen? More people will quit using the main library, like those who quit when they were denied the privilege of reserving the book they wanted — often impossible to find otherwise. Like those who can't park and make the library door before the 5 p.m. deadline for closing. Like those who will miss the easy-to-use card catalog, now being replaced by microfilm reels, which means lining up for reader machines in rush hours. These displaced readers will go to book stores and sales or to the University Library for their reading matter, instead of the public tax-supported library. If the library planners were better acquainted with readers' needs, they would hear some strong contrary opinions.

Here's what one parent said when told the main library Children's Room would close and give way to a "research" library. She works in town and has no library near her home, and after a moment of shock she said this: "Are they a bunch of screwballs up there? That library gets worse and worse. Everything they suggest is crazier and crazier. I don't believe in arranging things for the convenience of one group. I think they should serve us all — that's the idea behind a library."

Others may feel differently. But any one who wants to save main library services should write the Board of Education before it meets Jan. 12. Write to Darrow Aiona, chairman, Box 2360, Honolulu 96804.

Tell the board members what you want. It's no use spending more millions to build a type of library that people don't want. The cornerstone should be a Readers Bill of Rights, and the library should be built around it.

CATHERINE COLEGROVE
Former Head of Reader Service
Hawaii State Library Branch

Dec. 29, 1977

Dear Mr. Aiona:

With our unusually poor record of intelligence shown by pupils in primary classes in contrast to that of pupils in most States on the Mainland, and the evidence of low intelligence "Ah" of our "Ah" citizens when "you know" they "Ah" try to talk "Uh" to "Akuhead "you know, Ah" on the radio, sothing is wrong! Whether this poor showing is due to inferior human stock - not everyone has alii or samurai blood in his veins - or more likely poor chances for education in the State of Hawaii, I do not know. Of course, it may be both with many half-"blind leading the blind" in our schools.

Anyway, the intended break-up by members of the Board of Education of our present lib-"berry" system is a dangerous farce to be toying with at the present time. If anything, to compete with Mainland educated residents andor foreign tourists, the present strong library system today should be strengthened still more. It is bad enough that our expensive library buildings are actually just used part tim with short hours of librarians, too many days closed, to low salaries for experts in Library Science, and scanty funds for LITERATURE OF VALUE.

I hope you will use your influence to bether rather than worsen the Library System in the State of Hawaii so we can make use of it in its many phases to make up for our poor, neglected schoolomh.

I graduated from the University of Hawaii with an M. Sc., degree in 1923, after really hard study, under Pres. Arthur L. Dean. I was proud of my degree for many decades; but, now, that the University is tending to become a diploma mill with questionable courses and its libraries threatened with mediocrity, the degree for which I slaved means very little to outsiders.

In summary, with poor libraries, our population, growing in numbers & age, would be deprived of further educating themselves.

Dr. Otto Degener
Faculty, Univ. of Haw., 1925-'27.

Particular Point of View

Fire's Destruction

Hon. Star-Bull, By Otto and Isa Degener 1/7/78

WHETHER CAUSED by some lolo flicking his burning cigarette into the bushes or by intense sunlight focused through a discarded bottle into tinder-dry grass, the burning the latter part of November of the endemic mamani (*Sophora chrysophylla forma maunakeaensis*) forest on Mauna Kea upon which the endemic palila depends for food and sheter is a tragedy.

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Two veteran Island botanists point to the loss of habitat for an endangered bird caused by a fire on Mauna Kea.

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Suit to protest presence of game

HILO — The Sierra Club legal defense fund has taken formal steps toward bringing suit over the presence of wild game animals on the Big Island's Mauna Kea. Hon. Adv.

In a June 22 letter to Gov. George Ariyoshi and to Thomas S. Kleppe, which The Advertiser recently obtained, Sierra Club attorney Michael R. Sherwood of San Francisco said the State appears to be violating both its own Endangered Species Act and a companion act of the Federal Government.

Sherwood said the palila is a native Hawaiian bird living only on Mauna Kea's upper slopes that is an officially endangered species. It depends on the native forest of mamane and naio trees for its shelter, nesting sites and survival. 8/14/76

"UNFORTUNATELY, the Mauna Kea mamane-naio forest is steadily being eliminated by the foraging of nonindigenous, nonendangered feral (wild) goats, feral sheep and mouflon sheep.

"Rather than engaging in a program to remove the goats and sheep from this sole remaining palila habitat, however, the Hawaii Department of Land and Natural Resources is instead actively pursuing a program of maintaining their populations on Mauna Kea, presumably at the insistence of hunting interests."

Sherwood said the State is keeping the wild animals on the slopes by using money that comes substantially from the Pittman-Robertson Act. It was put on the books in 1937 and is known as the Wildlife Restoration Act.

"It is unambiguously apparent . . . that providing Federal funds for a State program that results in the ongoing destruction of the sole remaining habitat for an endangered species, thus jeopardizing that species' continued existence, directly contravenes the will and intent of the Congress . . .," Sherwood wrote.

"A FEDERAL AGENCY dispensing such funds is hardly 'encouraging' the State to 'maintain conservation programs within the meaning of the (endangered species) act; rather, the agency is encouraging just the opposite."

Particular Point of View

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Hon. Stat. Bull. By Otto and Isa Degener 1/7/78

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hapu'u harvesting in Ka'u is delayed

West Hawaii Today, Friday, December 30, 1977

Bishop Estate has withdrawn a request to expand hapu'u (tree fern) harvesting activities in Ka'u because its environmental assessment was inadequate, according to Lawrence Cunha, estate land manager.

Niu Nursery is currently leasing 150 acres of estate land to harvest the hapu'u, but wants to expand its operation to 300 additional acres in the Kilauea Forest Reserve.

Public hearings were scheduled on the Conservation District Use Application (CDUA) by the state Board of Land and Natural Resources in the near future.

Cunha said the estate's environmental assessment did not include sufficient data, and additional information would have to be obtained. He added the format of the assessment was also not in accordance with land pouru requirements.

Cunha speculated that the application would be refiled "maybe in a month or so."

He said the opposition of conservationists was not a factor in the decision, adding that there is "always some kind of opposition" to most applications.

Opposition has come from noted biologists Drs. Otto and Isa Degener, who have urged that an environmental impact study (more formalized than an environmental assessment) be performed to determine the effect of the harvesting on forest land.

The hapu'u helps to regenerate the underground water supply through fog drip and provides a home for many native birds and insects, according to the Degeners.

Isle Forestry Industry

THE NATION must look primarily to the private landowner to meet timber demands, and the private landowner needs incentives, the Hawaii Forestry Conference was told recently.

How an incentives program might be adapted for Hawaii was outlined at the conference, held late last month at Kokee, Kauai, by William M. Cannon. Cannon, forestry incentives programs specialist with the U. S. Forest Service, Portland, served in Hawaii 1969-73. He wrote the text for the book, "A Program for the State Forest Lands of Hawaii," published by the State Department of Land and Natural Resources in 1975.

Cannon's talk brought another factor to the continuing debate over the feasibility of a commercial forestry industry for Hawaii.

Plans for a commercial industry that would bring jobs, income and lumber to Hawaii are supported by the Ariyoshi administration. Gov. George R. Ariyoshi made a commitment to developing the industry in his address to the State Legislature in January, 1976, and again at the Forestry Conference in November of last year.

The private landowner needs incentives to produce timber, says William M. Cannon.

He called for a timber industry based on a 200,000-acre industrial forest to be planted over a 30-year period.

THE PROGRAM has been criticized by many persons who identify themselves as environmentalists. Mae E. Mull, for instance, raises serious questions about the economic feasibility of commercial forestry in Hawaii and says extensive tree planting would have a drastic effect on native forest ecosystems.

Her criticisms are in an article in the October 'Elepaio, journal of the Hawaii Audubon Society, of which she is the Big Island representative.

She supports the koa farming aspect of the forestry program, however, and says that "marginal or unproductive agricultural lands could be suitable tree planting sites for fiber forestry, fuel forestry or hardwood production — if the economic cost-benefit ratio is favorable."

She points to the Audubon Society's position that native forests should be unavailable as new planting sites for exotic timber.

Cannon, in his Kauai talk, said

Harry Whitten

that response on the Mainland to the Forestry Incentives Program (FIP), started in 1974, has been overwhelming. The program provides cost-share assistance to private non-industrial forest landowners, holding tracts of less than 500 acres in size, for carrying out prescribed forestry measures primarily for timber production purposes.

The program had been much more effective than a previous program known as ACP (Agricultural Conservation Program) which was started in 1936 as part of the Soil Conservation and Domestic Allotment Act. Nevertheless, more than seven billion trees had been planted under ACP since its start.

NEITHER PROGRAM has been used in Hawaii. Cannon discussed some of the reasons.

He said that economic analysis has shown that timber production could be feasible in Hawaii but that the best opportunities would probably be in high-quality hardwood lumber and veneer, or fiber and fuel-wood from eucalyptus or pine on a short-rotation basis.

But the intent of Congress is that the "primary" purpose of FIP is the production of softwood sawtimber and plywood.

"Hawaii cannot compete with the Southern states or the Pacific Northwest in growing softwoods," he said.

The 500-acre limitation rule is another serious constraint in Hawaii, he said, in that it excludes the large landowner who would most likely take the initiative.

THERE IS a provision for waiving this limitation, on a case-by-case basis, and the State Forestry Division is now requesting waivers for cases on Maui and the Big Island.

"I believe the chances are good that we can finally get a few FIP projects going in Hawaii," Cannon said.

"Perhaps what is needed in Hawaii is a State-financed forestry incentives program...a program which, like FIP, would be timber-oriented...that is, directed toward Hawaii's best timber-producing sites...but having the broader objective of creating the socio-economic and environmental benefits that would accrue to the people of Hawaii."

He said that Virginia and Mississippi have introduced such programs and that California and several other states are considering them.

"These approaches have borne fruit on the Mainland, and with some modifications, I believe they can in Hawaii as well...Incentives do offer a politically and economically realistic method of securing long-term public values from forest land in private non-industrial ownerships."

EARLIER IN HIS talk Cannon presented statistics on the importance of privately owned forest land in the nation. He said that three-fourths of U.S. forest land is privately owned, that the forest products industry owns 14 per cent of the nation's forest land.

An increased share of the timber supply must come from the 295 million acres of forest land in farm and miscellaneous private ownerships, he said.

Cannon said that Hawaii has a greater proportion of its total land area in prospective commercial forest land than the nation as a whole but is almost totally dependent on imported lumber.

The Forestry Conference this year included a field trip to look at land management problems in West Kauai and included talks on parks, wildlife, water, forestry, pollution, and natural resources planning.

Hapu'u Harvesting

DRS. OTTO AND ISA Degener, veteran Island botanists, have called to the attention of William Y. Thompson the ecological problems that may result from expansion of commercial harvesting of hapu'u (treeferns) in Kilauea Forest Reserve on the Big Island.

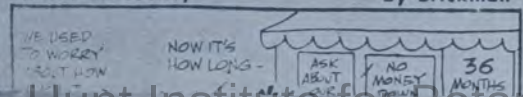
Thompson is chairman of the Board of Land and Natural Resources.

The Degeners say that many streams formerly filled with rapidly flowing water and harboring native fish or shellfish are running dry.

They say that the treeferns trap water in fog drip "like the drops of moisture condensing on the outside of a glass of ice water. Such rain and fogdrip is caught by the living treefern and its dead trunks, as would a sponge, and eventually trickles down to replenish our artesian water supply."

They say that besides treeferns, the area harbors other trees and plants that should be saved, including some that are quite rare.

the small society by Brickman



Scholarship

FORUM

the Readers' Page

A Particular Point of View • Wednesday, April 5, 1978 Honolulu Star-Bulletin A-19

Rainbow Falls Hospital for Hilo?

Hilo Hospital

Dr. Bossert: Aloha, O.D.

By Otto Degener

Author, "Flora Hawaiiensis"; retired president, T.M. Cardiology Association.

Degener fears the Hilo Hospital is endangered by earthquakes; he proposes a new hospital on the Hamakua side of Wailuku River.

THOUGH THE Tin Man in the Wizard of Oz craved a heart, just any kind, and finally got one, I craved a heart that would be less sensitive to the environment about me. With this in mind, I visited the Hilo Hospital to have two famed Wizards of Medicine control the unbridled prancing and racing of mine with a pace-maker.

My stay during the breaking of my bronco, named "Pegasus," was surprisingly comfortable, interesting and as expected medically successful. The floors of the building were so immaculate I could have eaten my meals off them had not habit accustomed me to the use of a table. The staff was efficient.

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COLLECTED BY OTTO DEGEN AND ISA DEGENER

8—Hawaii Tribune-Herald, Sunday, April 2, 1978

Part-timers in Volcano are the Drs. Isa and Otto Degener and since they are "in residence" at present, I had asked for some news for the column. Both Degeners are world-renowned botanists with many published books and papers to their credit, the most well-known being Dr. Otto Degener's "Flora Hawaiiensis," which is THE authority on plants in the Islands. This eminent scientist also has a very subtle sense of humor; he replied to my request for news by sending me by registered mail an essay of some 100 inches (this column is less than 20) entitled Rainbow Falls Hospital Hilo. It is written "tongue-in-cheek" style and details his ideas on location, room decor and landscaping — this he says should be done in native plants not 'da haole kine.' I like his name of Rainbow Falls Hospital, especially as he suggests that it be built Hamakua side and makai of the Falls so their ever changing beauty can be enjoyed by employees and "guests' alike. He feels rather close to the subject as he recently stayed there while acquiring the welcome addition of a pacemaker.

"PLANTS HAW. NAT. PARK"; & NOW ILLUSTRATED "FLORA HAWAIIENSIS" AVAILABLE FROM

Supt. to Hilo Hosp., S.H. Sohmer,
Mabel Dawson, W.D. Calvert, Mgr. of Mass. Alumni Assn.
Mid-Pac, Barb. Distributors, Sydney, George Rock (Selby), Kapoor, D. Cabral
Braunschweig (Israel), Nuernberg, Hörmann
Mertonic (Pacemaker Co.), Hans-Robert Altemann, Flora Wiesiana
Yarden, Peter Raven, Dick Howard, Henry de la Montagne, Rene Sylva,
Lausanne, Manchester, Tenbuggenuke, Takahagi, Sotka,
Representative-David Alsabo, Fee
Charles Judd, Mary McGuire, Hart Cassidy, Wirth,
Explorers Club, Henderson, Mull, Fryxell, Rc Federov, Riedl,
(Pensacola)
Brevan
Muir, W Flo, Barckhaus, Jack Fogg, Jim Eaton (Wilderness Soc),
Ev Bowyer, Miles Sparre, Hadac, David Churchill, Baetzer, Jiminez
Jo Jim Fleming, Brayshaw, Sister Margaret (Roe), Va Nelson, Bill Hatheway
Teixeira, Barbara Wells, Van Riper, Salt,
Degener, Lund, Kyoto, Kanazawa, Melbourne, Moscow, Stebbins,
Karlsruhe, Geneva,

Court will not halt diversion of Hanawi Stream

Maui News 7-26-78

Q. Decision appeal "For Hanawi" is 1/17/76 was ignored.

By BOB JOHNSON
Staff Writer

Circuit Judge S. George Fukuoka has ruled that the conservationists who sued to stop East Maui Irrigation Co. from diverting water from Hanawi Stream in Nahiku did not prove their case and he found in favor of the company.

The suit was brought by Life of the Land, the Conservation Council of Hawaii, and others against EMI and the State Board of Land and Natural Resources in February, 1976.

It asked the court to nullify the board's permit issued to EMI in February, 1976, and to require the board to prepare an environmental impact statement and hold public hearings before allowing the steam diversion.

During a two-day trial last month the plaintiffs argued primarily that the diversion would threaten the existence in the stream, and possibly in the world, of the Hawaiian goby, or o'opu alamo'o, a small fish which Dr. John Maciolek testified should be recognized as an endangered species.

JUDGE FUKUOKA, who heard the case without a jury, noted that he was limited to ruling specifically on the question whether, in granting the permit to EMI, the state board's decision was "unreasonable, arbitrary, capricious, or characterized by abuse of discretion."

He found that it was not, that the plaintiffs, who had the burden of proof, had failed to prove that it was. He denied all the relief asked for in the suit and brought "judgment in favor of the defendants."

He supported his decision with a list of "findings of fact" elicited in the trial which included:

— That EMI proposed to install pumps and a pipeline at Hanawi Stream to Wailoa Ditch, and to pump from the stream during drought conditions only up to 10 million gallons a day of water.

— That EMI has contracted with the County of Maui until 1994 to supply the county from Wailoa Ditch up to 16 million gallons a day and that during droughts the level in that ditch is at or below that figure.

— That Hanawi Stream flow during drought conditions is about 10 million gallons a day and that the flow in the stream below the pumping site during diversion would be about 2.5 million gallons a day.

— That the main effect of the stream diversion would be on "the relative abundance of the aquatic community of stream fauna" below the diversion site.

— That this community includes the Hawaiian goby fish and a mollusk, the hihiwai, and that the goby is not listed as an endangered species by the State of Hawaii or the United States, but is so listed only by the American Fisheries Society, a private, non-government organization.

— And that the State of Hawaii has opposed any listing of the Hawaiian goby as a rare and endangered species.

In his ruling Fukuoka listed as "conclusions of law" that the use of Hanawi Stream sought by EMI was a permitted use under the land board regulations in effect at the time the permit was issued and so no public hearing was required.

ON KAUAI this week Maciolek said he was "sure" the ruling would be appealed. Walter P. Zulkoski, attorney for Life of the Land, the Conservation Council, and the others, could not be reached in Honolulu.

State of Hawaii has opposed any listing of the Hawaiian goby as a rare and endangered species.

Richard H. Cox of Alexander & Baldwin, Inc., which owns EMI Co., said in Honolulu yesterday EMI must still get a shoreline management area permit from the County of Maui before it can proceed with the Hanawi Stream diversion.

There also was the possibility that EMI would have to comply with proposed new Department of Health regulations under the Federal Clean Water Act that would set standards for stream flows in the state as a means of preserving the life in the stream.

Cox said the Hawaiian Sugar Planters Assn. and the counties have opposed this regulation as inappropriate to the Department of Health's jurisdiction and that an attorney general's opinion is being sought on this question, with the indication that the jurisdiction should be under the Board of Land and Natural Resources.

The tea ceremony's a booming business

By SAM JAMESON
Los Angeles Times Service

TOKYO — The outward images of Japan today mirror the stepped-up tempo of the times — factory workers gulp instant noodles, commuters scale train station steps three at a time, an electronic sign reports decibels of street noise like time and temperature while teen-agers gyrate in discos.

"An oasis is needed," said Soshitsu Sen. "Tea is such an oasis."

Sen, 55 and graying, is the acknowledged high priest and chief advocate of the centuries-old Japanese tea ceremony.

Its study today has drawn an estimated 10 million Japanese, seeking to step back, however briefly, four centuries into the serenity of their spiritual roots and to find "something Japanese."

It also has brought Sen a fortune from the pyramiding fees paid by students as they climb the seven karate-like basic "certified" ranks toward the exalted goal of their own "tea name."

Officially announced tax records disclose that Sen's personal income in 1977 was $1,188,550 — more than any singer, actor or actress in Japan.

The tea ceremony, in essence and performance, is designed to display through painstaking ritual how people care for and respect each other, an esthetic sharing of an appreciation of art and nature.

It still forms the basis of Japanese etiquette in a wide variety of social settings that do not involve tea.

"Sometimes man must renew himself," Sen, 15th descendant of Rikyu Sen, recognized by history and society as Japan's first grandmaster of tea, said of the tea ceremony.

Now head of the Urasenke — the Rear House of Sen — he believes that "The calm of the tea room, the graciousness of the host, the feeling of nature in the implements of the tea ceremony and the relaxing green of the tea itself...come together to quench man's thirst physically and spiritually."

Like many aspects of Japanese culture, tea was introduced from China in the Eight Century, both as a plant and as a drink, but the Japanese turned the use of it into an art.

The ceremony, as well as Urasenke, is traced back to the year 1591, when Rikyu Sen performed it to say goodbye to his five closest disciples.

After the ceremony ended and the five had left, Rikyu Sen carried out an order — issued by the shogun, the ruler of Japan, for reasons lost in the passage of time — to commit **seppuku** (hara-kiri), or suicide by self-disembowelment.

The third generation Sen divided his posessions among his three sons — one receiving, literally, the front of the house; another the rear, and the third a separate house.

The present grandmaster is a descendant in the line of the man who received the rear (**ura**) of the house (**ke**). Thus the name, Urasenke.

"A bowl of ceremonial tea is nothing more than hot water an powered tea. But if they aren't put together properly, you have nothing," Sen said.

Students spend hours learning to serve tea at the correct temperature (180 degrees) with exactly the same "perfect" mix of hot water (half a cup) and powder (two teaspoons). The "perfection," however, must be achieved by practiced instinct.

The guest, or a student during a lesson, expected to be just as ritualistic.

An intentional slurp when finishing a cup of tea, for example, is required to show that the guest has drunk and enjoyed the tea to the last drop.

Opening the sliding door of the tea room requires a kneeling position. Crossing the threshold also requires remaining in a kneeling position and pulling one's body forward.

Admiration of seasonal wild flowers arranged to appear as if they were actually growing out of a small vase in which they have been placed in an alcove also is required.

And a comment on the philosophical advice offered in a calligraphy on a scroll in the alcove is pro forma etiquette.

One example of such advice: "Attack your faults as vigorously as you fan away the summer heat."

Tea provides an oasis from the stepped-up tempo of the times but also can prove costly to one seeking his own "tea name."

All the steps of the ceremony are specified in books and photographs. And only Sen, as master of Urasenke, can change any of them.

At the very least, 15 minutes will pass before a cup of tea is ready to drink. That is more time than most Japanese spend at breakfast every morning, a manufacturer of Western-style black tea who made a market survey on the subject discovered.

A particularly elaborate tea ceremony can last an hour — during which the attention to detail is meant to demonstrate how much you care for a person.

While the tea ceremony today is a booming business, it still operates on feudal principles common to the days in which the art began, and Sen is the modern-day feudal lord of the structure.

Perhaps 85 percent of today's students of the art are young, unmarried women.

They consider it a social grace necessary, or at least useful, for married life. Most of them study the ceremony an average of three times a month for four years or more.

Both they and the others who go on — in no fewer than 10 years — to attain a "tea name" and the title of teacher seem to share one thing in common. All are looking for "something Japanese." Serious students say they find new meanings in the art for their own live.

Harukiyo Okuyama, 35, a lieutenant in the Air Self-Defense Forces who is one of the rare male students of the art, said he started studying it "Because I wanted to study something Japanese and there was nothing else available in Hokkaido, where I was stationed."

That was 10 years ago. Now, Okuyama said, he has discovered that his "way of thinking has become more practical because of the discipline of tea."

An estimated 100,000 teachers owe their accreditation to the Rear House of Sen, having gained it from students of students of earlier grandmasters or from present-day teachers who belong to Urasenke.

Hundreds of sub-houses of tea exist but at the top the clan-like organization which supervises them all is Sen.

Although students at the early stages of learning pay only a relatively modest sum of $25 a month for three lessons to their teachers, promotions through each of the seven basic ranks must be certified by Sen — for a fee.

Certification fees rise with rank to what are reported to be staggering proportions.

"We can't tell you how many tea names have been certified — because of tax problems," a member of the staff at Sen's Kyoto headquarters said, but Sen is on the public list of the top 100 earners in Japan.

Sen has become so famous he was sought out to appear as one of a series of great artists featured in television advertisements. The ads, however, were for instant coffee.

"I never drink the stuff," Sen said, and declined.

To get a rough idea of how much money is involved in tea, consider the $75 fee that a teacher receiving a new "Tea name" would charge those attending a special ceremony to celebrate the occasion.

With as many as 500 persons attending, such a party would bring in up to $37,500.

That figure is believed to indicate that a teacher pays the Urasenke at least $10,000 for receiving the new name.

Certification for the first tea rank — which virtually all of the 10 million practioners and students achieve — costs $17. About half of the payment goes to the individuals' own teacher and the other half to Urasenke.

The Rear House of Sen is by far the largest of three such "houses," each tracing its ancestry back to the original Rikyu Sen.

In terms of the tea itself — a special green powder used mainly for ceremonial tea — 597 tons were sold in Japan last year.

Ceremonial tea (**matcha**), unlike ordinary clear, light green tea (**ocha**) which Japanese drink as Americans consume coffee, is dark green, has a stronger flavor and is served with a rainbow-colored foam on top.

Join the Forum

The Star-Bulletin offers this Forum page twice a week, ordinarily on Wednesday and Saturday, for readers to air their views on issues facing our community.

New contributors are especially welcome.

Space considerations require us to give preference to shorter letters and to reserve the right to publish only excerpts. Letters over 200 words are used only when they are deemed of special merit.

Letters are chosen for publication with a desire to present a cross-section of opinion, and for interest and significance.

Disagreement with the policies of the Star-Bulletin in no way disqualifies a letter from publication.

Send contributions to Forum Page, Honolulu Star-Bulletin, P. O. Box 3080, Honolulu, Hi., 96802.

Be sure to sign your letter, give your return address and a telephone number that can be used for verification. Letters, typewritten, double-spaced, are preferred.

Let us hear from you.

FORUM

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A Particular Point of View

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Appreciation

In a man's span of life, I do wonder how many of us profess or make an open declaration that he appreciates the devotion given by a dutiful wife who has kept that marital vow, "To have and to love, honor and respect till death do us part"?

My wife, Bertha, has been married to me for 46 years, and all those years, she has been a very considerate mother of five children and a loving grandmother of 11 grandchildren.

The Oriental way of showing appreciation and affection to their helpmates is stoical, not like the Caucasian, who demonstrates affection openly in public.

I must admit that most marriages are not smooth sailings; there are bound to be arguments, but the beauty of it, especially in our marriage, is that attitude of forgetting and forgiving, and let the past go by.

Bertha is the prima donna of forgiveness.

Socially, get her in a conversation, she can entertain you for hours.

All in all, to me it is far better to eulogize the living than to lavish your praises to the dead.

Dr. Wai Sinn Char (D.D.S.)

Incredible

It is incredible what some will do to block Mayor Fasi's bid for the governorship. The Kukui Plaza fiasco failed; years of innuendo and attacks on his character have failed. Now it's State Rep. Peters' resolution to amend the State Constitution so that the candidates for the office of governor or lieutenant governor must be at least 35 years old.

Pornography

Pornography, like certain other "vices" such as abortion and marijuana has always been readily available in our society to those with the money and desire to find it. I resent the implication that Sweden and Denmark lead the world in the "demise" of sex.

While it may have been unique to [illegible]

Legal Aid

The Legal Aid Society's "inclique" really believes they can fool the public with red herrings.

First a letter appears in the paper from a writer who claims it is unfair to withhold state funding from the Society as retribution for its "advocacy" [illegible] against [illegible] and now [illegible] charge [illegible]

fumes in ship's hold, tunnels, exposure to gasoline fires, and explosions.

At present only elected officials, police, firemen, and the Correctional Institutional employees are enjoying the 25 years retirement at any age with full benefits. Why isn't the ambulance paramedic included? [illegible] and [illegible]

Harry [illegible]

VD Prevention

I cannot agree more with your reader, Sue Hall (March 28) and her statement: "Why should our legislators stand in the way of sensible birth control and VD prevention?"

Unfortunately, the context of her letter may have implied that I condoned the action taken by [illegible] police and the administration [illegible]

State Capitol

Considering the question raised in the April 1 editorial over the location of Hawaii's upcoming Con Con 78, childhood memories returned to a fable about the Emperor's invisible clothes. In that story, if you recall, there were many believers (pro) and non-believers (con), and the audience (public) probably regarded the tale as bordering on the unbelievable. So much going over fabric and fashion.

The cherished purpose Con Con 78 is attempting to propagate, transcends municipal place or architectural settings, albeit the symbolic importance of site selection. We would prefer editorial attention focusing on more fundamental problems, such as, informing our Hawaii community to vote on special elections day May 20. Con Con 78 shall stumble short of its representational principles if candidates run for delegate seats in an election where our citizenry become the "invisible clothes" of Con Con 78.

James Y.S. Yap
Tomoki Paul Keola Kusunoki

I cannot but agree with the leadership of the House and Senate in refusing to allow the Con Con delegates the use of the auditoriums and facilities.

After all the delegates will be just (hopefully) taxpaying citizens and not professional politicians. They may scratch their names on desks, sit in the hollowed seats in soiled clothes. Stay awake during long sessions, attend all committee meetings, things that some members of the House and Senate could not tolerate from non-professionals.

The biggest transgression, this Constitution Convention may bring about changes sorely needed such as initiative, referendum, recall, election of judges and prosecutors, right of counties to tax (hotel room tax) etc.

So keep it up, House and Senate members, against the Con Con being held in your private sanctum.

James J. Shannon

Spanish Ships

I'm sorry I am just getting around to presenting an answer to the newspaper story by Wendell Carismith on whether the Spaniards discovered the Hawaiian Islands before Cook.

I always have presumed they did. There aren't many historians working in this field any more, and we may never get a definite answer.

The Spaniards were very secretive about their discoveries, particularly ones they could not readily defend, and purposely hid reports and surveys from their rivals.

This was true of the Cabrillo voyage of discovery along the California Coast. The formal log of this journey has never been found, and all we have is a notary public's condensation of what it said, which was on file originally in Guatemala.

For all practical purposes, Cabrillo never made the journey; his

N 290

Draft to Mrs. Zieber 11/21/58
Miller, Miles,
Hagerling
Mrs. Mount, R.N.
Hon. mag.

RAINBOW FALLS HOSPITAL, HILO
by
Dr. Otto Degener
Author, Flora Hawaiiensis
Retired Pres., T.H. Cardiology Assn.

Though the Tin Man in the Wizard of Oz craved a heart, just any kind, and finally got one; I craved a heart that would be less sensitive to the environment about me. With this in mind, I visited the Hilo Hospital to have two famed Wizards of Medicine control the unbridled prancing and racing of mine with a pace-maker. My stay during the breaking of my bronco, named "Pegasus," was surprisingly comfortable, interesting and as expected medically successful. The floors of the building were so immaculate I could have eaten my meals off them and not habit accustomed me to the use of a table. The staff was efficient and valued with a "zip" of energy that might be best described in the vernacular as ka hana oi.

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When I move my post-mater changed for a newer model some years hence, I hope to be housed, not in the old Hilo hospital; but in the newly built, earthquake proof "Rainbow Falls Hospital" constructed on former mauka land on the Hamakua side of the Wailuku River. It is not to be situated just about anywhere satisfactory to a practical architect who may never require hospitalization. I want it to be proud of the Falls if at all possible so that every employee waiting outer hallways and every patient lying on high beds overlooking window sills or near low windows can enjoy the ever-changing falls; dark waters in various volumes according to the season in falling over the reef living off sea and spray from the, hours vividly colored by the sun's rays or softened by clouds during the day; moreover, the same dark waters gently become strangely perfumed by moonlight and romantically in poor taste during black nights by search lights. The selection of such a choice vantage point is a challange to competing architects, the winner for the plan deserving immortality.

The decor of the room for patients should not consist of floral designs, perhaps dreamt up in a marijuana smoke-filled room by some commercial artist who draws a monstrosity of seven petunia like for a flower properly having but six, or an abortion consisting of four petals for a flower properly having five. I want the design to consist of pleasing human faces staring at me seemingly on the verge of gayety. That a patient is admonished not to forget to "take occasional deep breaths" to forestall symptoms of pneumonia is far less beneficial than being subconsciously persuaded to exhaust stagnant, "halitosic," residual air from the damp, dark, slimy recesses of the lungs by a normal, sleepy yawn between and after meals. Bon appetit and moinoi.

The grounds should not be misplanted, as so many are of local hotels, to African erythrina and tuliptrees, Brazilian bougainvillea, Mediterranean oleander and similarly boring foreign cultigens by carpetbagger landscapers. The present generation of residents and tourists alike are too educated and blasé to be impressed by mere color. Remember, the latter have come to Hawaii to be exposed to Hawaiiana in a setting of Hawaii's (not Kauai's, Oahu's, Molokai's, Lanai's or Maui's) curious and beautiful endemic plants on the verge of extinction. They don't want to see ~~lava~~ haole girdling our Earth with an intellectually stressful, wide belt along its expansive Equatorial sides. Due to ~~fast~~ visitors, such a ~~Rainbow~~ Hospital in such a unique setting would spread the fame of Hilo throughout World centers of tourism.

When the "Rainbow Falls Hospital" stands, I hope to be one of the first to enjoy its hospitality. Should illness fail me, perhaps I can call upon a kahuna lapaau to help me malinger sufficiently to gain access to one of its yawning rooms. Good night, good ni---.

Dr. Otto Degener
4 Reed 204

Advertiser photo by Charles Okamura

Dowson: It all started as an escape from the "blood and guts" world of police work.

When Joseph Dowson Sr., wanted to escape the "blood and guts" world of a police officer, he retreated to a quiet studio to paint away his frustrations.

Paintings from those days cover every wall in his comfortable home, from powerful Hawaiian seascapes and waterfalls to delicate ladies in holokus.

"It (painting) was a hobby to get away from reality," Dowson said, who retired from the force in 1976 after 29 years of public service.

Dowson had decided to become a police officer after college graduation because "it was an adventurous occupation. I couldn't be tied down to a desk."

But a police officer's daily bout with public harrassment needs an outlet like painting, he said. "Without this outlet you become a stale, dull person. A robot," he said.

"You don't call the cops when you're having a good time. It's always trouble," he added.

Dowson said painting, especially abstracts, took his mind off that daily reality. Art was like "an open door, an oasis."

The 52-year-old Dowson now spends more time painting, and teaches classes at the Honolulu Police Department, military clubs and his home in Wahiawa five days a week.

During sessions at the Pawaa Annex, Dowson says police officers "splash paint on the canvas if they're mad," and one officer tore up his canvases when he was through, which helped him release daily aggression.

The Maui-born Dowson also teaches children ages 6 to 18 on his patio every Saturday, and many of his students have gone on to open their own studios in the Islands, he said.

He has created an estimated 5,000 works in his career, and gained recognition from artists associations, the state Foundation for Culture and the Arts, and the Honolulu Watercolor and Serigraph Society.

Two of his works were recently at the Volkerkunde Museum in Vienna on a cultural exchange program.

A showing of his pieces entitled "This Is My Hawaii" has been featured this week at downtown's Financial Plaza of the Pacific.

Dowson's artistic talents made him somewhat of a celebrity during his stint in the HPD, and he claims to have instituted the work of the criminal artist into the department.

"In all my cases, I was able to sketch the suspects. These sketches would be put into the bulletin," Dowson said. The effort was viewed favorably by the department, and HPD now hires regular artists to do the job, he said.

After 29 years of being a "pineapple cop" ("Everytime we had a luau, I had to bring the pineapples."), Dowson retired early.

But he still keeps busy teaching painting and working as an investigator for a local attorney. He calls his investigator's job of aiding those charged with crime a "challenge." "I'm learning the other side of life," Dowson said.

He's also at the zoo fence every Sunday, selling abstracts and Island scenics with 27-year-old daughter, Ipo Nihipali.

She was recently named one of the Hawaii's 10 best artists, and has spent most of the 14 years of her artistic career painting under her father's guidance.

Dowson's other children are Roxanne, 17, and Gaylord, 24. And there's 29-year-old Joe Jr., who like his sister has followed his dad's footsteps — but on a different path.

Joe Jr. is a police officer.

All of these plants are suggested for a brilliant, marvelous, almost Mediterranean-like, Hawaiian-Portuguese garden. I wonder if any group in Hawaii is interested in constructing and planting such a garden?

Iolani Palace history

On Dec. 18, TV-2 presented an award-winning film: "Christmas Time with Eddie Kamae and the Sons of Hawaii." It was a most enjoyable show — so very good that one hesitates to point out that it was historically inaccurate. It started with a sketch showing King Kamehameha IV leading a procession to Iolani Palace for the first Christmas services on Dec. 25, 1862.

But there was no Iolani Palace in 1862. Its cornerstone was laid Dec. 21, 1879; it was completed in late 1882, and formally opened with a banquet given by Kalakaua on Dec. 27, 1882.

King Kamehameha IV did proclaim Dec. 25, 1862 as a general Christmas holiday. Services were held Christmas Eve in a temporary Anglican Church at Peleula (now Nu'uanu at Vineyard). After the services, a torch-lighted procession led by the King, Bishop Staley, and the choir marched down Nu'uanu Ave. to King St., then to the Fort St. residence of Bernice Pauahi Bishop where a carol was sung, then to the Beretania gate of the old palace — much smaller than Iolani Palace, and at about the location of the present Hawaii State Capitol.

EMERSON C. SMITH

The reviewer is one of Hawaii's foremost novelists and authorities on Captain Cook.

CAPTAIN COOK IN HAWAII

By TERRENCE BARROW
Island Heritage Collection, $12.50

Reviewed by O. A. Bushnell

Hon Adv 1/1/78

book review

Unheralded and unnoticed, even in this bicentennial year of Captain Cook's arrival in Hawaii, a book has appeared which is worthy of attention and praise. Dr. Terrence Barrow's "Captain Cook in Hawaii," an excellent account of the events and the personalities that make the year 1778 so important in our history.

Barrow's book is not just another warmed-over rehash of the big occasion, not another quick leaping upon the bicentenary bandwagon merely for the sake of making a fast buck. We have had plenty of those lucubrations for anniversaries past, as we shall be afflicted with more for those in the future. But Barrow's book is not one of that unwanted sort. It is an . . . ira ble and valuable addition to the paucity of literature about our vanished past.

BY BIRTH BARROW is a New Zealander, by youthful allegiance a Commonwealth man proud of being a descendant of Britain's yoemen, by education an anthropologist-historian, by experience a cosmopolite a sailor in spirit and despite long service at sea during World War II—a gentle man. The book he has written about Captain Cook's sojourn in Hawaii unites all those influences, as well as many others he has acquired during a varied career in many countries.

The most important of these virtues, as far as readers are concerned, are an easy and literate style in writing; an expert's knowledge of the arts, artifacts sciences, and technologies in the late 18th Century; and an understanding of all the cultural forces that affected the mariners of Cook's expedition and the members of the indigenous society who 200 years ago greeted those impressive foreigners who came from the ocean sea. The combination of such abilities in one man is rare. The book a man of such abilities has created is, accordingly, a pleasure to read—and an education as well.

As might be expected, it is a scholarly work, and therefore correct in its facts, balanced and just in its interpretations. But it is not another stuffy exercise in pedantry. Nor is it simply a pasting together of excerpts clipped from the expedition's logs, journals diaries, official reports, and other documents. It is, rather, Barrow's own original narrative, drawn from those sources of course, but enriched with his thoughts upon the history of that fateful year which had so many serious consequences for Hawaiians.

THE WHOLE FASCINATING story is presented in language that is clear and graceful, never awkward or

1977 Woldenke, Book reviews 277

"ENDANGERED PLANT SPECIES OF THE WORLD AND THEIR ENDANGERED HABITATS: A Selected Bibliography" compiled by C. R. Long & M. A. Wiasek, 17 pp., for the Council of Planning Librarians, P. O. Box 229, Monticello, Illinois 61856. 1977. $1.50 paperbound.

This Exchange Bibliography No. 1299 has been prepared by the director and a research librarian of the New York Botanical Garden Library happily "to document world-wide efforts to list endangered plant species and their special habitats" so that interested (or to be interested) members of the public may have ready access to well over 200 scientifically prepared articles and books that could lead in saving these treasures in our earthly environment.

This publication should prove a time-saving and/or information boon to librarians and teachers in school and public libraries.

It is curious to note that Reveal's two papers on this subject in PHYTOLOGIA (1976, 1977) are not included, nor any of the scores of papers by Degener, a modern "voice crying in the wilderness" of Hawaii!

"HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN — Together with Those of Nepal, Sikkim, Bhutan and Ceylon", Volume 7, by Salim Ali & S. Dillon Ripley, 236 pp., illus., Oxford University Press, London W.1, Bombay, & New York, N. Y. 10016. 1972 [1973]. $17.50.

This Volume 7 presents in Order Passeriformes, Family Muscicapidae, the subfamilies of Sibbleas, Timaliinae and Muscicapinae

"Volcano Views"

by Virginia Dicks

Contributions to this column can be made by calling Virginia at 967-7231 or by writing to P.O. Box 116, Volcano, Hi., 96785.

VOLCANO—Dr. Otto Degener has received very special recognition from our state Senate as set forth in Resolution number 294 of the Tenth Legislature 1979. This official document commends Dr. Degener for his contributions in the preservation of Hawaii's unique island ecosystem and our wildlife resources which have adapted and evolved in our isolated oceanic environment over many thousands of years. He and his wife Isa are well known and highly respected Volcano residents.

Dr. Degener will be 80 years old this year and for 50 of these years he has been a voice in the wilderness (so goes the resolution) steadily appealing year after year for the recognition of Hawaii's botanical wonders and conservation of their habitats, having no peer in his unshakeable, deep commitment to Hawaii's natural environment and has been tireless in his forthright, fearless efforts to educate and influence government officials, developers, journalists, other conservationists and the general public to seek protection of the native habitats from the bulldozer, feral mammals, introduced game and introduced weeds that naturalize in our native forests.

And so the resolution goes on for 12 "Whereases" as it tells of his love of the fauna and flora of our islands; tells of his books Plants of the Hawaii National Park and his world renowned seven volume Flora Hawaiiensis comprising an unparelled collection of information on plant life in Hawaii. These are two of his best known books among the many other publications he has authored, many with his wife, Isa, who is also a well known botonist.

This Senate Resolution was sponsored by John Carroll and signed by 22 other senators.

Otto Degener is still very active in his research and writing projects, his zest and good humor still a part of his remarkable stamina. We shall look forward to having the Degeners back in their Volcano home perhaps later this month.

Our thanks to Mae Mull for sending me a copy of the Senate Resolution.

Quentin Tomich, outgoing president for the Conservation Council for Hawaii (CCH), presented Don Reeser, management ecologist with the Hawai'i Volcanoes National Park, with the Conservation Award at their annual meeting May 29 at Honua Hawai'i. Haw. Trib.-Herald, 6/15/79

The award read:

"To Donald W. Reeser, in recognition of his energetic establishment and successful implementation of a politically acceptable program for control and elimination of the feral goat at Hawai'i Volcanoes National Park.

"As resource management ecologist for the Park since 1970, Don Reeser has developed a plan for promoting recovery of rare and endangered plants, and for the return of such species to former known ranges.

"As President of the Hawaii Island Chapter of the Conservation Council for Hawaii, Chairman of the Hawaii County Fish & Wildlife Advisory Committee, Member of the State Animal Species Advisory Commission, and of the State Mauna Kea Master Plan Committee, Don Reeser demonstrated a special talent for effective communication, at all levels, with his fellow citizens; thus improving public relations between the hunting fraternity and professional wildlife managers, citizen participation in the conservation movement, and agency responsibility for land management in the State of Hawaii".

HAWAII CONSERVATIONIST HONORED

Dr. Otto Degener was commended by the Hawaii State Senate in a resolution adopted on March 22, 1979 for his outstanding service to Hawaii over five and one-half decades as a botanist, author and conservationist. The resolution was introduced by Senator John S. Carroll and signed by 23 senators.

Among Dr. Degener's signal contribuions, the resolution points out the following:

"Dr. Degener's many works, including *Plants of Hawaii National Park* and the seven-volume *Flora Hawaiiensis*, comprise an unparalleled collection of information on plant-life in Hawaii, and stand as a remarkeble resource in itself to students, teachers, scientists, and laymen alike, both locally and world-wide. . .

"Dr. Degener has been an inspiration to countless others in teaching the values of native ecosystems, in encouraging study of Hawaiian plants, and in recruiting new workers for protection of native wildlife and plants. . .

"Dr. Degener stood alone for most of the past fifty years as a voice in the wilderness, steadily appealing year after year for recognition of Hawaii's botanical wonders and conservation of their habitats, having no peer in his unshakeable, deep commitment to Hawaii's natural environment. . .

"Dr. Degener has been tireless in his forthright, fearless efforts to educate and influence government officials, developers, journalists, other conservationists, and the general public to seek protection of native habitats from the bulldozer, feral mammals, introduced game, and introduced weeds that naturalize in our native forests. . .

"All of us who care about the natural beauty and special qualities of these islands that set Hawaii apart in the work of nature owe a bottomline debt of gratitude to Dr. Degener for his lifetime perseverance in relating humankind to the natural environment upon which we ultimately depend for survival as a species. . ."

Otto Degener was a charter member of the Hawaii Audubon Society at its beginning in 1939 and a long-time friend of George C. Munro, co-founder of the Society.

As many readers will know from their publications, for the last 25 years Drs. Otto and Isa Degener have worked together as a team of botanists in both research and writing. Congratulations and aloha!

Mae E. Mull
Island of Hawaii Representative

ENDANGERED SPECIES WORKSHOP

By HORACE CLAY

You have asked about propagating or multiplying several kinds of plants, so here are some answers:

• TAHITIAN GARDENIA, TIARE TAHITI, GARDENIA TAITENSIS

This large shrub or small tree from the Society Islands and Fiji has dark green oval leaves and distinctive fragrant pure white single gardenia flowers with five to nine narrow waxy petals. Sometimes in Hawaii the flowers are followed by plump 2½ to 3-inch pods containing small seeds. Both flowers and pods are visible in the photo, above.

The Tiare Tahiti can be propagated by seeds sown in sterile potting soil or multiplied by woody cuttings or airlayers. Twenty-five years ago the Tiare Tahiti was rare and expensive in Hawaii. But, since we have discovered how easy it is to propagate, it has become one of Hawaii's favorite garden plants.

• RICKRACK PLANT, ZIGZAG PLANT, CRYPTOCEREUS ANTHONYANUS

This climbing cactus from lush rain forests of tropical Mexico, has brilliant and fragrant red and yellow flowers at night. Its zigzag, fishbone-like flattened stems may be cut apart at the joints, and each separate stem planted shallowly in a mixture of ½ volcanic cinders and ½ leaf mold, and kept lightly moist. This cactus roots easily.

The Rickrack plant prefers partial shade, so it is ideal in a hanging basket on a shaded lanai. Unlike other Cereus cacti, the Rickrack Plant has not, as yet, fruited and produced seeds in Hawaii.

• DESERT ROSE, ADENIUM OBESUM

Still rare and expensive (because even greenthumbers kill it by overwatering) is the Desert Rose, with its swollen base, picturesque branching habit, and pink, or pink and white flowers.

In its native East Africa, the Desert Rose is a bizarre shrub of about 10 feet. After its trumpet-shaped flowers, pairs of thin, pointed seed pods sometimes develop at branch tips. When mature, they split to release minute straw-colored seeds, each with a pair of gossamer parachutes.

An easy way to propagate the Desert Rose is by means of the wispy seeds. They germinate within a few days if planted in well-drained sterilized potting soil in full sun.

Another tried and true method of multiplying the Desert Rose is by placing a branch of any size in pure volcanic cinders to root. The secret to well-rooted cuttings — and beautiful mature plants — is hot sun and light sprinklings of water not oftener than once a week.

• ELEPHANT FOOT TREE, PONYTAIL, BEAUCARNEA RECURVATA

This is a popular potted plant for the lanai, and a unique specimen tree for really special landscape purposes. In time, this odd tree in the Agave (Century Plant) family, a native of Mexico, will attain a height of about 30 feet. The special feature of the plant, besides its hanging, curling foliage and its clusters of white flowers, is the huge bulging above-ground base which grows larger and larger as the tree matures.

The Ponytail rarely fruits in Hawaii. It can be propagated from seed sown in sterilized potting soil. Several specialty seed companies, including one in Hawaii, advertise Ponytail seeds.

Another, and considerably faster, method of propagating the Ponytail is by cuttings. Just cut off the whole stem immediately above the swollen base, and plant it just as you do a ti cutting. The remaining swollen base of the Ponytail will sprout a number of new "heads."

If you have questions about these plants, or about the propagation of plants, why don't you write to us here at The Advertiser? Send letters to Horace Clay, Poi Bowl, The Advertiser, Box 3110, Honolulu, Hawaii 96802.

Anyone for winged beans?

Time, 4/17/78

A few years ago, Noel Vietmeyer, a staff director of the National Academy of Sciences, was surprised to find in a collection of reports on tropical plants one with a curious title: "*Psophocarpus tetragonolobus:* Crop with a Future?" Neither Vietmeyer nor any other agriculture scientist would be surprised today. For the plant, better known as "the winged bean" because of the four winglike flanges on its pod, is now regarded as a great green hope among the experts who worry about new food sources for the overpopulated and underdeveloped world.

"It's a veritable backyard supermarket," exults Vietmeyer, who has probably done as much as anyone to drum up the new enthusiasm for the winged bean. "From top to bottom," he explains, "it is all edible. The leaves are like spinach, the stems like asparagus, and you can eat the flowers and the tubers too. And after they are steamed or boiled, the seeds and pods taste like good mushrooms."

There are other attractions. As a legume, the winged bean converts its own nitrogen from the atmosphere, thanks to a happy symbiosis with guest *Rhizobium* bacteria in the plant's potato-like tubers. Consequently, it needs no fertilizer and even enriches the soil in which it grows. Any parts picky humans do not want to eat can be fed to cattle. As Horticulturist Jack Kelly of the University of Florida's Institute of Food and Agriculture Sciences puts it, "It's like the butcher's pig. Everything's useful but the oink."

In certain parts of Asia, such as Burma, Sumatra and New Guinea, the winged bean is old potatoes. A sturdy, largely disease-resistant vine, it requires very little attention and grows with ease in rainy, tropical areas. The winged bean does more than just fill stomachs. Indonesians traditionally use extracts to treat eye and ear infections and cure dyspepsia; Malaysians claim a lotion concocted from the plant helps soothe smallpox.

If the winged bean is such a bountiful miracle, why was it so long neglected outside its native habitat? For one thing, like collard greens and peanuts in the U.S. South, it has been a peasant food, scorned by middle-class palates. Even when the world's agronomists began working on the green revolution by creating new strains of higher-yield plants, they concentrated so heavily on major crops like wheat, rice, maize and sorghum that humbler plants were overlooked.

Now these attitudes are changing. As the cost of the fertilizers needed to boost yields for such crops soars prohibitively, and as other resources become scarcer, experts have pressed the search for cheaper, easier-to-raise alternatives. In this hunt, many other plants are being rediscovered. Among them: the Mexican leucaena tree (as a forage for cattle), the jojoba bean (for its oil) and the Southwest's weedlike guayule (as a source of natural rubber).

Experimental winged-bean plantings are now under way in some 50 countries, partly as a result of a widely distributed report by the National Academy of Sciences that concluded: "The winged bean appears to have great potential for easing the problem of protein malnutrition throughout the humid tropics." But for all their enthusiasm, scientists admit that to begin widespread growth and use of the plant where it has never been grown before may involve obstacles, botanical and otherwise. Indeed, so perverse are human beings that it may prove a difficult thing to change eating habits. As the University of Florida's Kelly points out, though, scientists might take a lesson from history. When Louis XVI tried to popularize potatoes in France during the 18th century, the people refused to eat them—until he established a royal potato garden, which the peasants promptly invaded to get at the King's new crop ■

THE ALUMNUS

AUGUST-SEPTEMBER 1978

The Twenties

Carroll W. Bunker '21 reports the death of his wife of 53 years, Genevieve Cushing Bunker, on May 3. Mrs. Bunker was a graduate of Smith College and, in addition to her husband, is survived by one daughter, two sons, and three grandchildren. Bunker also writes that he has moved from West Palm Beach, Fla., to Euclid, Ohio.

Otto Degener '22, a world-renowned botanist and the author of *Flora Hawaiiensis*, the authoritative book on plant life in Hawaii, has authored another publication: *Plants of Hawaii National Park Illustrative of Plants and Customs of the South Seas.*

Alton H. Gustafson '26, who retired from Bowdoin College in 1975 after a 29-year teaching career as a biology professor and former chairman of the biology dept., has been named the State of Maine's representative to the board of trustees of the New England Aquarium in Boston. Dr. Gustafson received an award for distinguished professional service from UMass in 1972.

The Thirties

HAWAIIAN BOTANICAL SOCIETY

c/o Department of Botany, University of Hawaii
3190 Maile Way, Honolulu, Hawaii 96822

THE HAWAIIAN BOTANICAL SOCIETY NEWSLETTER is published in February, April, June, October, and December. It is distributed to all Society members for the purpose of informing them about botanical news and progress in Hawaii and the Pacific. News contributions and articles are welcomed.

THE HAWAIIAN BOTANICAL SOCIETY was founded in 1924 to "advance the science of Botany in all its applications, encourage research in Botany in all its phases," and "promote the welfare of its members and to develop the spirit of good fellowship and cooperation among them." Any person interested in the plant life of the Hawaiian Islands is eligible for membership in this Society. Dues: regular, $5.00 per year; family, $7.50; college students, $2.00; students below college level, $1.00.

DEGENER, O.
Naturalist's South Pacific Expedition: Fiji, 1949.
O. Degener, Box 187, Waialud, Oahu, Hawaii 1949 : $5.00 : Pp. 303 : illus.

Mr Degener, well known for his work on the flora of Hawaii, has here brought out an account of a visit to Fiji, on which he collected plants, studied their local uses, and interested himself in the life and customs of the Fijians. The account is in narrative form and consequently the information contained is very scattered, though there is an index of plant names. A great part of the book deals solely with Fijian life, and here the author expresses the strongest criticism of the attitude of the Europeans to the Fijians. This criticism would have gained in effect had the author shown rather more evidence of being able to appreciate points of view with which he disagrees.

HAWAIIAN BOTANICA
c/o Department of
University of Haw
3190 Maile Way
Honolulu, HI 968

The ~~Imperial~~ Commonwealth Bureau of Plant Breeding and Genetics presents its compliments and begs to draw your attention to the attached review which appeared in "Plant Breeding Abstracts"

Vol. ~~XX~~, No. 1, p. 180.

Please Post

SCHOOL OF AGRICULTURE,
CAMBRIDGE,
England.

2807 PSI 4 up 4/36 615 F A

A native Hawaiian plant you'll see in mail, but not in ground

HONOLULU ADVERTISER Friday, June 8, 1979 A

bob krauss

Advertiser columnist

This story is for everybody who never heard of the Hawaiian plant on the new 15-cent postage stamp which goes on sale today.

The plant is called *vicia menziesii* or, in street language, the Hawaiian broad bean.

It's so rare that there isn't even a Hawaiian name for it. There are so few of them that the plant was not seen by a human being between the early 1900s and 1972.

A botanist had to fly all the way from Hawaii to Washington to tell the artist in the postage stamp factory how to draw the plant.

So what is such an insignificant and little-known weed doing on a postage stamp?

"The series (of stamps) features endangered species of plants," said Charles Lamoureux, botany professor at the University of Hawaii. "This is probably the most endangered species in Hawaii. The other four grow on the Mainland.

"*Vicia Menziesii* was found by naturalist Archibald Menzies, who accompanied Capt. George Vancouver to Hawaii in 1793. The plant was seen only three times in the 19th century.

"Early in this century, it was described by Forbes and then was not seen again until 1972 when Wayne Gagne, a Bishop Museum botanist, and Mae Mull, of the Audubon Society, found it.

"There is nothing in the traditional Hawaiian literature about the plant and we have no Hawaiian name for it. This suggests it was fairly rare back when."

Lamoureux said the plant is found only in the Kilauea Forest area on the Big Island. It was the first plant from Hawaii accepted on the endangered species list.

He said it is a vine that grows into trees on the slopes of Mauna Loa in altitudes of 5,200 to 5,400 feet. The plant has purplish flowers like sweet peas and is quite showy.

Vicia menziesii is so little-known that the designer of the postage stamp didn't know how to draw it.

"He was working with a dried specimen from the Smithsonian Institution and photos which I had sent them some time ago," said Lamoureux.

"The photos I had sent emphasized the flowers. They wanted to show the leaves so they wrote here. I had to go to Washington anyway. I took back photos taken by Rick Warshauer and Lisa Croft and myself.

"Two other botanists and I spent some time with the designer to explain what was wrong in the original drawing.

"With all of that advice and all those pictures, the designer may or may not have gotten something that looks like the plant. I'm keeping my fingers crossed until I see the stamp."

HAWAIIAN WILD BROADBEAN

HILO — An endangered Hawaiian bean plant, found only in the Ka'u district, will be featured on a commemorative 15-cent U.S. postage stamp to be issued nationwide Friday.

The Vicia menziesii, a type of vetch thought to be extinct for 50 years until its rediscovery by a Bishop Museum researcher in 1974, is in the ohia and koa forests above Volcano.

The first-day issue of the stamp will take place in Madison, Wis., Thursday during a national meeting of the Garden Clubs of America.

The plant, a relative of the garden sweet pea, is a climbing vine with colorful flowers. Naturalists claim it is threatened by logging, cattle grazing and wild pigs.

It was first noted by Archibald Menzies, a naturalist on the Vancouver voyage. He spotted the vine in the upper Kapapala forest in Ka'u. It since has been seen in the Kilauea Forest Reserve at the 5,000-foot elevation.

Mae Mull, a spokeswoman for the Hawaii Audubon Society, said the plant shares its remaining habitat with four endangered species of Hawaiian forest birds — the 'akepa, the 'akiapola'au, the Hawaiian creeper and the 'o.

Stamp to honor our bean plant

DR. OTTO DEGENER

West Hawaii Today, Friday, May 25, 1979—17

Author commended

Dr. Otto Degener, author of eight books on Hawaii's native plant life, has been commended by the Hawaii State Legislature for "his contribution to the preservation and enhancement of Hawaii's wildlife resources."

Degener, presently living in the volcano area, has devoted more than a half-century to the study, research and compiling of information concerning the preservation of Hawaii's natural resources, according to the senate resolution.

"Flora Hawaiiensis" is a seven book reference to many plants found in Hawaii. The book was written by Degener especially for use by professional botanists. It is published in loose leaf form so that new discoveries can be added to the booklets. Degener and his wife, who assisted him in collecting the material for the books, have provided for a trust to continue the "Flora" series after their deaths.

Degener also authored and included many of his illustrations in "Plants of Hawaii National Parks Illustrative of Plants and Customs of the South Seas."

The Senate resolution stated that the people of Hawaii "owe a bottom-line debt of gratitude to Dr. Degener for his lifetime perseverance in relating humankind to the natural environment upon which we ultimately depend for survival as a species."

Degener, who is celebrating his 80 birthday this year, will receive a copy of the resolution from the State Legislature whose members feel that "this outstanding service of Dr. Otto Degener in fostering the preservation of community's precious wildlife resources is worthy of formal recognition and commendation."

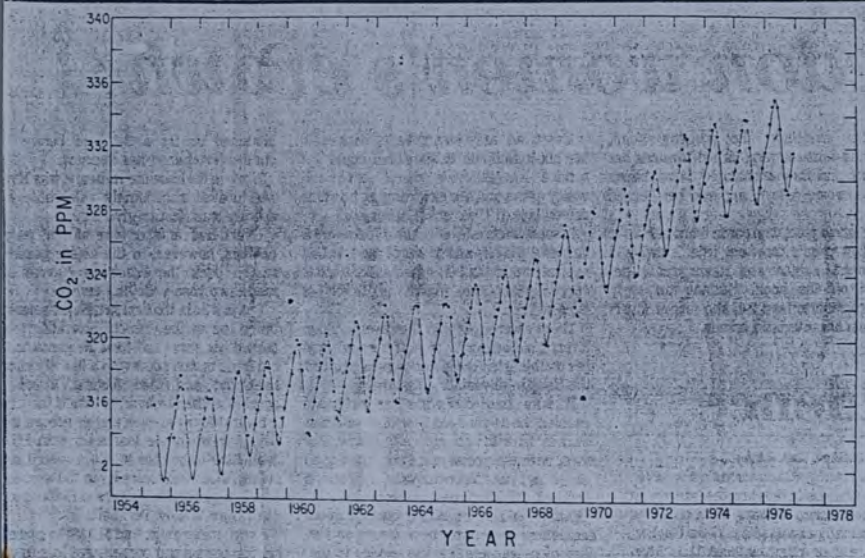
"Volcano Views"

by Virginia Dicks

Contributions to this column can be made by calling Virginia at 967-7231 or by writing to P.O. Box 116, Volcano, Hi. 96785

And it's back to her nursing chores at the hospital for Maxine Verbiske, daughter of Annie and John, who just returned from a three week vacation in Yuba City, Calif., where she visited her brother, John, and his family. John provides the maintenance for the jumbo Tri-Eagle helicopters used by the logging firms. Maxine said it is really something to watch these big choppers ferry out the huge logs from the forests where they have been cut.

Volcano's world renowned botanists, the Drs. Isa and Otto Degener have won yet another coveted honor. They were both awarded the "Distinguished Service Award" by the New York Botanical Garden. Otto, with his dry sense of humor, writes from Waialua, Oahu, his other home, "Funny what an old plug-horse or tortoise will get if he manages to live long enough." A well deserved recognition for two deserving people. Congratulations. Degener was cited recently by our state senate for his contributions to the preservation of Hawaii's unique island ecosystem. He celebrates his 80th birthday this year.



CARBON DIOXIDE INCREASES—These measurements by the Mauna Loa Observatory show how the carbon dioxide parts per million in the atmosphere are increasing. The annual fluctuations relate to the growing seasons of plants, which use a considerable bit of the gas.

Two scientific visitors stopped at the Mauna Loa Observatory last week to view its carbon dioxide instruments and findings.

It really was a "must" stop, new Observatory Director Dr. Kinsell Coulson said in an interview at the observatory's office in the Federal Building, Hilo.

"A good share of what we know about carbon dioxide buildup in the atmosphere) comes from Mauna Loa measurements," explained Coulson. They're "probably the best measurements made."

The visitors—French scientists—drove to the 11,150-foot installation to satisfy their interest in the specialized carbon dioxide measurements "and to see how we were handling the problems of calibration," Coulson said.

The French are establishing a station on Amsterdam Island in the South Indian Ocean, the Mauna Loa Observatory chief said.

Volcano-top Amsterdam is four miles in diameter, sticking up out of the water "at least 2,000 miles from civilization." It's been the site of a weather station for years. Now scientists will start measuring carbon dioxide with the same kind of instrument used at Mauna Loa, Coulson said.

Coulson, 62, had been on the staff of the University of California at Davis. An expert in solar radiation, he has visited Russia several times as an exchange scientist.

He replaces Dr. John Miller as Mauna Loa Observatory head. (Miller was transferred to Silver Spring, Md., to another National Oceanic and Atmospheric Administration post.)

The Mauna Loa staff consists of six full-time instrument observers and several part-timers, said Coulson, a frequent visitor here before his arrival June 10.

Carbon dioxide is recognized throughout the world as being a driving mechanism of climate, Coulson said.

We wouldn't notice a change in the carbon dioxide in the air, he said, but all the computations show that, if all other

Herman Goebel of Hawaiian Paradise Park found an interesting bit of Hawaiiana on a trip to Boston in May.

Goebel said he came across a one-foot high brass pineapple labeled "Hospitality" in an antique shop, Faneuil Hall in Boston. When he inquired about the object, the shop owner gave him a copy of its definition.

"During the whaling ship days, many romantic tales came to life as a result of the far reaching travels of the sailing ships.

One such story caused the pineapple to be used as the symbol of welcome and hospitality.

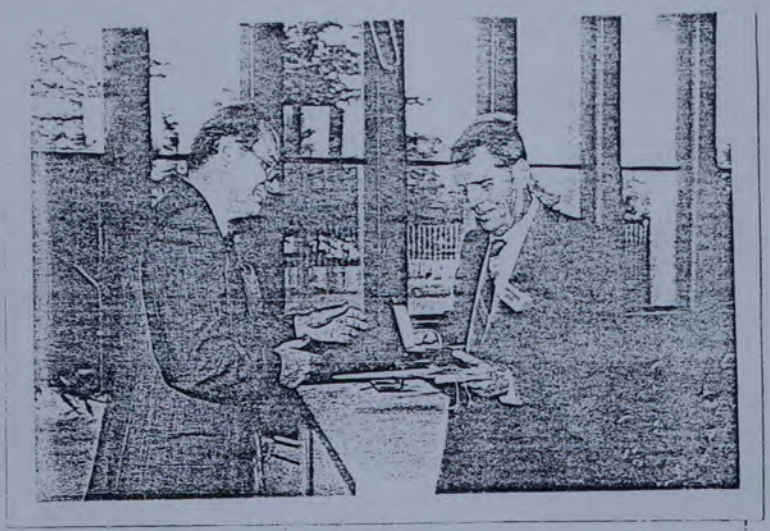
History records ships sailing from Nantucket island to the south seas in search of whale oil.

When the pineapple was discovered, it was a strange and exotic fruit never seen by North Americans.

Sea Captains would bring back this unusual fruit as a prized gift for their families and friends.

Upon their return to Nantucket or Newport they would place a pineapple over the spike on their iron gate.

This was public notice that the captain had returned and was holding open house, "food and drink for all."



Otto Degener being awarded Sept. 10, 1979 the Willdenow Medal at the Tercentenary Celebration of the Founding of the Berlin Botanical Garden by Dr. Peter Glotz, Senator for Science and Research for West Berlin, Germany.

Degener began his study of Hawaiian plants practically full time in 1922 to the present, his wife. Dr. Isa Degener joining him in the project in 1953. The original sets of plants collected were always donated to the New York Botanical Garden, an institution known to this New Yorker as a child. Incidentally, the Drs. Degener are staff members of this huge institution, residing in Hawaii Nei and representing it here. The best duplicate sets were sent first in exchange for books and thereafter year after year soon after collecting to Berlin, and smaller sets sets to Honolulu during the Curatorship of H.C. Neal, to Washington until Nixon's questionable antics seemed to infect the District, and elsewhere. Many of the specimens deposited in Berlin and collected as early as 1922 were destroyed during aerial bombing of the Garden and Museum by British aircraft - that by U.S., aircraft was fortunately ineffectual - during World War II. Many good duplicates destributed to other institutions on loan escaped the holocaust and are back in Berlin to augment the collection now to about 2,000,000 sheets.

The Degeners, separately and jointly, have published to date nine books and over 400 scientific articles about the Fiji and Hawaiian Archipelagos. One outstanding tree collected in Fiji is an Archaeopteryx of the Plant World, a "missing link" between the Gymnosperms (Pinus etc.) and the Angiosperms (Flowering Plants). It has been described by Bailey & Smith as the monospecific Family Degeneriaceae. The Botanical World, with acces to such publications often in international journals not read in Hawaii, is aghast at the wreckless extermination of Hawaii's peculiar International Plant (and Animal) Treasures of inestimable value intellectually and for research. Furthermore, to enable Hawaiian Tourism to continue to flourish, Hawaii Nei must remain Hawaiian and not ape competing tourist centers which foolishly cover their own interesting lands with the usual gaudy but monotonous bougainvillea from Brazil, erythrina from Africa, hibiscus from China, oleander from Greece, plumeria and poinsettia from Mexico, and similar exotic cultigens. Why come to Hawaii Nei when you can see such common plants in cultivation cheaper at home?

The bestowal of the Willdenow Medal shows approval of the study of Hawaiian plants, their collection and preservation at least in museums before the more ignorant island population exterminates them, and our successful attempt to teach such good people - mostly the younger - conservation. Conversely it shows disapproval of the evil extinction by Man of God's or Nature's Sacred Creations and the suble sabotage exerted upon botanists, entomologists, geneticists, and other biologists by some minor dictatorial Government Officials as well as managers and trustees controlling huge areas of native jungle. What was so illogical to these foreigners assembled in Berlin is that such private saboteurs are actually allowed juicy tax benefits on such relatively unexplored areas they close to researchers while they despoil them forever of their irreplaceable biological riches. The land is not theirs in fee simple, but merely leased from the Government! If they stifle research of no one knows what benefit to Mankind, they should pay the same real estate tax as is assessed the average citizen. They should carry their share of the tax burden. O.D.

Big Isle's economy maturing healthily, banker Hitch says

By HUGH CLARK
Advertiser Big Island Bureau

HILO — Hawaii County's economy is "getting up to full steam," First Hawaiian Bank economist Thomas Hitch reported yesterday to a luncheon gathering of Big Island businessmen.

In his annual economic report, Hitch said the island is experiencing substantial economic growth and need not worry about downturns in the Mainland economy nor about overdependence on tourism or sugar.

Claiming the island's overall economy is developing a "maturing diversity," Hitch cited diversified agriculture as becoming a major economic prop and said the the dramatic development of science and energy research has given the county unprecedented stability.

Much of his address was an economic lecture about how the state's economy typically does not respond to Mainland booms or recessions because Hawaii is "essentially recession-proof."

Hitch said this is because the basic industries are not governed or influenced by the national economy. Only tourism reflects Mainland cycles and only then minimally, he said.

Hitch said that in seven recessions since World War II, Hawaii has experienced a setback the same time as the Mainland only once — in 1949. And Hawaii's problem then, a six-month dock strike, was different from the Mainland's.

Hitch said the 15-year boom, from 1958-1973, never reflected either the 1960 or 1969 recessions "in any way, shape or form." Nor did a subsequent Mainland boom do much to spur Hawaii's slow economy over the next five years.

"For the life of me," Hitch said, "I can't find any correlation — with or without a lag."

He said economists must learn that there are great differences between areas and regions of the country and must cease concentrating on the average.

Hitch discussed many aspects of the Big Island economy but did not deal with a number of factors concerning business today, such as the threatened loss of the common fare plan, which county economists consider critical to the tourism industry.

Nor did he touch on community disputes about large-scale shopping center developments in Hilo or the loss of Continental Airlines' air freight services at the end of the year, which is costing the flower industry 12 million pounds of airlift a year.

Asked his view of sugar, Hitch said it looks better this year but the industry will always face "perilous times" because of its dependence on a national sugar policy. "I could talk about the perilous condition of the sugar industry every year," Hitch said.

He said tourism was expected to play a promising role in the 1979 economy until the United Airlines strike that was followed by the DC-10 groundings. Both affected Hilo more than Honolulu because United provides the bulk of direct air service here.

The impact was cushioned, Hitch said, by the new importance of other factors such as research and diversified agriculture.

Citing raw figures, Hitch noted an 8.3 percent increase in tourists to 909,000, a gross of $107 million by the sugar industry and a 20 percent growth — to $54.3 million a year — in sales from diversified agriculture, including cut flowers, macadamia nuts and papaya.

Construction was strong in 1978, will do better this year and appears "headed into a boom period," he said.

"Overall, the well-diversified economy of the Big Island will adequately weather the decline of tourism this year," he said, "and sugar should end the year in slightly better shape than last year. In all, the county should have an even better year than last."

Thomas Hitch
Big Isle getting up steam

Marijuana big factor, Hitch says

HILO — Marijuana cultivation and exportation are "a helluva economic factor" on the Big Island and in the state, bank economist Thomas Hitch commented yesterday.

But he made no reference to the illicit activity in his comprehensive analysis of the Hawaii County economy because "I have no insight; nothing to say about it."

In response to questions from the audience, Hitch said he is "sure that certain businesses know well the impact this has on their income — I know there is a tremendous volume."

Two weeks ago, State Statisician Bob Schmitt expressed alarm that the "largest industry in the state isn't being covered by statistics."

Estimates of annual sales from Hawaii County alone have ranged from $250 million to $750 million a year, from one and a half to five times more than for the entire tourist industry.

T/482

Hennenberg

Friedrich Christian Ludwig Hennenberg
geb. Braunschweig 1748-1812 seit 1808
Praefekt von Dept. der Oker, 1781
Legationssekretär, 1790 Privatsekretär
des Herzogs Karl Wilhelm Ferdinand
von Braunschweig heiratete 1781
Dorothea Elisabeth Thiess 1744-1820,
Tochter des Kaufmanns Johann
Christoph Thiess und seiner
Gemahlin To der Horst. Deren
Tochter Henrietta Dorothea geb. 1783
heiratete 6/2/1806 den Bankier
Heinrich Ludwig Löbbecke geboren
zu Iserlohn 14/8/1778 gestorben zu
Braunschweig 9/7/1852. Die ältere
Tochter der beiden, Marie, geboren
26/2/1807 in Braunschweig
gestorben 9/2/1891 heiratete
Theodor Emmerich Karl Denicke
Eine zweite Tochter, Etta,
geboren 28/5/1810 in Braunschweig
gestorben 22/5/1889 heiratete
9/4 1833 Wilhelm Friedrich
Eduard Degener 13/7/1804-
7/12/1874.

Familie Kaempff.

Am 18 Aug 1818 hat ein Joseph Kaempff (29 Jahre alt) Munitionar der K.K Garnisonsartillerie ~~die~~ zu Innsbruck in Tirol, die Antonia Magdalene Zippel (23 Jahre alt) in Wien, Tochter des Artillerieoberleutnant und Josepha Lind lau geheiratet. Diese hatten dann zwei Töchter und drei Söhne. (Barbara, verheiratete Knapp, hatte 2 Töchter, Antoinette, verheiratete Kuchinka (1 Tochter, Marie Hirsch von Kronenwerk) und zwei Söhne, Ludwig und Karl Kuchinka, beide als Feldzeugmarschalleutnant in Pension gegangen.

Die drei Söhne von

Joseph Kaempf und Antonie Zippel waren Karl, als Hauptmann in Pension gegangen, Johann und Joseph.

Joseph Johann Kaempf, am 20 Feb. 1833 in Budweis geboren (im Jahr 1890 in Pension gegangen als Oberst, vom Kaiser Franz Joseph mit dem Prädikat von Baldenstein geadelt) heiratete am 12 Aug 1860 Luise Denike, Tochter des Gutsbesitzers ~~Carl~~ Karl Theodor Emerich Denike zu Kranichsfeld (damals Steiermark, jetzt Jugoslavien) und Marie Löbbecke. Kinder von Joseph Kaempf von Baldenstein und Louise Denike waren

Etta Peckh, Marie Degener,
Lola Ahlemann, Ilona
von Boeckmann, Karl,
Robert, und Irene Smeechia
Die Kaufleute ~~Carmen~~
Hammonten aus der
Schweiz und wanderten
aus nach Oesterreich.

Bukl. to Hunt, Dicks, Hayr. Trib. Herald, Harry Whitten, Bot. Krauss, Carnegie Adelaide, Mues, Ann Arbor, Auckland, Berkeley, Berlin, Bloomington, Bracknam, Brisbane, Brno, Brussels, Budapest, Calcutta, Chicago, Cuba, Christchurch, College Station, Copenhagen, Dallas, Edinburgh, Florence, Fukuoka, Gainesville, Geneva, Gilroy, Glascow, Göteborg, Göttingen, Graz, Halle, Hamburg, Hilo, Hiroshima, Ithaca, Jamaica Plain, Jena, Kanazawa, Karlsruhe, Kew, Kiew, Krakow, Kyoto, Lausing, Lausanne, Leiden, Leningrad, Lund, Luckenbach, Madison, Manchester, Melbourne, Mie, Milwaukee, Montpelier, Montreal, Moscow, Munich, Nagoya, Nara, Oshkosh, Oslo, Cuzco, Paris, Perlin, Praha, Puerto Rio, Pyongyang, Sapporo, Seattle, Stanford, Stockholm, St Paul, Sydney, Tampa, Tokyo, Tübingen, Turku, Uppsala, Urbana, Utrecht, Washington, Wien, Zurich

very pleased indeed to present this Distinguished Service Award to Drs. Isa and Otto Degener.

Volcano botanist receives prestigious international award

Hawaii Tribune-Herald, Tuesday, October 2, 1979—3

Dr. Otto Degener, internationally recognized botanist who resides at the Volcano and in Honolulu, was recipient of a prestigious award on Sept. 10, in West Berlin.

Dr. Peter Glotz, senator for science and research in West Berlin, awarded Degener the Willdenow Medal at the 300th anniversary of the founding of the Berlin Botanical Garden and Botanical Museum.

Degener, who is widely known as a Pacific Basin naturalist and conservationist, began his study of Hawaiian plants in 1922 and has continued. His wife, Dr. Isa Degener, joined him in the project in 1953.

The original sets of plants have always been donated to the New York Botanical Garden for which the Degeners serve as staff members representing Hawaii. The best duplicate sets of plants were sent consistently as gifts to Berlin, Bishop Museum and elsewhere.

WILLDENOW MEDAL—Dr. Otto Degener, resident of the Volcano and Honolulu, right, receives prestigious Willdenow Medal from Dr. Peter Glotz in West Berlin, Germany.

The Degeners, separately and jointly, have also published nine books and more than 400 scientific articles about the Fiji and Hawaiian archipelagoes.

Now, in a letter from Degener in Berlin, he states, "the botanical world, with access to such publications—often in international journals, is aghast at the wreckless extermination of Hawaii's peculiar international plant (and animal) treasures of inestimable value intelectually and for research."

And the naturalist had some strong opinions about tourism.

"To enable tourism to continue to flourish, Hawaii must remain Hawaiian," he wrote, "and not ape competing tourist centers that foolishly cover their peculiar lands with the usual gaudy but monotonous bougainvilleas from Brazil, oleander from Greece, hibiscus from China, erythrina from Africa and similar exotic cultigens.

"Why come to Hawaii when you can see such plants nearer home?"

The bestowal of the Willdenow Medal, he added, "shws approval of the study of native Hawaiian plants, their collecting, and preservation in museums before the more ignorant island population exterminates them and our attempt to teach such people conservation."

Degener cites concern among world botanists

HONOLULU ADVERTISER, Friday, September 28, 1979

By JAN TenBRUGGENCATE
Advertiser Kauai Bureau

LIHUE — Dr. Otto Degener, the renowned Pacific naturalist who received an international botanical award earlier this month, says preservation of Hawaii's native plant and animal species is of crucial importance and interest worldwide.

Degener has written from West Germany, where on Sept. 10 he was presented with the Willdenow Medal at the 300th anniversary celebration of the Berlin Botanical Garden and Botanical Museum.

"The botanical world . . . is aghast at the reckless extermination of Hawaii's peculiar international plant (and animal) treasures of inestimable value intellectually and for research," Degener said.

"The bestowal of the Willdenow Medal shows approval of the study of Hawaiian plants, their collecting and preservation at least in museums before the more ignorant island population exterminates them."

The native plants of Hawaii have many uses, not the least of which could be the promotion of tourism, he added.

Hawaii should show off its native vegetation rather than bringing in and decorating its countryside with imported plants available in other resorts, he said.

"To enable Hawaiian tourism to continue to flourish, Hawaii Nei must remain Hawaiian and not ape competing tourist centers which foolishly cover their own peculiar interesting lands with the usual gaudy but monotonous bougainvillea from Brazil, erythrina from Africa, hibiscus from China, oleander from Greece, plumeria from Mexico, and similar exotic cultigens," Degener said.

"Why come to Hawaii when you can see such common plants in cultivation cheaper nearer at home?"

The botanist has studied Hawaiian plants since 1922 and is a staff member of the New York Botanical Garden. He has taught botany, served as naturalist at Hawaii National Park and has a rare "missing link" plant species, Degeneriaceae, named for him.

Monday, October 1, 1979 Honolulu Star-Bulletin A-13

Otto Degener

THE KAMAAINA Island botanist, Otto Degener, was awarded the Willdenow Medal Sept. 10 in ceremonies in Berlin marking the 300th anniversary of the founding of the Berlin Botanical Garden and Botanical Museum.

The medal was given Degener for his work with native Hawaiian plants, his collection of specimens for leading museums in the world, and his work in conservation.

Degener began his study of Hawaiian plants practically full time in 1922 and his wife Isa joined him in the project in 1953.

The original sets of plants he collected were sent to the New York Botanical Garden but duplicate specimens were sent to the Berlin Botanical Garden. Many of them were destroyed by aerial bombing durmg World War II but duplicates sent to other institutions escaped destruction.

The Degeners, separately and jointly, have published nine books and more than 400 scientific articles about plants of Hawaii and Fiji.

Herrn

DR. OTTO DEGENER

zum

80. GEBURTSTAG

SEHR GEEHRTER
HERR DR. DEGENER!

Der Senat des Staates Hawaii hat Ihre Verdienste, die Sie sich vor allem für die Botanik und den Naturschutz erworben haben, in einer Ehrenurkunde anläßlich Ihres 80. Geburtstages eingehend gewürdigt.

Auch die Wissenschaftler des Botanischen Gartens und Botanischen Museums gratulieren aus diesem Anlaß sehr herzlich und wünschen Ihnen für die Zukunft alles Gute, vor allem Gesundheit, so daß Sie sich weiter-

hin der Flora von Hawaii widmen können.

Berlin-Dahlem am 14. Mai 1979

Werner Greuter
W. Schultze-Motel
B. Lammers
Margit Hakki
Rosel Gerloff
B. Hein
Friedhelm Brehm
Hildemar Scholz
Paul Diepho
Hartmut E
Uwe Raabe

The Volcano Gazette

Hawaiian Plants in Profile

'Ili-ahi Trees Are Easy to Miss On "Sandalwood Trail"

November-December 1979

Today, Volcano visitors can stroll the pleasant craterside "Sandalwood Trail" just Ka'u of the hotel, and miss seeing the native tree (*Santalum spp.*) for which it was named unless they are very alert.

True, sandalwood, or *'ili-ahi* as it is called in Hawaiian, is not a showy tree, in spite of the legendary status it enjoys because of its fragrant heartwood, and it's easy to miss in the verdant tangle of fern and *'ohi'a*. Still, less than 200 years ago, *'ili-ahi* was much more plentiful in Hawaiian forests at all elevations than it is today.

Although old-time forester Col. L. W. Bryan of Kona has recorded a South Kona sandalwood with a circumference of 7'8" that's 65' high*, the sandalwoods one sees today are generally much smaller, on the average about 15' or so, with a more modest circumference of up to six inches.

The story of the decline of this tree is another chapter in the history of the impact of European values upon aboriginal peoples.

For it was not until the 1790's, when foreign traders connected the Chinese market for the fragrant heartwood with the Hawaiian supply that the tree, and just as importantly, its surrounding ecosystems, were brought under pressure. While the pre-contact Hawaiians made active use of their environment, they had no reason to exploit it beyond their needs to supply for their survival. Certainly, they gathered forest products, just as they made use of the shoreline, and carved out *mala'ai* and *lo'i* to grow their sweet potatoes and taro. It was not until the "market economy" of the Europeans was introduced to these islands, however, that there was sufficient motivation to expliot a resource beyond one's personal ability to make use of it.

For it was a lot of work to gather the sandalwood, which became the prime export of Hawai'i for a short but intense period

Volcano's Veteren Botanist Otto Degener Is Honored in Berlin

Here on the Big Island, in one of the world's most unique botannical settings, it's not surprising that the place abounds in in botanists, entomologists, ornithologists, taxonomists, and other life scientists (this in addition to geologists, meteorologists, and astronomers!!).

One of the real pioneers in the field, Dr. Otto Degener, 80, was recently recognized for his important work in the field of Hawaiian taxonomy. On September 10, at the 300th anniversary of the founding of the Berlin Botanical Garden & Museum, Degener, who is a Volcano resident, received the Willdenau Medal for his contributions which have spanned half a century.

This honor followed on the heels of Hawai'i State Senate Resolution No. 294, which this past spring commended this venerable and out-spoken advocate of Hawaiian ecosystems.

Degener, who has actively collected plant specimens here and in Fiji for inclusion in the collections of the New York Botanical Garden and the Berlin institution since 1922, has been assisted since 1953 by his wife, Dr. Isa Degener.

Their work has left a lasting mark on the botannical field; this is reflected in many ways, including the naming of the monospecific Family *Degeneriaceae* in their honor.
Says Degener, "the botannical world...is aghast at the wreckless extermination of Hawaii's ...plant treasures of inestimable value....Hawai'i Nei must remain Hawaiian."

Dr. Otto Degener, right, who makes his home in Volcano, is shown receiving the Willdenau Medal for his work in Hawaiian botany in Berlin this past September. Presenting the medal is Dr. Peter Glotz of Berline.

Santa Rosa
April 25-62
636 Kulp St

Dear Dr Degener,

I know you will be surprised to get a letter from me after all these years. I often wondered what had happened to you, and finally got your address through the University. I will never forget you as Leo Whitney's good friend and if you ever come to California, please come to see me. Sincerely

Mrs Alice Hopper. (Leo's mother)

Hunt

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"Volcano Views"

by Virginia Dicks

Contributions to this column can be made by calling Virginia at 967-7231 or by writing to P.O. Box 116, Volcano, Hi., 96785.

VOLCANO — Towards the end of last October this column reported about Volcano residents the Drs. Isa and Otto Degener returning from a trip to Berlin where Dr. Otto Degener was presented the famous Willdenow Medal by the prestigious Berlin Botanical Garden and Museum, recognizing his special contributions to the botanical world.

As a follow up to that story, I have received copies of S. R. No. 356 which was adopted by our State Senate, congratulating Dr. Degener upon receipt of this medal. The resolution highlights some of Degener's accomplishments and contributions, specifically those concerned with his work in Hawaiian plants, their collection and preservation. The resolution particularly highlighted the fact that he collected and had preserved in museums around the world, a collection of samples of Hawaii's plants before people here became interested in the wealth of rare plant life that existed in our islands, many of which have since become endangered species.

Although now over 80, Dr. Otto with his wife Dr. Isa Degener, is still very active in botanical efforts to preserve our plants. They attempt to keep those who should be interested, advised of changes occurring in plant life particularly where introduced plants have become a menance to native ones.

When I last visited with the Degeners it was so interesting to hear them explain how botany can give a history of a land as certainly as there is a history of people and events. Botany in its way gives a special history of changes in the land, of what plants the land produced at given times and the changes which have taken place during any given period of time. Herbarium specimens can prove that a desert area once grew plants and can factuate a land in a period of change which could transmute a whole geographical area.

The many publications authored by both Degeners will be as important into the future as they are now, giving the history of the plants not only of our island archipelago, but other south Pacific areas, particularly Fiji. This history of plants and how, what and where they are at this period in time, will enable botanists to know what to expect on into the next century if the changes they see coming are allowed to continue unabated. It can be a sad history up in our area if we continue to allow the faya tree, which came here from the Azores, and the horrible thorny yellow weedy raspberry bush, which came from the Himalayas, to take over all the open land in Volcano, which they are doing rapidly.

VOLCANO—Exciting news. We are on the map! The Reader's Digest World Atlas has arrived and there it is, the only "Volcano" listed in the index. (Our last atlas listed only one—Volcano, Colo., but it seems to have disappeared). On page 49, which Hawaii shares with California, printed on the map is VOLCANO, just as big as all the other places on the Big Island with the exception of Hilo which rated larger print. That is a real step ahead in history, or is it geography?

Now that we are recognized in the big bad world, maybe we may rate being on some of the maps that are available locally, such as the ones given to visitors.

Just thought you would like to know we are on a map. It made my day.

Two individuals who are responsible for putting, not only Volcano, but all of Hawaii on the map as far as obtaining world wide recognition in the botanical world are the Drs. Isa and Otto Degener. They have just returned from Germany where the bestowal of the Willdenow Medal showed the high approval of the Degeners' study of Hawaii's plants, their classification and preservation in museums (of things botanical) throughout the world.

It was quite a nostalgic trip for the couple, their first visit to the renowned Berlin Botanical Garden and Museum since 1953; a real homecoming for Isa who was Isa Hansen when she worked for this venerable establishment.

Then as a young Ph.D. she was one of only two women on the staff, and she also taught in the university, of which the Botanical Garden and Museum was then a part. She had an enjoyable time as she conversed with former students who are now staff members and also visited with former co-workers.

In 1952, Dr. Otto Degener was also there working on special projects in the herbarium where they have collections of dried plants, classified and mounted for botanical study. It was at this time, he says, that he found "his rare orchid" (Isa) and brought her back as his bride.

Many special events were part of the big jubilee celebration of the 300th anniversary of the founding of the Berlin Botanical Garden and Museum. One they were both impressed with was the reception hosted by the Berlin Senate which was held in a 200 year-old castle where the light was all "candlelight." Huge chandeliers hung from high ceilings with myriads of burning candles, also many candelabrum were along the sides of the rooms. Plenty of light, they said, but with no breezes and because of the candles it did get a bit "stuffy" by the end of the evening.

After all the "jubilee-ing" in Berlin the Degeners visited Isa's mother in the Black Forest area of Germany before returning home to Volcano.

Now at home and still ever mindful of Hawaii's great heritage of plants that are known only in the islands, some so rare they are found only in certain areas such as Volcano and other parts of Puna, they are gravely concerned as to what is now happening to our island as the big,horrible thorny bush with the yellow berries (bigger and more thorny than blackberries) slowly but surely covers over and crowds out all other vegetation in its pathway.

They are alerting a whole list of people who should be interested in eradicating it before it devastates very large areas. Specimens of the weed are being pressed and dried between layers of newspapers (as they prepare all their specimens) then they will be labeled and sent out with the pertinent information. This is the same procedure they follow when they collect and send samples to botanical gardens all over the world.

'Experimental energy plantation' taking root on Big Island

HONOLULU—C. Brewer and Co., Ltd.'s "experimental energy plantation" is taking root on the Big Island, Hawaii Tribune-Herald March 22, 1979

BioEnergy Development Corp., under the direction of Project Manager Tommy Crabb, has begun site preparation and nursery construction in the first 61-acre increment of a sylviculture research project to investigate the feasibility and economic potential of large-scale biomass energy production.

Funded by a grant from the U.S. Department of Energy, C. Brewer's BioEnergy subsidiary plans to cultivate about 850 acres of eucalyptus trees over the next five years. The demonstration project is designed to gather data on cultivation and utilization of eucalyptus as a substitute for fuel oil used in boilers to generate electricity.

The first increment of the project entails the preparation and planting of 61 acres—46 acres along the Hilo Coast and 15 acres in the Ka'u District of the Big Island.

On the Hilo side, a 26-acre parcel is located near Akaka Falls and another 20 acres mauka of Onomea. In Ka'u, the 15-acre site is located in upper Ninole Valley. Elevations of the three sites range from 1,500 to 3,000 feet. Most of the acreage formerly was marginal caneland abandoned after it proved unprofitable to keep in sugar.

In addition to site preparation, a nursery to raise eucalyptus seedlings is being constructed. Located adjacent to the ginger processing plant of C. Brewer's Mauna Kea Agronomics subsidiary in Wainaku, the nursery will consist of two hothouses, each with 4,500 square feet under roof and capacity to hold 50,000 seedlings. Planting schedules call for the nursery to annually produce 400,000 seedlings grown from wild eucalyptus pods. About 2,000 trees will be planted to every acre.

The first planting of eucalyptus will take place late this month or early April. Seedlings initially will be provided by the State nursery near Kamuela, but by June BioEnergy's nursery will be in full operation.

BioEnergy Development currently is filling its staffing requirements. In addition to Crabb, the staff will include Dr. Ata Qureshi, who will be chief sylviculturist. A native of Pakistan, Dr. Qureshi previously was a research fellow with the East-West Center in Honolulu.

Ian "Scotty" Thain, formerly with Mauna Kea Agronomics, is BioEnergy operations supervisor. Thain gained extensive tree-farming experience when he managed two Weyerhaeuser Co. projects on the Mainland.

Rounding out the BioEnergy staff are forestry technicians Teri Kling and Geraldine Ung; Bill Jensen, a long-time sugar industry veteran who serves as accountant for both BioEnergy and Mauna Kea Agronomics, and Pearl Mokuhalli, the company's secretary.

In addition, Craig Whitesell, research forester with the U.S. Forest Service in Honolulu, is providing invaluable assistance to BioEnergy as a consultant.

BioEnergy has its operations office at the Mauna Kea Agronomics plant in Wainaku and administrative offices in the C. Brewer-Hilo office building.

THEODOR PHILIP HAAS (April 7, 1892 - June 21, 1977)
Otto & Ida Degener, and S.J. Taussig

Col. photograph attached to this biog. Photo files in pers. collection.

We residents of Oahu have had an outstanding botanist for over a decade living in our midst without fully appreciating him, nor profiting from his knowledge and wisdom. He visited the homes of the four of us respectively on the North Shore of Oahu and at Waikiki; and we, in turn, visited him at his apartment on Kuhio Avenue and later at his quarters at the Laniolu Good Samaritan Center on Lewers Street, Honolulu. Besides, whenever we could ween him from having his ear attuned to classical music on the radio or his eyes focused mostly on Channel 11 of his television set, we enjoyed conversing with him on biological matters on the 'phone. He was invariably charming and enthusiastic to us, though to nonbotanical acquaintances he was rather antisocial. This last attitude we ascribe to persecution in Germany during the time of Hitler, and to his suffering in later years painful rheumatoid arthritis. This illness kept him an invalid in a wheel chair, surrounded by a fascinating clutter of books and pamphlets, old letters, and photographs. He studied plant morphology under Karl Goebel in 1911-'12, his bound notebook still extant being of considerable interest in showing how the student reacted to the course. He studied the genus Acer under Fritz von Wettstein, earning his Doctorate at Munich December 21, 1932. Between 1929-'37 Dr. Haas set up exhibits, prepared pharmaceutical and other specimens for the Botanical Museum and for lectures at the University in Munich. One of his major projects was rearranging the entire exhibition according to modern museum principles.

He attended lectures at the meetings at over Universities of the Hawaiian Botanical Society until illness made it unfeasible to continue.

During Hitler's persecution of Jews, Dr. Haas fled Germany by way of Siberia and arrived in San Francisco September 21, 1940. Become an American citizen June 17, 1941, he did consulting work at the New York Botanical Garden in the Bronx, and the American Museum of Natural History in Manhattan. He removed to Philadelphia, becoming a volunteer in the herbarium of that Museum of Natural History, and thereafter Professor at the Philadelphia College of Pharmacy and Science until his retirement due to illness about 19??-????

(Steve, what do you think? We think dates are wrong?)

herbariums in the cabinets of the New York Botanical Garden

Presumably seeing the name "Degener" on Hawaiian museum specimens, he wrote the collectors, in 1962 a perfect stranger, regarding prevalent conditions in the Islands. Pleased with the reply, he relocated in Honolulu to bask in the sunshine of our salubrious climate. in 1964

Upon Dr. Haas' death we Degeners, with our holograph collection from leading botanists, deposited in the archives of the New York Botanical Garden and the Hunt Institute of Botanical Documentation, were worried about the safety of the nuggets hidden among Dr. Haas' lodestiff clutter. With their welfare in mind, we contacted our mutual friend and cowriter Biochemist Taussig. Due to our friend's close association with Philadelphia institutions, the Executors of his estate sent his literary possessions to Pittsburgh for preservation. The latter it is through Pitts- burgh Grace that we learned much of Dr. Haas' early history.

The Hunt Institute for Botanical Documentation, Carnegie Mellon University in

We still think the authors should be "O., & D. Degener & S. J., & S. ? Taussig"

Has Susan a middle name? I have not, but Isa has lots.

This is our idea of the necrology. Do polish & add to it, but we should not delay as his death would then no longer be news. Of course, we don't know if the Bot. Society will accept the ms. Have you a good photo of Dr. Haas?

Otto

Degeneria—
cultivated
decades ago in
Lyon Arboretum,
Univ. of Haw.,
by the late
Dr. J. W. Gillett
& brought to
O'ahu
at Mrs. McBride's
Beach home.
Degeneria in
"Fruit & Seed Survey
H. P. I. Hawaii",
Pac. Trop. Bot.
Garden Mem. 1,
3/30/73.

Degeneria
at McBride's
frustrated he
cannot climb
trees on
West Side!

Including a few other places, Degeners sent Degeneria seeds to; Adelaide, Ann Arbor, Armidale, Auckland, Austin, Barcelona, erkeley, Berlin, , Bloemfontein, Brisbane, Brussels, Budapest, Arnold Arboretum, Christchurch, Copenhagen, Edinburgh, Fukuoka, Firenze, Madison, Honolulu, N.Y.

1900 – 7 Flora
4.50 Hawaiian Pkg
.75 postage
$15.25
pd

Brigham Young University

Stephen L. Alley
Dean
College of Education

Dear Dr Degener –

Thank you so much for your trust & confidence in sending me your books – When I opened the package the smell of Hawaii came forth & reminded me of your much missed home ——

Could you please answer a few questions you said "Would you ever want 3 of the 4 books you can have them for 3.00 each – wholesale" – I am not sure what 3 bks you had reference to – is it Volumes 1–2–3 of Flora Hawaiana? & does that mean vol 4 is no longer available? As you said – the copy you sent me is a well used copy & not in good condition for field work & heavy study – If I could get the same books in a more recent edition (4 bks) it would be better for my use – but if I can only have the 3 volumes in the copy you sent then I shall keep it – In any event I shall enclose a check for $15.25 & you can let me know what my alternatives are – & if different then we can make any financial adjustments

118 McKay Building, Brigham Young University, Provo, Utah 84601 (801) 374-1211, Ext. 2453

Necessary ——

I read your review for Mc Bride's book - "Practical Folk Medicine" - & have ordered it thru my office — It has not as yet been forthcoming — Hope to hear soon —

Thank you —

Aloha nui ke kou —

Mrs Henry K. Chai

955 No 250 E
Orem, Utah
84057

Sent Books 5-6 for $20 + postage on approval — offered 3 of paperbacks for $9.

12/11/76

Ex-Justice Bernard Levinson die

Former state Supreme Court Justice Bernard H. Levinson, long an influential figure in Hawaii's legal and community affairs, died last night at St. Francis Hospital after a long illness. He was 71.

When Levinson was a youngster, he was named chairman of the Board of Discipline of his eighth-grade class — demonstrating at even that early age a judicial temperament.

He was described by one Honolulu reporter as "a friendly man." Another wrote that he performed marriage ceremonies with such a flair that "it warms the heart."

Born in Austin, Texas, Levinson grew up in Cincinnati, where he attended the University of Cincinnati and graduated with honors, including Phi Beta Kappa, in 1929.

He received his law degree in 1932 from Harvard Law School, and entered private practice in Seattle in 1933. From 1939 to 1942, he was in government service, first with the lands division of the Justice Department, later in the Solicitor's Office of the Interior Department.

He came to Hawaii in 1945 with the Office of Surplus Property, served as a territorial deputy attorney general in 1947 and in 1949 entered private practice, handling mainly civil matters.

Levinson was named a Circuit Court judge in 1966. He was appointed associate justice to the state Supreme Court in 1967, a member of what then-Gov. John A. Burns called "Hawaii's finest Supreme Court." He held that post until his retirement from the bench in 1974.

In 1975, he was reconfirmed as a visiting professor of law at the University of Hawaii Law School. He re-entered private practice after his retirement from the Supreme Court and entered a law partnership in 1977 with his son, Peter, who also graduated from Harvard Law School.

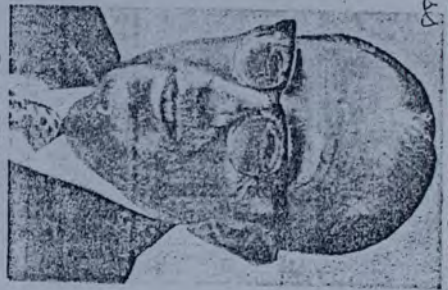
While serving with distinction as attorney and judge, Levinson also performed devoted service in many other ways to the community. He was a Rotarian and president of the Hawaii chapter of the National Society for Crippled Children and Adults. He was a a 33rd degree Mason and a Shrine member and was chairman of the Hawaii State Advisory Committee to the U.S. Commission on Civil Rights.

As an active member of Hawaii's Jewish community, Levinson served for 10 years as president of Temple Emanu-El. During that time, from 1950 to 1960, the congregation's first house of worship was purc services of Hawaii's first rabbi obtained; members Union of American Hebre gations attained, and the Pali Highway built.

He had been a trustee waii Jewish Welfare F 1956, and in 1959 received of merit of the United peal. He was active in B the American Jewish Com the law committee of Am brew Congregations.

Levinson is survived b the former Carlyn Krup sons, Peter Joseph and B Levinson.

Memorial services are



Bernard H. Levinson

the Degeneria

Garden director Dr. Peter Raven examines the plant in the Climatron. photos by DICK WEDDLE

Most people will probably walk right by it without even noticing it. After all, it's just a green plant —one of hundreds in the Climatron at the Missouri Botanical Garden.

But it's a sight to gladden the heart of any botanist. For the Degeneria is a very special plant—a living fossil. And, as far as Dr. Peter Raven, director of the Garden, knows, the Degeneria here is the only one in cultivation anywhere outside its native Fiji Islands.

It's named after Otto Degener, the botanist who discoverd it in the Fijis in the 1940s, who's one of only two living people to have a family of plants named for him. And, all by itself the Degeneria, with its brownish bloasoms and seeds, constitutes a family — in contrast to the orchid family, say, in which there are about 30,000 different species.

The Degeneria was shipped to the Missouri Botanical Garden late last spring from the National Arboretum in Washington, D.C., where it had outgrown its facilities. It was grown there from a seed by Fred Meyer, formerly director of horticulture at the Garden here.

"Flowering plants originated 140 million years ago and we estimate that the Degeneria is about 100 million years old," explains Dr. Raven. "It's very, very primitive. The walls of the flower which contains the ovules are open and they don't fuse together until after pollination."

Eventually the Degeneria will grow into a tree, 30 to 40 feet tall. However, although the Garden's plant is about 10 years old, it's still only about seven feet high because it was kept in a pot and constantly pruned at the National Arboretum in order to keep its growth down.

One of the reasons Dr. Raven was particularly pleased to obtain it for the Garden is that it, like many other rare plants, may soon become extinct.

"You hear a lot about rare and endangered species of animals but not much about rare and endangered species of plants," he points out. "However, it's a very real problem. We have about 250,000

continued

see next page

the first! Degeneria

continued

flowering plants in the world and at least 50,000 of them are considered endangered now.

"You see, more than half of all these plants — 125,000 — are in the tropical lowland rain forests," Dr. Raven continues. "And these are areas where the population is growing very rapidly. Furthermore, in tropical rain forests, seeds are poorly dispersed and plants have a short life span in which to reproduce. And finally, these forests are now being cut down in quantity everywhere. It's estimated that there will be no tropical rain forests that haven't been cut at least once by the year 2000.

"So you can see that the estimate of 50,000 endangered plants is actually conservative."

Dr. Raven uses the island of New Caledonia as an example. According to the director, there are 3,000 species of plants there, 98 per cent of which are restricted to that island.

"The French are now strip mining there for aluminum," he says, "and also turning vast amounts of land into pasture in order to raise beef. Within five to 10 years, it's estimated that the process of stripping off the island will be complete. Now there are five families of plants in New Caledonia equally as primitive as the Degeneria.

"So if any of these things are of interest and importance to us, we will have to take steps to preserve them," Dr. Raven stresses. "The Missouri Botanical Garden would like to find funds to work in both New Caledonia and Madagascar which is having the same problems — to bring back plants to grow and to get samples for study.

"We feel very strongly that whatever United States botanists do will be the only thing done."

Dupl. to D R. Mulcahy, U of Mass, NRTA, Telpner Ann Woolliams, Aarhus, Adelaide, Ann Arbor, Auckland, Berkeley, Berlin, Bloomington, Bochum, Bron, Brussels, Budapest, Calcutta, Canberra, Carbondale, Chiba, Christchurch, Copenhagen, Coimbra, Dallas, Bill Cocke College Station, Dublin, Ennis Geneva, Geneva, NY, Hunt, Gothenburg, Graz, Ithaca Jaw, Pl., Kew, Kiew, Leningrad, Lisse Melbourne, Munich, Padua, Utrecht, Durham, Austin, Basel Brisbane, Cambridge, Zurich Gottingen, Halle, Hamburg, Helsinki Berlin, Kasa ma, Kanazawa, Karlsruhe, Kyoto, Koebenhavn, Kyoto, Kyushu, Lausanne, Lee, Leiden, Lucknow Lund, Madison, Manchester, Linz, Madrid, Montpellier, Montreal, Oslo Nagoya, Tai, Ottawa, Oulu, Paris, Praha, Pretoria Rio, Rijksherbarium, Seattle, Stockholm, Sydney, Taipei, Tai, Utrecht, Vancouver, Wageningen, Washington DC, Wien, Zurich, B Rud (Dir Inst) Bankers Toronto, U of Mass, Clarkson Univ

According to Dr. Raven, these trees on the Garden grounds — Dawn Redwoods — were first described as fossils in 1942 and then two years later living specimens were found in several valleys of western China.

45

Pittsburg

6-7-/-79

50

The New York Botanical Garden

Newsletter

Volume 13, Number 3
June/July 1979

Bronx, N.Y. 10458
212-220-8700
or information line:
212-220-8777

In This Issue

Books

Dr. Degener Gets Things Off His Chest

IN 1959 G. C. RUHLE published a 94-page *Haleakala Guide* with a color photograph of the Silversword, native to the Island of Maui. Now appears a companion booklet of 72 pages, *Waimea Canyon and Kokee, A Nature Guide* (Kauai Publishing Co., Lihue, Hawaii), with a color photograph of the Kauai Silversword (*Wilkesia gymnoxiphium*). The author is Thelma A. Hadley, her sponsor the Hui O Laka.

This attractive booklet does not limit itself strictly to northwest Kauai but wisely displays an informative map of the entire island. It describes climate, geology, soil and topography, trails, legends, birds, mammals and, above all, plants. There are 42 half tones, that of mist drifts at Kalalau Lookout being particularly lovely.

As in so many publications, typographical errors have not been weeded out. Though it was permissible in the olden days to spell the name either "Honoruru" or "Honolulu," it is not now permissible to spell "crutches" for "clutches." What raises the hackles of an old biologist like the reviewer, however, is the word "animal" used for "mammal" on page 3, "berry" used for "capsule" on page 39, and "trees and plants" used as a heading on page 9, as though a tree were not a plant! "Trees, shrubs and herbs" could have been used or, simply, "Plants." The "broad-leaved cactus" is *Opuntia megacantha*, a plant with tiny, caducous, awl-shaped leaves and a broadened stem. The *pukiawe* belongs to the Epacris Family, while the *ukiuki* belongs to the Lily Family. The Silversword is not limited to Maui. David Douglas, before his murder on the slopes of Mauna Kea, used dried stalks of this plant as firewood. Not six native lobelia are peculiar to Kauai, as stated on page 30, but well over 30;

Distinguished Service Awards

The New York Botanical Garden presented its Distinguished Service Awards this year to Drs. Otto and Isa Degener and Mr. Frank J. Anderson.

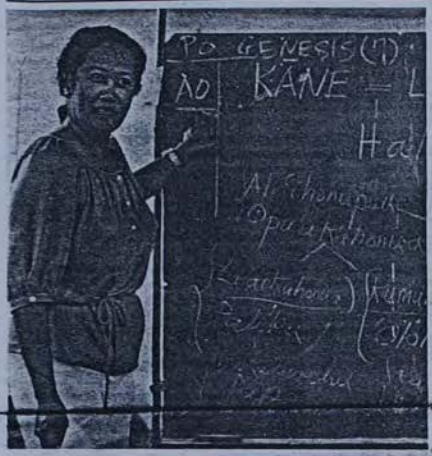
The Degeners, co-authors of *Flora Hawaiiensis or New Illustrated Flora of the Hawaiian Islands*, were cited by the Board of Managers for their continuing contributions, through botany, to botanical science in general and to The New York Botanical Garden in particular. As our Collaborators in Hawaiian Botany they have greatly enriched our Herbarium holdings with their field collections. For decades they have compiled documentation — and worked to preserve — Hawaii's magnificent but severely stressed wildlife resources.

Mr. Anderson, a former editor of this newsletter, is now Honorary Curator of Rare Books and Manuscripts. He was instrumental in the Garden's acquisition of one of its prize possessions, the earliest known medieval manuscript of the *Circa instans*, the fountainhead of modern pharmacology and botany, which he is translating. One of his most recent publications is *An Illustrated History of the Herbals*, Columbia University Press, 1977. The citation noted that despite his official retirement from the Garden, the vast contributions he is making have by no means diminished and it spoke of the "personal and professional enrichment he has brought to all our lives."

1(3) : 18-19. 1966.

The Native HAWAIIAN

Volume III, No. 11 — To Tell The Story of the Hawai'i People So That All May Come to Know the People of Aloha — October, 1979



Hawaiians Take Pride in Special Heritage

The Kumulipo, the ancient Hawaiian account of the origins of the universe, is not just a fanciful myth of old imaginations but records outstanding perceptions and understandings of the environment long held by native Hawaiians before contact with the Western world. It was a premise emphasized by UH Asst. Prof. Ruby Johnson at HONOLULU BOUND, A Cultural Camp Workshop sponsored by the Hawaiian Civic Club of Honolulu recently.

Johnson was one of the highlights in the week-end event packed with a raft of outstanding and knowledgeable resource teachers and eager to learn participants who came from various civic clubs, Alu Like and the D.O.E.

Kalani Meinicke delved into Geneology, UH Prof. Dr. Pauline Joerger surprised an [illegible] individual Hawaiian already exhibiting itself in pre-contact Hawaii. Emma DePries stressed the positive aspects and energies in the Hawaiian meditation process.

Lokomaikai Snakenberg introduced a classic tale into a simple language lesson. Edith McKinzie led groups in chanting various types of oli. Dr. Leialoha Perkins expounded on the necessity for articulating Hawaiian Folklore.

UH Law Prof. Bill Chang argued the merits of native Hawaiian water rights in current community concerns. Kaha'i Topolinski brought his lead dancer to illustrate Hula Kahiko.

Malcolm Springer made the laborous process of making Inamona seem more fun than work. Beatrice Krauss let the group touch and smell the medicinal plants used in Hawaii before and after Western contact and provided striking examples of dyes used on tapa.

Emerson Smith taped examples of developments in 19th century Hawaiian music while Harriette Joesting wrapped the week-end up with a thoughtful evaluation session.

There was time to relax, play, gather limu from the beach shore or sit by a flickering [illegible] and hear new friends. It was a super binge into native Hawaiian culture. It would have pleased the Prince Jonah Kuhio Kalanianaole, the founder of the Honolulu club. One of his chief concerns was the perpetuation of the Hawaiian culture. Everyone left with heightened, positive and proud sense of what being native Hawaiian could really mean.

Molokai Report

Most In Need Program Begins

"Alu Like's field office in Molokai has had a very busy year. For the Most In Need project, $50,000 in grant monies was given by the National Institute of Mental Health," stated Rachael Kamakana.

Hired as a program director was George Osakoda and Dalores Manaba is the new facilitator. Zachery Helm is also a new facilitator and Lita Lin Kee is the new stenographer-clerk.

When ANA (Administration for Native American) Commissioner David Lester visited, he provided technical assistance to local groups who had expressed interest in the $100,000 State of Hawaii Economic Development Grant.

We also formed the IMAC (Island Multi Service Advisory Council). IMAC administrator members are Sister Mary Naab for the Queen Liliuokalani Children's Center, Wilma Grambusch of the Department of Education child study team, John Apuna, DOE teacher, Glenn Izawa with the Department of Mental Health, Verna Albino with Lokahi Pacific and Lei Kaneakua with the unemployment Division of the Department of Labor.

"Lobbying workshops were given by both Hannibal Tavares who is the Maui County Mayor and Dan Horn Diamond," said Kamakana.

The office is continuing to implement job training for Native Hawaiian adults and are working with the Hawaiian Academy of Knowledge, Pua O Hoku Media, Protect Kahoolawe, Legal Aid, Health Advocate, the Probation Department, Maui Maintenance and Buchanan's Inc. and others.

The Youth Project is working with Molokai General Hospital, Hikiola, Hawaiian Academy of Knowledge, Department of Agriculture and the Department of Land and Natural Resources Water Division.

In addition the staff was responsible for the May 1979 edition of TNH.

Maui/Lanai Report

Drug Abuse & Family Crisis Services Planned

On Maui a Hula Oli workshop with 100 people was conducted in conjunction with the Auntie Edith Hanakaole Recognition Day celebration.

Alu Like and the State Foundation for Culture and the Arts sponsored the event.

Lokahi Kuleona's Pacific Prison is the location for implementing a program on the techniques of personal growth.

"We have developed and assisted in the original economic proposal in the Hana area. Worked on a proposal for economic development in the Lanai area and working on a proposal for funding with the Maui and Hawaii State Tutorial Services for Native Hawaiian Hana Waihee and Hawaiian Homes Schools. Students in the Hawaiian Homes Schools are 80 percent Hawaiian," emphasized Goodness.

Alu Like people on Maui are also working to support the drug abuse program and are developing a family crisis community shelter service. "We are presently supporting Maui Aloha Aina groups and promoting awareness for the Kahoolawe Native Hawaiian rights," he added.

Aid and support was given by the office for development of Aloha first halfway house for alcoholics. In the Youth Exploration Program 22 students

Continued on p.8

Hawaii Report

Busy Year for Big Island

Over 3000 people came to pay tribute to Auntie Edith Kanakaole during Recognition Day on the Big Island which was coordinated by Alu Like's field office and Betty Snowden, Island Center administrator.

Auntie Edith Day was only one of many projects Alu Like's Big Island office has been promoting this year. The field office has also set up a Big Island Resource Center with emphasis on recruiting existing Kupuna. All experts in Hawaiiana are needed by the center but the memories and understanding of Ohana by the still living Kupuna is vital.

Other highlights listed by the Big Island for the past year included a campaign to increase circulation and distribution of The Native Hawaiian by working with elementary and high

Continued on p.8

Volcano botanist receives prestigious international award

Hawaii Tribune-Herald, Tuesday, October 2, 1979—3

Dr. Otto Degener, internationally recognized botanist who resides at the Volcano and in Honolulu, was recipient of a prestigious award on Sept. 10, in West Berlin.

Dr. Peter Glotz, senator for science and research in West Berlin, awarded Degener the Willdenow Medal at the 300th anniversary of the founding of the Berlin Botanical Garden and Botanical Museum.

Degener, who is widely known as a Pacific Basin naturalist and conservationist, began his study of Hawaiian plants in 1922 and has continued. His wife, Dr. Isa Degener, joined him in the project in 1953.

The original sets of plants have always been donated to the New York Botanical Garden for which the Degeners serve as staff members representing Hawaii. The best duplicate sets of plants were sent consistently as gifts to Berlin, Bishop Museum and elsewhere.

WILLDENOW MEDAL—Dr. Otto Degener, resident of the Volcano and Honolulu, right, receives prestigious Willdenow Medal from Dr. Peter Glotz in West Berlin, Germany.

The Degeners, separately and jointly, have also published nine books and more than 400 scientific articles about the Fiji and Hawaiian archipelagoes.

Now, in a letter from Degener in Berlin, he states, "the botanical world, with access to such publications—often in international journals, is aghast at the wreckless extermination of Hawaii's peculiar international plant (and animal) treasures of inestimable value intelectually and for research."

And the naturalist had some strong opinions about tourism.

"To enable tourism to continue to flourish, Hawaii must remain Hawaiian," he wrote, "and not ape competing tourist centers that foolishly cover their peculiar lands with the usual gaudy but monotonous bougainvilleas from Brazil, oleander from Greece, hibiscus from China, erythrina from Africa and similar exotic cultigens.

"Why come to Hawaii when you can see such plants nearer home?"

The bestowal of the Willdenow Medal, he added, "shws approval of the study of native Hawaiian plants, their collecting, and preservation in museums before the more ignorant island population exterminates them and our attempt to teach such people conservation."

Degener cites concern among world botanists

HONOLULU ADVERTISER, Friday, September 28, 1979

By JAN TenBRUGGENCATE
Advertiser Kauai Bureau

LIHUE — Dr. Otto Degener, the renowned Pacific naturalist who received an international botanical award earlier this month, says preservation of Hawaii's native plant and animal species is of crucial importance and interest worldwide.

Degener has written from West Germany, where on Sept. 10 he was presented with the Willdenow Medal at the 300th anniversary celebration of the Berlin Botanical Garden and Botanical Museum.

"The botanical world . . . is aghast at the reckless extermination of Hawaii's peculiar international plant (and animal) treasures of inestimable value intellectually and for research," Degener said.

"The bestowal of the Willdenow Medal shows approval of the study of Hawaiian plants, their collecting and preservation at least in museums before the more ignorant island population exterminates them."

The native plants of Hawaii have many uses, not the least of which could be the promotion of tourism, he added.

Hawaii should show off its native vegetation rather than bringing in and decorating its countryside with imported plants available in other resorts, he said.

"To enable Hawaiian tourism to continue to flourish, Hawaii Nei must remain Hawaiian and not ape competing tourist centers which foolishly cover their own peculiar interesting lands with the usual gaudy but monotonous bougainvillea from Brazil, erythrina from Africa, hibiscus from China, oleander from Greece, plumeria from Mexico, and similar exotic cultigens," Degener said.

"Why come to Hawaii when you can see such common plants in cultivation cheaper nearer at home?"

The botanist has studied Hawaiian plants since 1922 and is a staff member of the New York Botanical Garden. He has taught botany, served as naturalist at Hawaii National Park and has a rare "missing link" plant species, Degeneriaceae, named for him.

Monday, October 1, 1979 Honolulu Star-Bulletin A-13

Otto Degener

THE KAMAAINA Island botanist, Otto Degener, was awarded the Willdenow Medal Sept. 10 in ceremonies in Berlin marking the 300th anniversary of the founding of the Berlin Botanical Garden and Botanical Museum.

The medal was given Degener for his work with native Hawaiian plants, his collection of specimens for leading museums in the world, and his work in conservation.

Degener began his study of Hawaiian plants practically full time in 1922 and his wife Isa joined him in the project in 1953.

The original sets of plants he collected were sent to the New York Botanical Garden but duplicate specimens were sent to the Berlin Botanical Garden. Many of them were destroyed by aerial bombing during World War II but duplicates sent to other institutions escaped destruction.

The Degeners, separately and jointly, have published nine books and more than 400 scientific articles about plants of Hawaii and Fiji.

HISTORIA NATURAL Y PRO NATURA

Revista registrada como correspondencia de 1ª clase el 20 de Enero de 1947, el 29 de diciembre de 1964.

Vol. 5 No. 1
Enero, Febrero y Marzo 1975.

DIRECTOR:
Jorge A. Ibarra
Apartado Postal 937
Guatemala, Guatemala, C. A.

CONTENIDO

PORTADA: Uno de los templos más interesantes del centro arqueológico de Tikal, Petén, Guatemala; fue construido hace más de mil años por nuestros mayas. Foto de Rodolfo Reyes Juárez del Instituto Guatemalteco de Turismo.

IMPRESA EN IMPRENTA EROS
Teléfonos: 85364 y 80234

Hunt

Dagners botanizes in Guatemala, + specimens now at N.Y. Bot. Garden. D.

EDITORIAL

Apadrinados por el Círculo Guatecalteco de Periodismo Científico que fundamos en esta ciudad el 15 de mayo de 1974, nos tomamos la libertad de dirigirnos a los directores de los más sobresalientes periódicos de América y Europa, no sin antes haber solicitado a las embajadas acreditadas en nuestro país los nombres de sus directores, solicitud que fue finamente atendida.

El objeto era conocer la opinión que les merecía la iniciativa relacionada con la selección de un símbolo para la paz universal que nosotros lanzamos por medio de nuestra "flor de pascua" y que en esta revista hemos dado a conocer en varias ocasiones, por considerar a dicha planta como la más adecuada en una época en que se olvidan rencores, como es la navidad, lo que no quiere decir que solamente durante las fiestas navideñas nuestra flor de pascua o "poinsettia" como le llaman en el extranjero, encienda sus colores, pues en varios países, entre ellos el nuestro, comienza a florecer en agosto y termina en abril y puede ser que en algunos otros países tal floración se prolongue por más tiempo.

La señorita Joan Lee Faust que tiene a su cargo la sección de jardinería en el famoso diario The New York Times alaba la iniciativa de Guatemala para designar con un símbolo floral la paz universal y escribe que "cualquier esfuerzo en este objetivo sería ciertamente bien recibido por todas las naciones". Recuerda además que la "Poinsettia" en los Estados Unidos es popular durante la estación navideña y se vende en número considerable, siendo común que la planta se entregue como un preciado regalo de Navidad a las amistades. "Sin embargo, —agrega— no se ve en otras estaciones del año" y como se trata de un símbolo internacional debería buscarse una flor "más representativa de la cultura internacional o de las tradiciones religiosas que despierte simpatía o aprobación".

Nos parece muy sensata la opinión de la señorita Lee Faust y lo explicado hace mucho más valiosa nuestra iniciativa, pues con ello se despierta más interés en la búsqueda de una especie floral que simbolice la paz.

Nosotros creemos que la "poinsettia" es la más apropiada para los americanos por ser originaria del cento del Hemisferio Occidental, aparte de su significado implícito, después de haberse consultado a los especialistas en la materia, entre ellos los doctores Walter S. Flory y John M. Fogg, Jr. y Katherine Esau, que figuran entre los más notables botánicos de Norteamérica, cuyos comentarios han aparecido en esta revista, apoyando la iniciativa a favor de nuestra flor de pascua para que se denomine a nivel mundial como la "Flor de la Paz".

Agradecemos las palabras de estímulo de otros importantes diarios, entre ellos el Chicago Daily News de los Estados Unidos —su editor señor Daryle M. Feldmeir reconoce la belleza de esta planta y nos desea éxito en la campaña—, iniciativa que el director de "El Tiempo" de Bogotá, Colombia, encontró muy interesante, como lo apuntó el periodista Jaime González Parra de dicho periódico.

En suma, consideramos muy honroso habernos adelantado en presentar una planta para los anhelos de paz que necesita nuestro planeta atribulado por las acciones bélicas que parecen señalar el fin de la presente civilización y ojalá que en caso de intervenir las Naciones Unidas para la selección de la especie más adecuada a nuestros fines de paz, sea elegida nuestra "flor de pascua" que ha brotado por millones en todos los países del trópico del mundo.