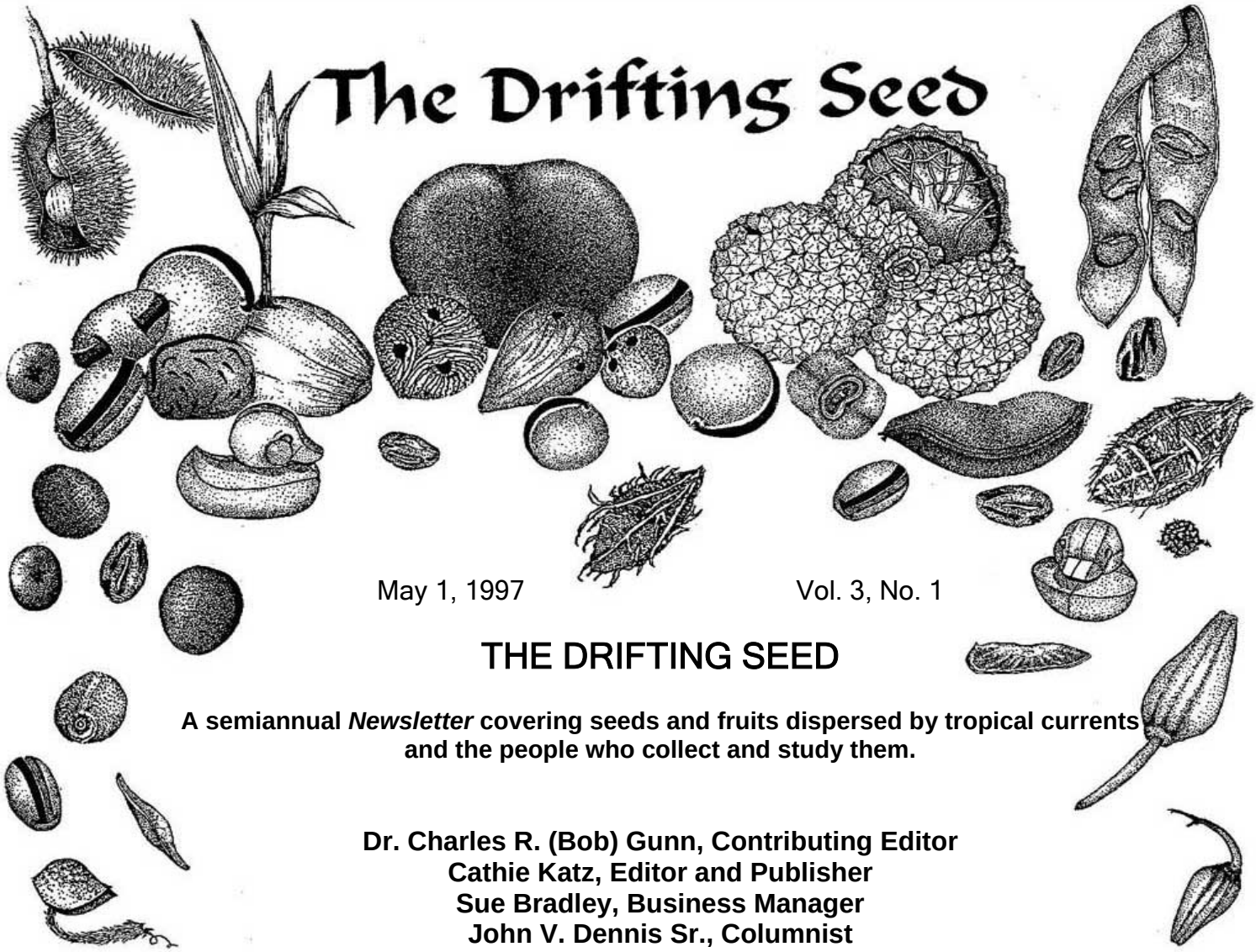

May 1, 1997 Vol. 3, No. 1

THE DRIFTING SEED

A semiannual *Newsletter* covering seeds and fruits dispersed by tropical currents and the people who collect and study them.

Dr. Charles R. (Bob) Gunn, Contributing Editor
Cathie Katz, Editor and Publisher
Sue Bradley, Business Manager
John V. Dennis Sr., Columnist
Pete Zies, Columnist

The Second Annual Sea-Bean Symposium
will be held at the Community Center in Melbourne Beach, Florida
October 16 through 19, 1997
Drifters from Washington, Virginia, North Carolina, Maryland, Alabama …
and possibly Canada and Africa will attend.

Details about the events will be included in the next Drifting Seed in September.

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From Your Editors

From Bob:

Our December 1996 issue was mailed on time, and we appreciate your letters, suggestions, comments and support. I cannot let this opportunity go by without letting you all know how much I appreciate the plaque that you awarded me. The presentation message, printed in the December issue make this plaque even more important to me. The plaque overlooks my computer station, and even as I type this, I can look at it and remember you all. Thank you.

Our *Newsletter* is the result of a fortunate meld of Cathie and my talents, but its success resides in your hands. We need to fill the following columns three times a year, and only you can do this: **Feature Articles** (mainly about collectors, collections, and contributors), **News and Notes from Readers, Recent Literature**, and **Collectors' Gallery** (photographs). We welcome your suggestions for other columns. Please send me your notes and comments and disseminules for identification. If possible please send your articles on either 5-1/4 or 3-1/2 inch diskettes using ASCII or WordPerfect for an IBM compatible computer.

From Cathie:

Joyful news from Pete Zies and his wife Kristen. I received this note from Pete last week: "You may recall how I finally found my first Mary's bean on the 17th of April. Kristen went into labor this weekend, and she took it with her to the hospital. She held it tightly in her hand throughout her labor (as required by the folklore) and took less than two hours to deliver our little girl! Noelle was born on April 26, 1997 and weighed 7 lb. 14 oz. Call this my own sea bean 'experimentation.' It seems that the folklore is true, since Kristen's prior labor was over twice as long!" Congratulations! (Pete's e-mail is **Bazil1@juno.com**.)

Five months have already passed since our First Annual Sea-Bean Symposium … and only five months to go before the next one in October. I've already heard form most of the members of **The Drifters** who will be with us again at the Second Annual Sea-Bean Symposium, October 16- through 19. This year the Symposium will be in Melbourne Beach which is 25 miles south of Cape Canaveral, 150 miles north of Palm Beach and 65 miles southeast of Disney World. Directions and a few suggested hotels will be in September's *Drifting Seed* which will be mailed in August.

Also in the next issue of *The Drifting Seed* will be details about the 4-day sumposium, but I can tell you now that it will include a Bean-A-Thon in the tradition set in the 196-s by Robert Mossman (Jack Beans), Tar-Toes Thomas, Big-Foot Johnson, Diggin' Duggan, Corrine Edwards, the Jessens, and Dr. Gunn in Palm Beach. Pete Zies is putting together a schedule of events, including the Bean-A-Thon.

We'll have lots of things to look for on the beach in addition to beans. Curtis Ebbesmeyer wrote about a spill of Lego® toys last February off the coast of England. Maybe we'll find some during the Bean-A-Thon. Curtis says that he has written to Lego® in Denmark for more information. It's possible that millions were spilled. October is also a good time for finding bottles, toys, shells, and mermaids' purses.

From all the phone calls and notes that I've been receiving from beachwalkers this past year, sea-beans are back on schedule – maybe not as plentiful as in previous decades, but certainly a lot more plentiful than the past two years when our beaches were neglected by the Bean Powers. We hope to compare all our past finds at the Symposium, as well as compare what we find October 16 through 19. (These dates were chosen because this is typically the beginning of sea-bean season in Florida.) What will this year bring us? We hope to gather enough information to shed some light on the beans' periodic arrivals.

In February, I spent a few days in South Florida giving nature presentations and writing talks. I was also a guest on NatureScope, a Palm Beach TV show, arranged by Steve Bass and Nancy Leeds at The Gumbo Limbo Nature Center. While I was there, Debbie Wilson gave me two beautiful *Mucuna* pods (grown by C. B. Jessen) which I now treasure and include in my presentations. Their Center is a naturalist's paradise. Visiting Drifters would benefit from a trip to Boca Raton to see their facilities.

My trip to Kenya has been postponed until next year when I'll be able to spend more time collecting sea-beans there. My schedule at The Applied Physics Laboratory wouldn't allow enough time for a long trip, and since I'll be unemployed when my field office closes next year, I made the logical (but sad) decision to wait. On the positive side, I'll be able to finish my Florida Nature Book series, and learn Swahili.

Featured Articles

A Study of Drift Fruits and Seeds in Papua New Guinea

By
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While I was teaching botany at the University of Papua New Guinea in Port Moresby, from 1985-1991, I made a collection of drift fruits and seeds from several beaches on the north and south coasts of the island of New Guinea. I collected intermittently at first, and then as I became more intrigues with what I found, I pursued my interest in a more organized fashion and enlisted others to help.

I know of two previous studies of drift disseminules in the region. One was made by the botanist on the Challenger Expedition, which circumnavigated the world from 1873-1876. He collected drift disseminules from several localities during the voyage, including off the mouth of the Mamberamo River in the western part of New Guinea, now called Irian Jaya (part of Indonesia). These specimens are preserved in the herbarium of the Royal Botanic Gardens, Kew (London). The other study was done by the German botanist and missionary, Gerhard Peekel. He was based in New Ireland for much of the first half of this century and seeds from his drift collection are illustrated in the "Flora of the Bismarck Archipelago" (Peekel, 1984).

My collecting produced a diverse assemblage of entire fruits, empty pericarps, woody or corky endocarps and seeds, with occasional bulbils of *Dioscorea* and fern rhizomes. Small seeds were often overlooked as my principal method was to walk leisurely up and down a beach, often with friends for company, putting what I found into my collecting bag to sort out in the evening. Only rarely did I sit down on the beach and sift through a small patch of sand to find the smallest fruits and seeds.

Samples from New Guinea contain many well known drift species though some are less well known. I have identified much of my collection using books, by comparing specimens with living plants and dried herbarium materials and with the help of either specialists on drift fruits or botanists who have a specialist knowledge of particular families of plants and of the flora of New Guinea. But the identification of some, even highly distinctive, drift seeds is still problematical, and I plan to continue working on these in 1997. A few are illustrated here. If anyone can suggest names for any ot these indets [unidentified seeds], I would be pleased to hear from them.

The diversity of drift disseminules from New Guinea is quite high, compared for instance with collections from Fiji and islands in the Coral Sea (see Smith 1990 & 1994). So far, fruits and seeds from 48 families have been identified. In terms of the number of species, the most diverse family by far is the Fabaceae (Leguminosae) with 29 and other important families include Anacardiaceae, Combretaceae, Euphorbiaceae and Arecaceae (Palmae). In terms of biomass, magrove species were usually dominant in samples from the south coast, especially those which have comparatively large disseminules including species of the Rhizophoraceae, *Xylocarpus* spp., *Heritiera littoralis* and *Nypa fruiticans*.

I found considerable variation between collections from different beaches (Fig. 1). Some species common on the north coast, such as *Barringtonia asiatica* and *Calophyllum inophyllum*, were rare in the south, reflecting differences in coastal vegetation between the two areas. Hisiu beach, at the mouth of the Aroa River, was often the sources of material that was rarely or never seen elsewhere, and had probably been washed down the river but then got no further than onto the nearby beach. In contrast, the beaches on Motupore Island near Port Moresby produced the seeds of many species that did not grow on the island, as well as numberous plastic sandals, bottles and lumps of expanded polystyrene that were trapped by the receding tide amongst the stilt roots of *Rhizopora* in the mangroves on the landward, sheltered side of the island.

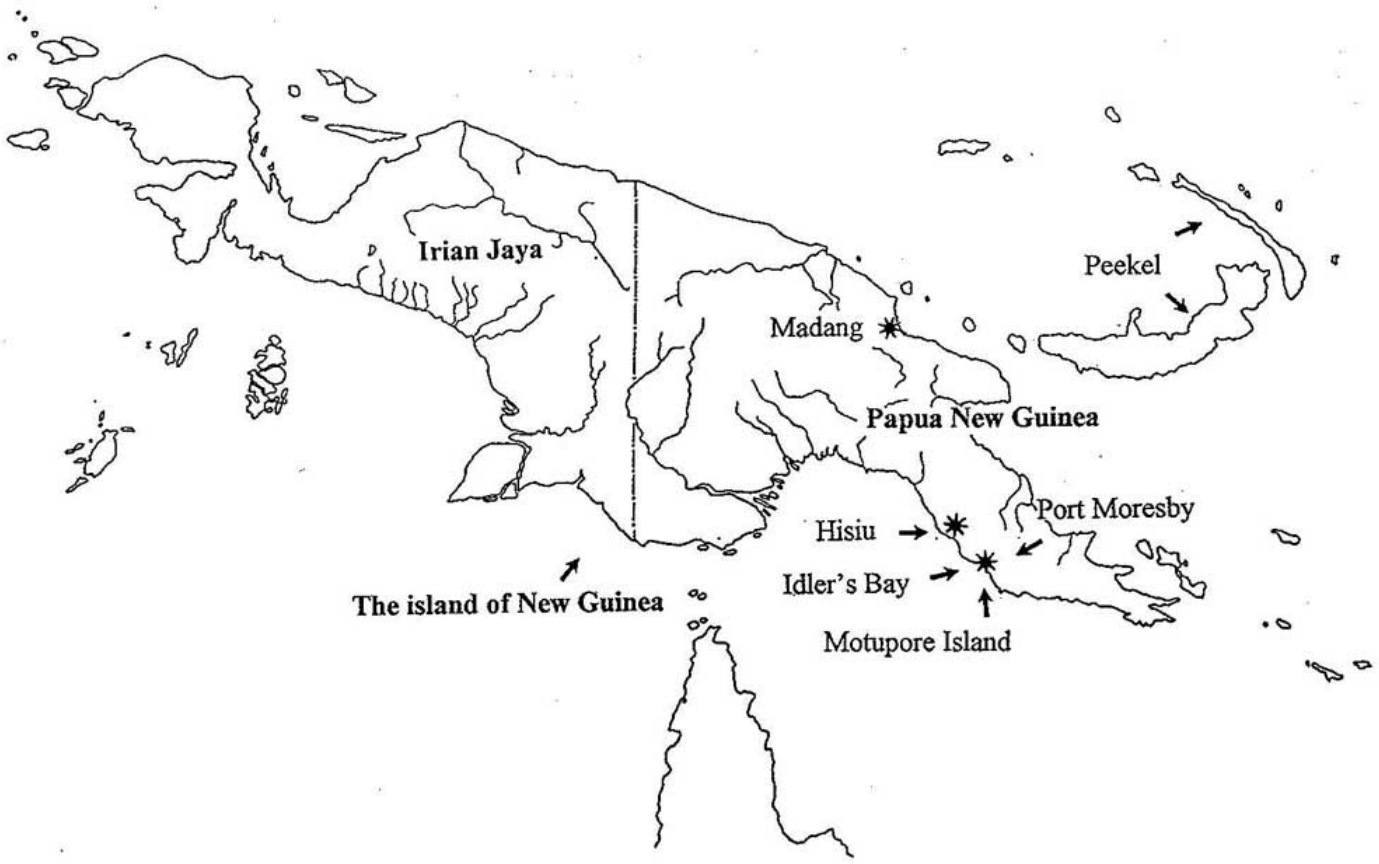


Fig. 1. Map of the Island of New Guinea with collecting locations.

There are several reasons for the relatively high diversity of collections from New Guinea. The island has well developed and species rich mangrove and strand floras which are the source of the majority of the drift disseminules. Lowland forests on the coastal plain are often flooded in the wet season and the receding waters transport some propagules to the sea (e.g. endocarps of *Chlaenandra ovata*). Some other species are abundant in forest along rivers (e.g. *Pterocarpus indica, Mucuna* spp.) New Guinea also has a high mountainous backbone and numerous large, fast-flowing rivers that occasionally transport fruits and seeds of montane and foothill species to the coast (e.g. *Lithocarpus* spp., *Elaeocarpus* spp.).

Working at a university, I wanted to try to make my study scientific and so I decided to make regular monthly collections along 100-meter stretches of sandy beach at Idlers Bay, near Port Moresby. At weekends, this is a favorite place for swimming, snorkeling and picnics, and some of the beach debris, like peanuts and betel nut, reflect human activities. Although we were unable to eliminate the influences of variation in tides and currents from the study, this regular sampling enabled us to look at seasonal changes in abundance and diversity of drift seeds. For instance, the number of fruits of *Brownlowia argentata*, a tree that lives at the back of mangroves and which did not grow at Idlers Bay, varied considerably from month to month, with 707 per 100 meters in May 1990 and only 7 in August and September. Other species were found in more or less equal numbers throughout the year.

Some seeds were sown in pots in a shade house at UPNG to test their viability and aid their identification. One problem with this method is that the period of time the seed has spent in salt water is not known and a negative result is not conclusive proof of inability to germinate after immersion. Not all species were tested but of those that were, many strand species showed good germinability, including *Cerbera* sp., *Cordia subcordata, Excoecaria indica, Hernandia nymphaeifolia, Smythea luctuosa, Guettarda speciosa* and numerous legumes. Disseminules that never germinated included *Lithocarpus* spp. And *Chlaenandra ovata*.

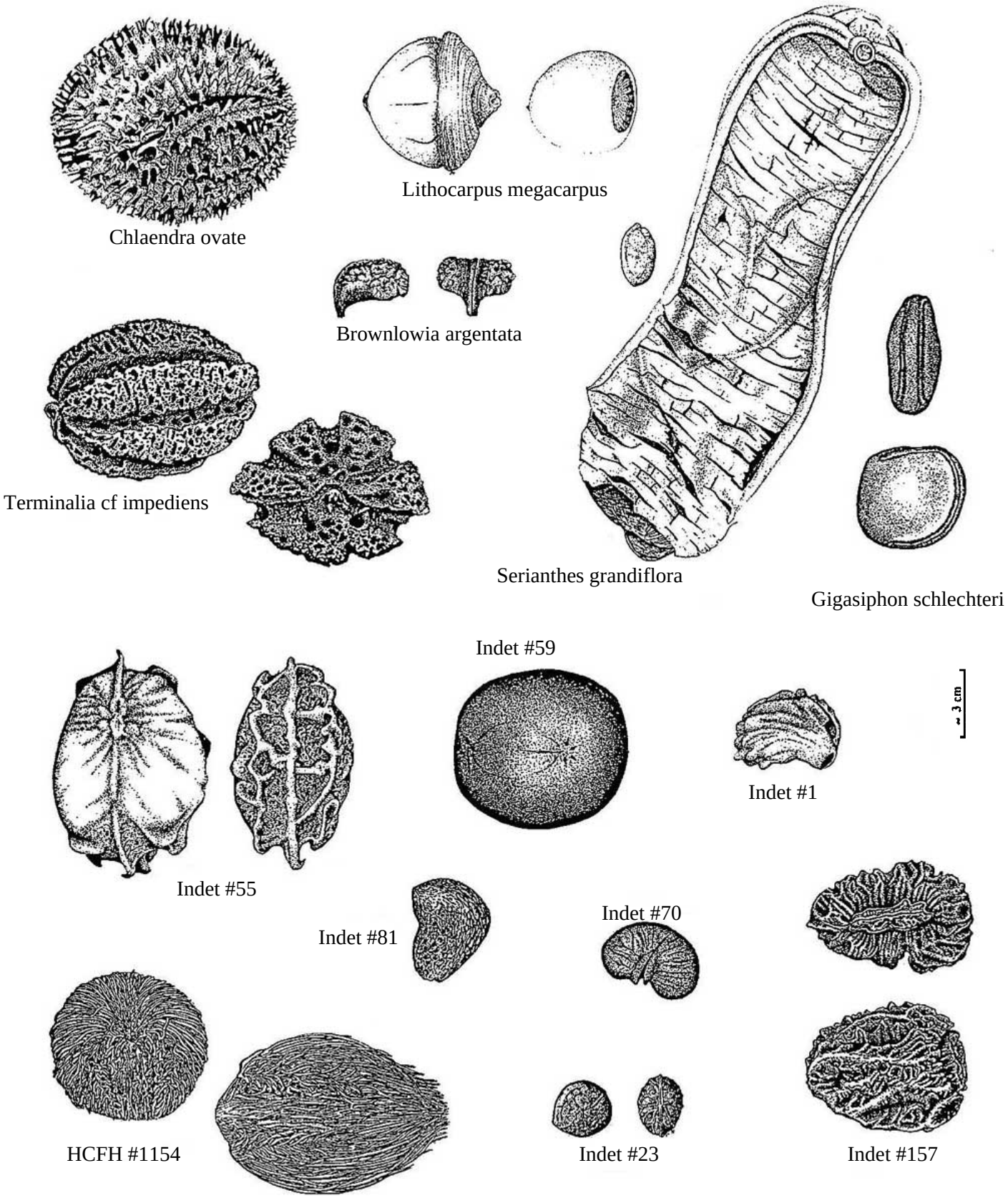


Fig. 2. Selected drift disseminules from Papua New Guinea
(note the scale bar is only approximate).

The role of drift in the dispersal and distribution of plants in the tropics is rather controversial. Drift has clearly been important in producing the wide distribution of many coastal species from southeast Asia and the Pacific (e.g. Ridley, 1930) and this includes many of the species found most commonly in drift samples from New Guinea. Species found less commonly but which are regarded as water-dispersed (e.g. in Flora Malesiana) include *Serianthes grandiflora* and *Atuna excelsa*. A number of drift species are also diplochorous, i.e. dispersed by more than one dispersal agent, such as *Cycas* spp., *Terminalia catappa* and *Spondias* sp., which are all probably dispersed by both water and bats. For those whose seeds are always nonviable after immersion in sea water, drift clearly has no role in their dispersal. This leaves a considerable number which are probably occasionally dispersed by flotation (e.g. *Gigasiphon* sp., *Strongylodon* sp., *Sapotaceae* spp.).

I would like to thank all those who helped me with collecting and identifying New Guinea drift seeds, and especially the Papua New Guinea Biological Foundation for providing funding for drawings by Jones Hiaso, some of which are reproduced here (Fig. 2).

References

Peekel, P.G. 1984. Flora of the Bismarck Archipelago for naturalists. Office of Forests, Lae, New Guinea.

Ridley, H.N. 1930. The dispersal of plants throughout the world. L. Reeve & Co., Ashford.

Smith, J.M.B. 1990. Drift Disseminules on Fijian beaches. New Zealand Journal of Botany 23: 13-20.

Smith, J.M.B. 1994. Patterns of disseminule dispersal by drift in the north-west Coral Sea. New Zealand Journal of Botany 32: 453-461.

An interview with Luis Abreu, who must be the luckiest man on our planet.
By Curt Ebbesmeyer

Judy d'Albert asked a fisherman to toss a message bottle into the currents, while vacationing in Anguilla, West Indies. The message was from her fifth grade class at Harbor Day School, Corona del mar, California. In 1991 Luis Abreu found the bottle at Caibarien, Cuba (northern coast), about 150 miles south of Miami.

After several years of correspondence with Judy and her classes, the Cuban government began to close in on Luis, because of his activities in a human-rights organization. One of its members had recently been sentenced to 11 years in prison. Then Luis and his wife Miriam won a national lottery: the prize, two immigrant visas to the United States. Unfortunately, they did not have the money to get to the United States, and their visas were to expire on 24 February 1996. Late, in 1995, Luis learned through the human-rights organization that he would soon be tried and sentenced to 10 years. He finally wrote Judy and her class. The children raised $1,800, much from their allowances. With this money Luis and Miriam flew to Los Angeles, arriving on 24 February 1996. This was one day before President Clinton closed Cuba, because of the two civilian planes that Cubans shot down.

In my interview of Luis and Miriam, I mentioned drift seeds. Their eyes lighted up when they saw the hamburger-bean (*Mucuna* sp.) that Cathie had sent to me. Cubans used these seeds for remedies for asthma and high blood pressure. They often hang seeds around their necks.

[Ed. Note: Please write to Bob Gunn if anyone knows about other sea-bean remedies.]

Stranded tropical disseminules from Cape Hatteras and nearby beaches in North Carolina, USA
John Value Dennis, Sr.

I have visited Cape Hatteras and nearby beaches eight times in search of tropical drift disseminules. Although temperate disseminules were common, tropical ones were not found on most visits. I did not expect this, because the Gulf Stream is only 15 km offshore. After flowing past Cape Kennedy, Florida, this is the closest that the Gulf Stream comes to the USA. It may take a near gale-force wind or a hurricane with onshore winds to deflect floating disseminules toward the beaches.

Only one tropical disseminule was found in reasonably large numbers: seedlings of the red mangrove. Sixty-two were found on Ocracoke Island beaches to the south of Cape Hatteras and twelve at Cape Hatteras. Gunn and Dennis (1971) noted that red mangrove seedlings were found on Cape Hatteras, Cape Lookout, and Bogue Banks beaches, but none were found on beaches of South Carolina despite of diligent searching. Since the Gunn and Dennis paper, I have found one red mangrove seedling on a Nantucket Island beach, Massachusetts. This is the only record north of Cape Hatteras.

Gunn and Dennis (1972) listed 22 genera from South Carolina beaches, and I have found 10 genera on North Carolina beaches at Cape Hatteras and Ocracoke Island. They are:

Names	Number collected
Carpa guianensis Aublet, Crabwood	1
Crescentia cujete L. (small piece), Calabash	1
Dalbergia ecastaphyllum (I.), Taub., Coin plant	4
Entada gigas (Il) F.&R., Sea heart	1
Erythrina spp., Coralbeans	1
Ipomoea spp., Morning-glories	many
Oxyrhynchus trinervius (Donn. Sm.) Rudd, Island-bean	1
Rhizophora mangle L., Red mangrove	74
Spondias mombin L., Hog-plum	4
Terminalia catappa L., Country-almond	9

The fewer genera found on North Carolina beaches may be partly due to disseminules becoming waterlogged and sinking to the bottom. However, tropical disseminules, as is well known, reach western Europe. Most of them are legumes that have a thick, water-resistant tests and cuticle. But these seeds are poorly represented in North Carolina.

Literature Cited

Gunn, C.R. and J.V. Dennis. 1971. Ocean journeys by mangrove seedlings. Shore and Beach 39(2):19-22.

Gunn, C.R. and J.V. Dennis. 1972. Stranded tropical seeds and fruits collected from Carolina beaches. Castanea 37:195-200.

***Merremia discoidesperma* request**

John V. Dennis, Sr.
P.O. Box 578
Princess Anne, MD 21853

Bob Gunn and I are preparing an article on the Mary's-bean, a highly prized drift seed: the one with a cross imprinted on one face. We would appreciate receiving any records you have on collecting or seeing this stranded seed. For example, David Williams, Midlothian, Virginia, found five seeds in two days in March 1996 along the beaches near Fort Lauderdale, Florida. Please send me your records.

News and Notes from Readers

In mid-May, **Kenn Arning** of Seattle Washington will visit the Cormóros Islands, Madagascar, and the Seychelles, taking the long way around the world. During his month of traveling and beachwalking, Kenn will look for sea-beans and report his finds to us upon his return.

Scott Boykin is now living in Gulf Port, Florida and is attending Eckerd College. He told Cathie that he sees lots of nesting shore birds in Gulf Port, but he hasn't found any sea-beans at all.

Richard Buckman (e-mail: alcot@total.net) sends a picture of him with the 15,000 sea hearts that were collected in Jamaica. He sells them in paper and cloth packages. The paper packed seed is placed in a nest and accompanied by a card of general information and a scroll with lore about the sea heart. The cloth packed seed is similarly packed, except no nest. The cloth package is quite impressive – with its drawstring closure and stitched label. To inquire or receive a catalog (please send a stamped self addressed envelope to): Sea Hearts, P.O. Box 811, Station N.D.G., Montreal, Quebec, H4A 3S2 Canada.

Xander van der Burgt writes, "I found a strange thing on the beach of the Dutch Island of Terscheulling. Some days later I was told that it was probably a *Mucuna sloanei* seed, but it was only a year later that I discovered the *World Guide to Tropical Drift Seeds and Fruits*. I have sown the seed, and it started to grow very quick: up to 15 cm per day!"

Gerhard Cadée has collected drift disseminules on Praslin (Seychelles) and now has a colleague, who working with the seychelle-warbler, will try to make more drift collections. He hopes to have a list ready for inclusion in *The Drifting Seed*. This fall, he searched for drifters on Norderney Island, Lower Saxony, Germany. On a trip to the Royal Botanic Gardens, Kew (London), he found the recently published article by Spence Gunn: see the May 1997, Recent Literature column. He has been contacted with someone who has seen the 94 different drift disseminules collected from the beaches of Brunei. We are arranging to have our *Newsletter* sent to the Brunei Museum, Kota Batu.

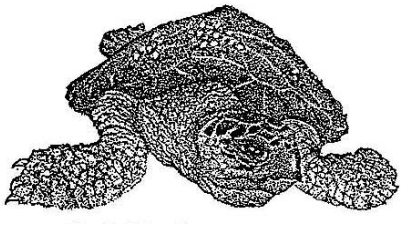
John Dennis, Sr. with **Pete Zies** have prepared and distributed a drift survey sheet to interested collectors at **The Drifters** meeting. If you would like to have a copy, write to Dennis (address in Recent Literature column).

In a recent letter to Cathie, **Ann Robertson** of Malinidi, Kenya indicated that she and her husband may visit the States in October and attend our Symposium in Melbourne Beach. Ann Robertson is a research scientist with the National Museums of Kenya and associated with the Royal Botanic Gardens, Kew (London). She spent six years in the Seychelles and has collected drift seeds from Kenya's coast since the 1980s.

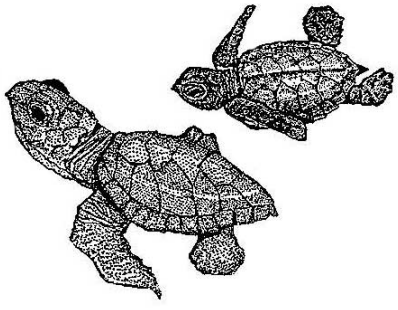
Thank you **Rudi Schmid** for your comment and interest.

Piet Voster of the University of Stellenbosch, Matieland, South Africa (e-mail: pjvor@maties.sun.ac.za) writes that he would like to continue John Muir's work (see *The Drifting Seed* 2:1). He has access to the Muir drift seed collection.

Bernard Zonfrillo (e-mail: 8804751z@udcf.gla.ac.uk), of the University of Glasgow, Scotland, who is an ornithologist, writes about receiving two sea-beans collected in April/May, 1996, from a seabird island Handa, near Cape Wrath, off the NW point of mainland Scotland. His photograph showed a large (black) and small (brown) *Mucuna*; probably *M. fawcettii* and *M. sloanei*. He hopes to write about Scottish collections.



During our Symposium in October, we'll be able to watch sea turtle hatchlings dig their way out of the sand from clutches laid about 60 days earlier. The hatchlings usually emerge at night. We'll have a full moon on October 16 so we'll have plenty of light to watch this wonderful event.



Recent Publications

(Newsletter Readers' names are in **bold** type)

Buckman, R. 1996 (assumed). Sea Heart. Author. [Eds. Notes: This tiny booklet (2.5 X 3.5 inches, 16 pp.) comes with the purchase of a sea heart (*Entada gigas*; see above). This is an exceptionally nice presentation of sea heart facts, lore, and legends, printed on illustrated paper.]

Cadée, G.C. 1996. Tropical drift seeds from the Dutch coast in a wider perspective, paleontological implications. N. Jb. Geol. Paleont. Abh. 202:183-190. [Eds. Note: Drift disseminules may become waterlogged and become incorporated in deep sea sediments, thus complicating reconstruction of paleoclimate and local paleoflora.]

Dennis, Sr., J.V. Undated [1996]. Beachcombers and their hobbies. Author, P.O. Box 578, Princess Anne, MD, 21853 USA. 29 pp. Limited distribution. [Eds. Note: This was used as a handout at the first **The Drifters** meeting, December 4-5, 1996, Cocoa Beach, FL; printed by Kinkos with black and white and colored photographs; and given out or mailed to others. A very brief overview of the history of tropical drift seed collectors; previously published pages from the author's collecting on the Golden Beach and other beaches, north of Miami; and previously published and new photographs.]

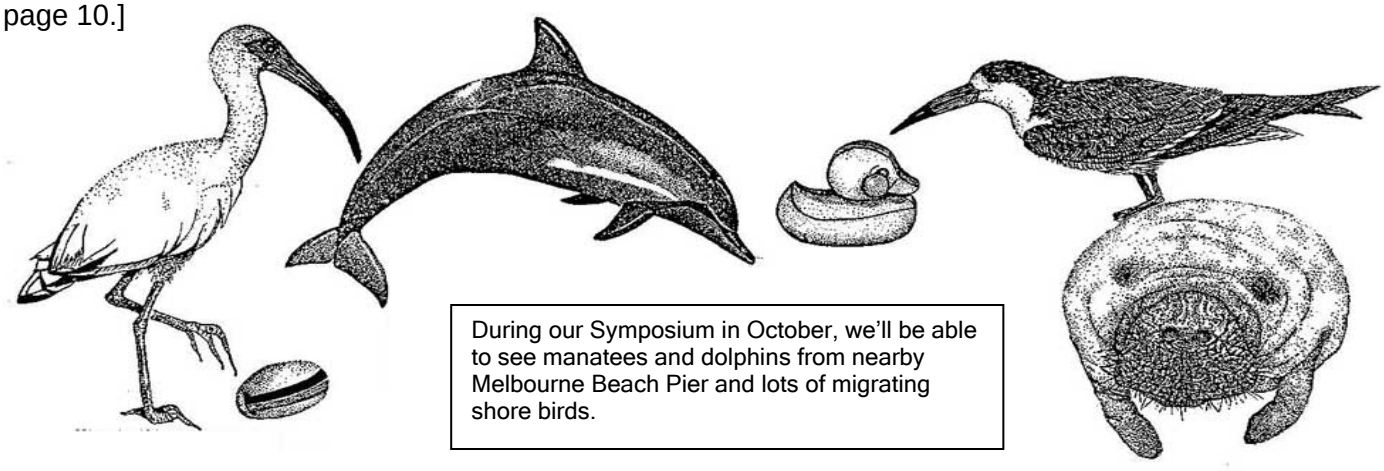
Ebbesmeyer, C.C. 1996. Beachcomber's Alert. Author. [Eds. Note: This is a quarterly issued newsletter about drift and stranded objects, mainly from the Pacific Ocean. Illustrated. $10.00 per year. Address: 6306 21st Avenue N.E., Seattle, WA 98115 USA.]

Gunn, Spence. 1996. Harvest of sea-beans. Kew (Summer): 20-23. [Eds. Note: A popular paper designed to influence beachcombers to look for tropical drift seeds on the Atlantic beaches of the British Isles. See the September 1997 Recent Literature column for additional comments.]

Laithwaite, E.R. 1994. An inventor in the Garden of Eden. Cambridge University Press, Cambridge, United Kingdom. Pp. 87-88. [Eds. Notes: An illustrated but rather poor discussion, including the shape of the coco-de-mer endocarp.]

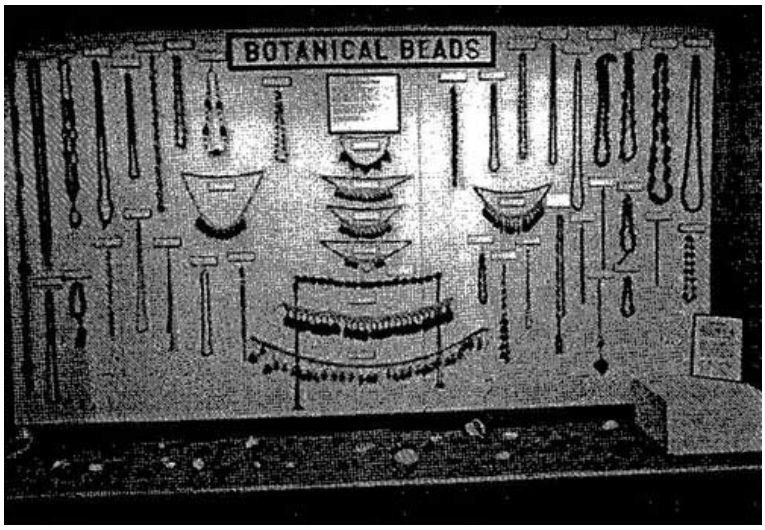
Nakanishi, H. 1996. Introduction of *Narcissus* to Japan and its dispersal by ocean currents. World *Narcissus* Congress 1996, Koshino. [Eds. Note: This is a summary of the symposium: project for a cultural village with *Narcissus* and sea. People have helped drift *Narcissus* bulbs become established. In addition Hiroki has written other papers about seed dissemination by ants, birds, wind, ocean currents, etc. The drift disseminule paper about Yakushima Island, Japan was published in Nagasaki Women's Junior College Annual Report of Studies, 16:45-59, 1992. We want to congratulate Professor Doctor Nakanishi for being named President of his College.]

Smith, Ruth. 1997. Botanical beads – January 24, 1997 through January 11, 1998. U.S. Botanic Garden, Washington, DC. Government Printing Office, 1997 – 37-673. Pp. 4. [Eds. Notes: This is the handout that accompanies Ruth Smith's display of seed jewelry. Important seed elements in the jewelry are discussed and family names given. Notes about botanical beads and drift seeds are included. See photograph on page 10.]



During our Symposium in October, we'll be able to see manatees and dolphins from nearby Melbourne Beach Pier and lots of migrating shore birds.

Hiroki Nakanishi of Japan



Ruth Smith's Seed Jewelry

Richard Buckman of Canada

Kenn Arning of Seattle, Washington