



The Drifting Seed

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THE DRIFTING SEED

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

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**The 7th Annual International Sea Bean Symposium will be held at the
Cocoa Beach Public Library, October 18th-19th, 2002**

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**A “Palm-derous” Question
Or
Going Nuts Over Palm I.D.s
by Pete Zies**

Sea bean identification is a tough enough challenge under normal conditions. We have about 200 documented types of seeds for our Florida shores, and they show up in all sorts of different conditions. When the topic turns to palms, however, it's a whole new ballgame. There are approximately 3,000 species of palms worldwide, and although few are native to the United States, dozens of species have been introduced from around the world. In Florida especially, palms have found a hospitable environment, and nearby sources of drift seeds (Central and South America, and the Caribbean) show an even wider array of palm families. With all of that in mind, it is fair to say that you never know what to expect when you find a drift seed “that might be a palm.”

If you look hard enough, there are resources available to help with palm seed identifications. *Palms of the World* by James C. McCurrach (1960), and *Supplement to Palms of the World* by Arthur C. Langlois (1976) are two reference works of great value. Fairchild Tropical Gardens in Miami, Florida has one of the largest palm tree collections in the world, and Scott Zona works there as a research scientist in the Palm Biology Program, in which capacity he has offered to assist us with difficult identifications. There is even supposedly a Palm Society based in Miami which maintains a seed bank, but I have been unable to confirm its continued existence. With some effort, you could find more information about palms than you could ever absorb, but what is it that we need to know?

On the beaches of Brevard County, Florida there are about a dozen species of palm seeds that have been reliably documented as drift seeds. You have to keep an eye out for the “red herrings”, like the Coco-de-Mer that was found on Merritt Island, that aren't bona fide beach recoveries. The sheer shock value of such a rare seed forced us to delve deeper into its provenance, eventually discovering it came from a garage sale, not the beach (to Cathie's endless delight!) Our real drift seed palms include the ubiquitous Coconut (*Cocos nucifera*), The Prickly Palms (*Acrocomia* spp.), the Starnut Palms (*Astrocaryum* spp.), The Bactris Palm (*Bactris balanoides*), the African Oil Palm (*Elaeis guianensis*), the Sleeve Palm AKA Sea Coconut (*Manicaria saccifera*), the Maripa Palm (*Attalea maripa*, formerly *Maximiliana caribaea*), the Nypa Palm (*Nypa fruticans*), the Cohune Palm (*Attalea cohune*, formerly *Orbignya cohune*), the Sabal Palm (*Sabal palmetto*), and the Ivory Nut Palm (*Phytelephas macrocarpa*).

Everyone knows what a coconut looks like, but some of the other palm seeds can be problematic. Sea Coconuts can be very common at the right time of the year, being about the size of a ripe plum and mahogany brown when fresh, fading to white as they bleach in the sun. Prickly Palm seeds look like black jaw breakers and are as hard as rocks. You can identify them by the three holes, or pores, around the midsection, or “belt” of the seed. Starnuts usually look like a black tear drop, either plump or elongated, and have a distinctive pattern of lines or striations down the body of the seed, which form “stars” around the three pores at the

seed's base. Sabal Palms have tiny seeds the size of a pea, which are hard and can be rust red, brown or black. The rest of the palms are rarer and harder to identify.

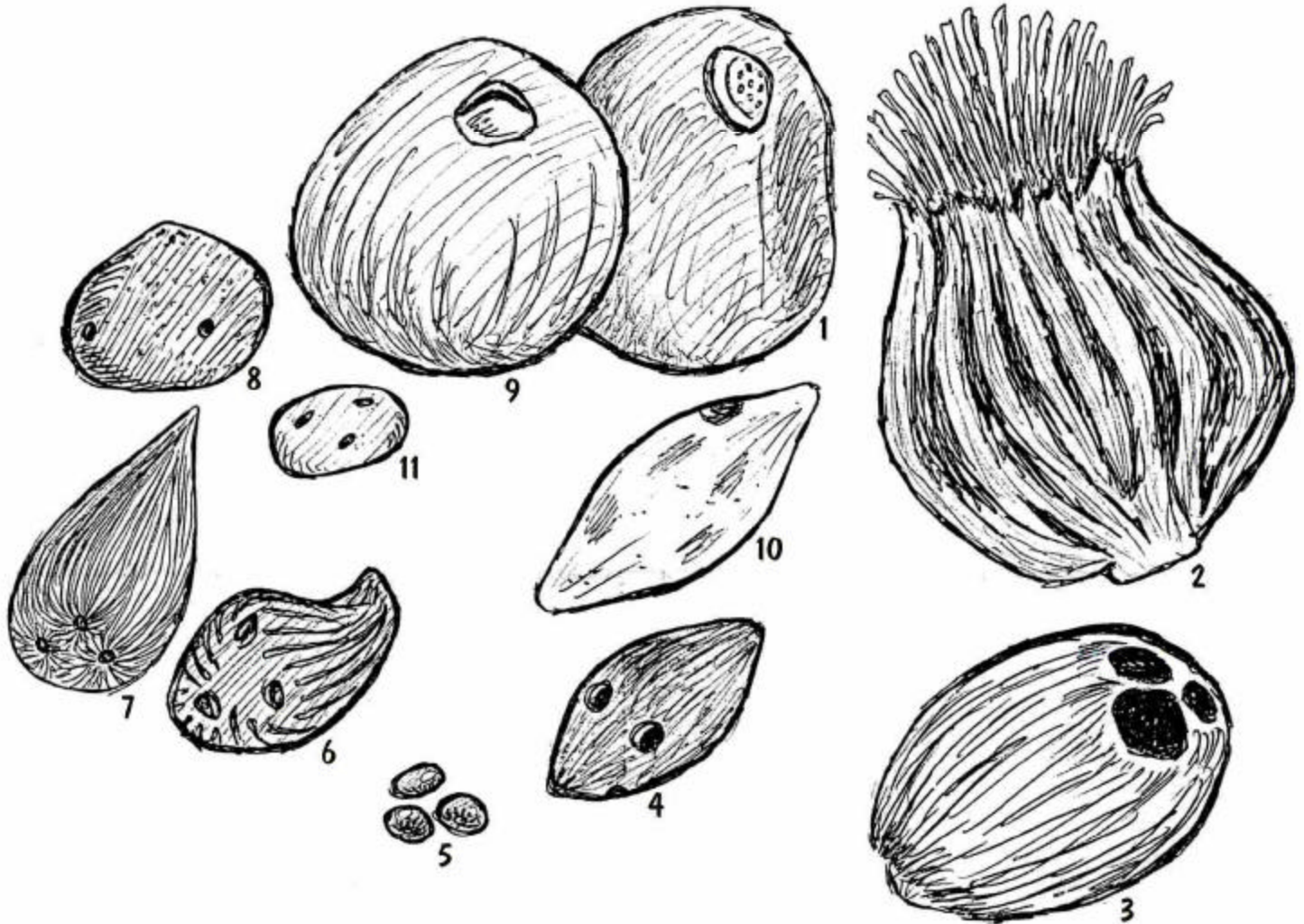
Cohune Palms always show up in a heavily eroded condition, and so no two disseminules look very similar. They tend to be about the size of a chicken egg, with both ends of the seed worn, and the three pores on the more worn end gaping large enough to look like internal cavities. Genuine Maripa Palm drift seeds are rare, and authentic ones are usually tan, smooth, and in the shape of a "plump spindle" (oval with points at either end), about two inches long. They have been confused with a seed Dave Williams nicknamed the "rabbit head" palm, which is really one of the species categorized as a cocoid palm. These "false Maripas" do bear a resemblance to an imagined rabbit head or skull, with one pore forming the mouth, the other two offset pores are the eye sockets, and a small point at the end is the nose. This seed is hard, black, smooth, asymmetrically ovoid, and about two inches long. The Nypa Palm seeds are distinctive, but show a wide range in size and extent of deterioration. When fresh, they look like a brown spearhead with the point frayed with bristles. As they dry on the beach, the seed coat develops linear cracks and the seed body compresses as it dehydrates, causing the seed outline to become more irregular. They can be over four inches long.

The last few palms fall into a "look alike" category. The Ivory Nut Palm can be easily mistaken for a Sleeve Palm seed, since they are both roughly the same size and color. The Ivory Nut Palm seed can be distinguished in that it is not symmetrical in its outline as the Sleeve Palm is, looking either "hump-backed" or compressed near the attachment scar, and where the attachment scar on the Sleeve Palm shows an indented crescent, the Ivory Nut Palm shows a raised oval with several large pores. The African Oil Palm is visually similar to the Star Nut Palm seeds. It also has roughly tear-dropped seeds with surface striations and 3 pores at the base, but it can be told apart because the seeds are not symmetrical in outline, instead appearing squashed or twisted, the lines on the seed coat are much coarser or widely set than the Star Nut's striations, and the lines do not form the "stars" around the pores at the seed base.

The Bactris Palm is the most difficult to identify. The reference works only mention "a plum-like fruit" without describing the seed. Dr. Gunn's collection only has four specimens, and two of them are actually "false Maripa" seeds that belong in the cocoid palm bin. The remaining two are small, gray, 3-pored disseminules with no other similarities to each other. One of them may actually be a different palm species, *Elaeis oleifera*, based on a similar specimen elsewhere in the Gunn collection. Without detailed reference material for comparison, we'll need to continue wondering what *Bactris* really looks like. I would classify the final specimen as "unknown."

Beyond these are the rest of the palm seeds that we find that we simply cannot identify. Dr. Gunn's collection has 22 bags of "cocoid palms" that couldn't be identified more precisely. Several different species are clearly present under this blanket category. My own collection has scores of unknowns that I know are palms, but that I cannot specifically nail down to one of the 3,000 species. Rather than being frustrated by this, we should revel in it. This is where the adventure lies in our hobby. The search for the unknown. The quest for knowledge. This is what brought each of us into this unlikely circle of beach-combing friends under Cathie's

light-hearted guidance, and it is hopefully what will keep us together, even with her passing...I miss you Cathie!



Pictured above is a drawing by Pete Zies illustrating several palm species. Clockwise from the top: 1. ivory nut 2. nypa 3. cohune 4. "rabbit head" 5. sabal 6. oil 7. starnut 8. prickly 9. sleeve 10. center=maripa 11. left of center=bactris sp?

"There is a nameless fascination about collecting . . . there is always something ahead to look to and strive for . . . There is something akin to the gloating feeling of a miser about it, even if the one getting the material together has no real scientific knowledge. But when one really gets interested in the living things, when one begins to study their relationships, past history and migrations, then one has something really worth while."

Charles Torrey Simpson in *Florida Wild Life* (1932)

I Saw Cathie Today by Pete Zies

I was in Indialantic for Thanksgiving visiting with my parents. I wanted to see Cathie, but I knew I'd be in town for a few days, so I passed Thanksgiving Day catching-up and spending time with my family. Sitting at Thanksgiving dinner, I got the call from Celia, and the ground opened up under me. Cathie was gone. I should have been prepared, we all knew she was very ill, but I simply wasn't.

Needing solace, and wanting to wrest sense out of the chaos, I went to my "thoughtful spot," the beach, early the next morning. I wasn't sure how the beach would "feel" this time, and at first I was numb to it. I plodded along lead-footed and lost in thought. I wondered what I could have done differently and how we would deal without her at our helm. Blinded by the whirling thoughts in my head, I was oblivious to what transpired all around me.

With my head hung low in dejection, a gentle breeze from off of the ocean tousled my hair, and in it it seemed a familiar presence flitted by briefly. Stirred by this, I brought my head up, and just caught the sunrise peeking over the clouds. The rising sun beamed at me with a grin that was all too familiar, and I basked in the warmth of my friend's smile. Growing more aware of things about me, I watched the surf rush up the face of the beach, lose strength, and eventually recede back down. In that moment it struck me, as clearly as if I was listening to Cathie speak, "This is just the way of the world, Pete. It's Nature's way. All things must pass." And strangely enough, making that realization on the beach was much more comforting than hearing the words ring hollow from someone else. As the water receded, tiny shorebirds ran in and raced along the water's edge probing the sand. Their ceaseless searching struck a chord of memory, and Cathie's inquisitive spirit radiated from their fleeting forms. My beach walk brought me close to a flock of terns and gulls which raised a chorus of laughing calls as I passed, and in my reverie, I could hear Cathie's bubbling mirth in their cries. For a distance I walked in solitude without distraction on the beach. The sun was up by now, and the soft sand, warmed by the sun, cushioned and comforted my bare feet as I moved along. Even something as simple as a feeling of warmth and comfort now triggered a memory of warm friendship shared with Cathie. My senses tingled with all that I was experiencing, and my head was no longer hung low, but rather up and alert to what else I might see, either with my eyes or with my heart.

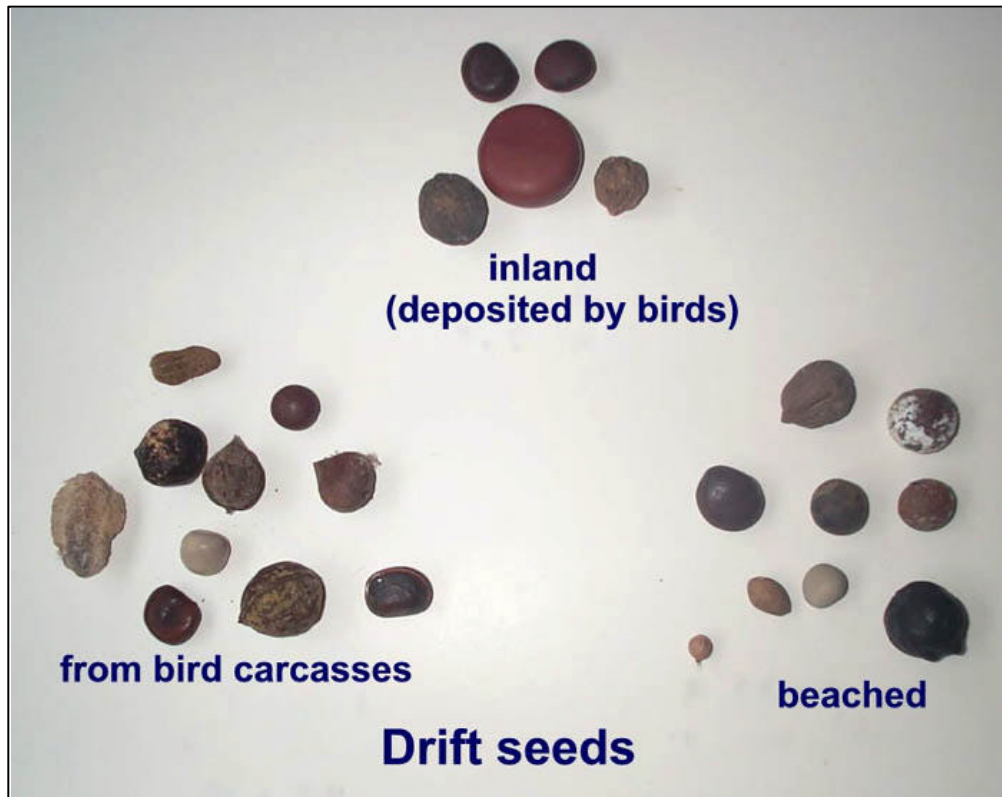
A line of pelicans gracefully winged by overhead, mirroring in my mind the soaring enthusiasm Cathie held for our shared pastime. As I watched them glide down the shoreline, I felt as if the dark mood that had haunted me took wing and flew off with them. I was certain that something special was happening, and each step brought me a new sign from Cathie. The glitter of the sunlight on the waves transformed into the gleam in Cathie's eye when talking about sea beans. Though cheered, I still was troubled over what would come of our organization, now that our "linchpin" was gone. I gazed out on the ocean, towards the boundless horizon, as if I could find an answer there, and was reminded of Cathie's limitless optimism. I looked up at the clear blue sky, felt an ocean breeze on my face, and was infused with Cathie's beatific demeanor.

Driftseeds of Midway Atoll National Wildlife Refuge

by Billi F. Wagner
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From September through November 2001 the following seeds were observed on Eastern and Sand Islands, part of Midway Atoll NWR. At 28^o 12' N and 177^o 22' W, the refuge is 1200 miles NW of the main Hawaiian Islands. The majority of the seeds are peregrine, true drifters, originating hundreds or even thousands of miles away¹. Although none have been tested for viability, they have in common prolonged flotation capacity. This characteristic is a colonization strategy of some plants. Charles Darwin kept a variety of seeds in tanks of saltwater to demonstrate and account for means of plant dispersal to islands². Driftseeds are usually deposited on beaches by wind and/or tide, after travelling from their source on ocean currents. However, on the Midway Islands a higher number and variety of specimens were found inland, having been transported by two albatross species. Both Laysan (*Phoebastria immutabilis*) and Black-footed (*P. nigripes*) Albatrosses search the North Pacific Ocean primarily for squid and flyingfish eggs to feed growing chicks. They have been tracked as far as 7000 miles from their nests³. Birds tend to congregate near rafts of flotsam which attract marine life. Ingestion of plastic objects, driftseeds and pumice occurs because the birds settle onto the surface to pluck and consume prey and apparently prey-sized items⁴. Albatross chicks are fed the parent's stomach contents. Some of the chick carcasses examined had ribcages clogged with marine debris. Driftseeds and plastic found on the ground is presumably from carcasses no longer extant due to weathering, or left by fledglings that managed to regurgitate the accumulated material⁵.

DRIFTSEED LATIN AND COMMON NAME	NUMBER IN CARCASS	NUMBER ON SHORE
<i>Aleurites moluccana</i> - candlenut, kukui.	20+	30+
<i>Juglans sp.</i> - Japanese walnut ⁶	15+	0
<i>Dioclea sp.</i> - sea purse	7	3
<i>Entada sp.</i> - sea heart	2	0
<i>Caesalpinia bonduc</i> - nickarnut, sea pearl	1	1
<i>Mucuna sp.</i> - hamburger bean	1	2
<i>Terminalia catappa</i> - almond	1	3
<i>Calophyllum inophyllum</i> - Alexandrian laurel	0	2
<i>Scaevola sericea</i> - beach naupaka	0	1
<i>Pistacia vera</i> - pistachio	0	1



Billi Wagner's drift seeds collected on Midway Atoll from various locales, most interestingly from bird carcasses.

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- ¹ Smith, J.M.B. 1999. *Australian Driftseeds*.
- ² Darwin, C. 1856. On the action of Sea-water on the Germination of Seeds. *Linnaean Society Journal i. (Botany)*, pp. 130-140.
- ³ Anderson, Dave. www.wfu.edu/albatross
- ⁴ Harrison, C.S. 1990. *Seabirds of Hawaii*.
- ⁵ Rickards, S. pers. comment.
- ⁶ Kazunori, Fujimoto. pers. comment.

"Let our minds play with ideas; let our senses gather information; and let the rich interaction proceed as it must."

Stephen Jay Gould in *Dinosaur in a Haystack*

The Lucky Bean
by John V. Dennis
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Very often bamboo is mentioned when reading about sea-beans. This makes one wonder if there is any connection between the two. Do sea-beans and bamboo arrive on distant shores by way of the same ocean currents? And do both have their origins in the same parts of the world's tropics?

In order to examine these questions, I have looked for references to the two in the literature and in notes of my own. An example is afforded by Cocos-Keeling Islands in the Indian Ocean. H. B. Guppy, in his 1890 paper on these islands, states "that a voyager nearing the islands can observe various drift seeds and fruits floating on the surface of the ocean." The arrival of bamboo on the islands was reported by H. N. Ridley in his *Dispersal of Plants Throughout the World* (1930). Ridley states, "Sugar cane which grew on the island was derived from a clump which washed up on the island from Java 700 miles away. Living bamboos have been washed up there."

Nantucket Island off the southeastern coast of New England and nearby Cape Cod receives sea-beans from time to time (see Dennis and Gunn, 1975).

During the summer of 1975 a large floating piece of bamboo (12 feet long and 7-8 inches in diameter) was recovered five miles south of the island in the ocean. A blue-faced file fish, a tropical species, darted from the open end of the cane.

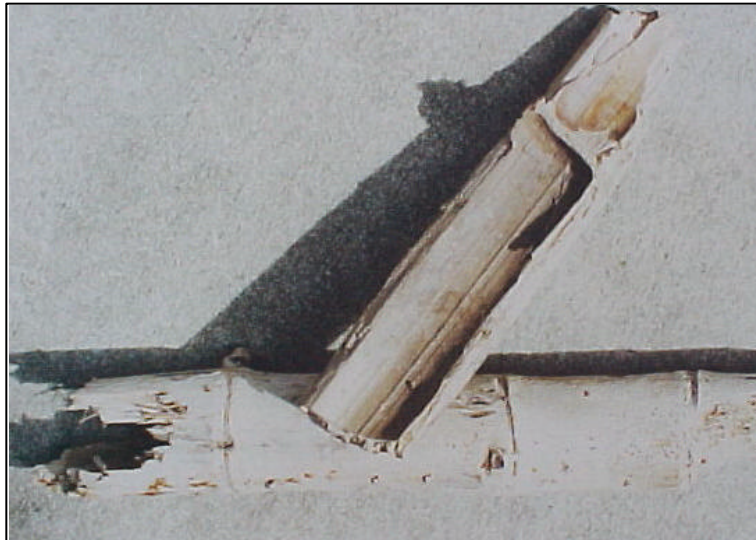
As reported by Gunn and Dennis in their new edition of *World Guide to Tropical Drift Seeds and Fruits* (1999 reprint), deep sea dredging in the Caribbean yielded nine species of tropical drift seeds, and also on the bottom were quantities of vegetable debris that included coconut husks, tropical thorns, pieces of wood, bamboo, and stalks of sugar cane.

Floating canes of bamboo 6 inches in diameter were listed among the debris observed in a current rip in the Pacific Ocean half way between the coast of Panama and the Galapagos Islands. This was reported by William Beebe in his book *Arcturus Adventure* (1926). A coconut in-the-husk and drift seeds were in among the debris.

Both in the Cayman Islands off Cuba and beaches of the southeastern coast of Florida, large bamboo canes are commonly found. Corrine Edwards, in a letter to me of September, 1976, states that on a visit to the Caymans, she saw no bamboo growing on them. But she did observe huge bamboo canes with fine branches and shoots on them on the beaches. She was collecting shells and tropical drift seeds.

I measured a bamboo cane stranded on the beach at Palm Beach and it was about 28 feet long and 5 1/2 inches in diameter. Numerous large goose-neck barnacles attached to the cane indicated that it had been afloat for a long time. Other driftwood on the beach included trumpet tree (*Cercropia palmata*), *Pandanus*, gumbo limbo, and Australian pine.

That bamboo canes and tropical drift seeds are so often found on the same beaches suggests that both have the same origins in the Tropics. Flooding and coastal erosion could carry the seeds and bamboo out to sea and within the orbit of ocean currents. Not only is bamboo uprooted during flooding, it is cut by man during land clearing and is used for fishing poles, channel markers, and to pole small boats in shallow water. That bamboo and tropical drift seeds are so often found on the same beaches is a coincidence. But the bamboo could be a clue to the presence of tropical drift seeds.



Pieces of bamboo are a common occurrence on beaches that also strand drift seeds.

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Beebe, W. 1926. *Arcturus Adventure*. G.P. Putnam's Sons, NY.

Dennis, J. V. and C. R. Gunn. 1975. Sea-beans from beaches of Cape Cod and the islands. *Cape Naturalist*. 3(3): 40-45.

Gunn, C. R. and J. V. Dennis. 1976. *World Guide to Tropical Drift Seeds and Fruits*. Demeter Press, New York (reprint 1999, Krieger Publishing, Inc., Palm Bay, Florida).

Guppy, H. B. 1890. Dispersal of plants as illustrated by the flora of the Keeling or Cocos Islands. *Jour. Trans. Victoria Institute*. 24: 267-306.

Ridley, H. N. 1930. *Dispersal of Plants Throughout the World*. Reeve, London.

"Always, then, in this flotsam and jetsam of the tide lines, we are reminded that a strange and different world lies offshore. Though what we see here may be but the husks and fragments of life, through it we are made aware of life and death, of movement and change, of the transport of living things by tides, by wind-driven waves."

Rachel Carson in *The Edge of the Sea*

The Inside Story – or, What’s in a Hamburger Bean

by Cathy Yow

The Hamburger Bean, the name many of us beaners use for “*Mucuna urens*” and other *Mucuna* species was first known to me as the “True Sea-bean,” from Gunn & Dennis (1976). In reviewing the literature on medicinal properties and uses of *Mucuna urens*, I was led most often to numerous references on *Mucuna pruriens*, a close cousin of *M. urens* but one that is not considered a driftseed. To make things more confusing, many sources suggest that the common name “cowitch” (sometimes “cowhage”) refers to both *Mucuna urens* and *Mucuna pruriens*, when discussing medicinal properties and effects of *Mucuna urens* and *Mucuna pruriens* seedpods and seeds.

Regardless of the species, it seems that the hairs on the seedpods of many plants in this genus cause itching. These include: *Mucuna atropurpurea*, *M. coriacea*, *M. flagellipes*, *M. gigantea*, *M. hirsuta*, *M. melanocarpa*, *M. monosperma*, *M. nigricans*, *M. poggei*, *M. pruriens*, *M. quadrilata*, *M. sloanei*, *M. stans*, and *M. urens*. Many of these species have been referred to as “cowitch.” Cowitch seems a long shot for a common name, but not so when you consider its origin. “Cowitch came into being by attempts to force a meaning (i.e. itching) into a distorted form, first 'ke-whage' and then 'kowhage' of the Hindu name 'kewach' (Burkill 1935).” “Pruriens” is from Latin, meaning “itch.” The hairs contain tannin and resin, and it is said that there is no cure for the dreadful sting they deliver. So beware!

My favorite description of *Mucuna pruriens* seedpods (similar to those of *Mucuna urens*), by-the-way, comes from the *Grieve Modern Herbal* (1931): “The pods or legumes, hairy, thick, and leathery, averaging 4 inches long, are shaped like violin sound-holes....”

Why anyone would want to use these itching, stinging seedpod hairs is hard to understand; nevertheless, *King’s American Dispensatory* (1898), tells us that a brew of the hairs can be mixed and consumed as a vermifuge, if you need to get rid of certain types of intestinal worms. Apparently, the prickly hairs are supposed to stab the worms to death. Yuk; I wouldn’t try it!

Perhaps a better and more contemporary possibility for medicinal use of *Mucuna* plants reveals itself in the pods and seeds rather than in the stinging hairs. The pods contain significant amounts of the amino acid L-dopa (Armstrong). L-dopa mimics one of the human brain’s chemicals, dopamine, a neurotransmitter whose undersupply or oversupply are characteristics of Parkinson’s Disease (too little dopamine) and Schizophrenia (too much dopamine).

Other medicinal uses listed in early texts and herbals for *Mucuna* species seeds are as an aphrodisiac, as a remedy for hemorrhoids, for dysuria (difficulty urinating), and as a local stimulant in paralysis (in ointment form). “A decoction of the *root or legumes* is said to have been used in dropsy as a diuretic and for catarrh, and in some parts of India an infusion is used in cholera (*Grieve Modern Herbal*, 1931).”

As a lay person, though, I’d leave the medicinal uses of *Mucuna* species to the experts!

If you'd like to find out more about *Mucuna* species and current research on these plants, you might want to look up current information on these plants in *Mucuna News*, a newsletter which began publication in 2001 and contains information on a Rockefeller-funded project concerning *Mucuna* as a food and feed crop. Although much of the research concerns African *Mucuna* species, there is interesting information on *Mucuna* species from Mexico.

Here are some websites that discuss *Mucuna* species:

http://ppathw3.cals.cornell.edu/mba_project/CIEPCA/MuNews.htm (source of "*Mucuna News*")

<http://waynesword.palomar.edu/ww0703.htm> (Wayne's Word section on alkaloids, L-dopa, *Mucuna*)

<http://rimmo.mur.csu.edu.au/Plantnames/Sorting/Mucuna.html> - an interesting treatment of *Mucuna* terms

<http://www.botanical.com/> - information on the *Grieve Modern Herbal*



***Mucuna urens* (left) and *Mucuna sloanei* (right) are the two most common *Mucuna* driftseeds on Florida and Texas shores. The seedpods of *M. sloanei*, covered with stinging hairs, are pictured below.**



News and Notes

We have heard from **Tom and Kathy Godbold** from Santa Rosa Beach, Florida. Tom has been giving sea-bean programs to the local garden clubs and schools and was in need of information and photos, especially on growing sea-beans. Tom is a member of the South Walton Turtle Watch and works in Topsail State Preserve in Walton County.

The **3rd International Canopy Conference** will be held June 23-28th in Cairns, Australia. This conference is jointly sponsored by the Queensland Government and the Smithsonian Institution. Registration forms and full details are available at: www.premiers.qld.gov.au/about/science/canopyconference

The **Astronaut Trail Shell Club** presented a scholarship to **Lisa Walls**, University of Central Florida, in honor of **Cathie Katz** at their awards banquet on January 18th. Ms. Walls' masters degree thesis research is entitled "Recruitment of the oyster *Crassostrea virginica* on intertidal reefs in areas with intense boating activity in the Indian River Lagoon."

We would like to thank **Professor Dr. P. Goetghebeur** (University of Gent, Belgium) for sending a comprehensive student paper (Sofie and Hannah) on "**Drift Seeds in Papua New Guinea.**"

After nearly 11months at sea, a message bottle from the **Canary Islands** arrived on Florida's east coast Nov. 21st, 2001 and was recovered by park ranger **Lori Veber** of **Sebastian Inlet State Park** (Melbourne Beach, Florida). The bottle carried 7 messages from La Palma residents which were sent on New Year's Day, 2001. The messages were written in Spanish, but after translation, the purpose behind the bottle was to wish the World a happy and peaceful year. Lori has written back, sending maps of Florida and the Atlantic currents, Sebastian Inlet brochures, some sea-beans, and a letter full of questions. Now *they'll* need to translate!

In the September issue of **The Drifting Seed** we will include more information about the upcoming Beachcomber's Festival and Sea-bean Symposium to be held once again at the Cocoa Beach Public Library, October 18th-19th, 2002. This year's **T-shirt design** will also be displayed, and advance orders will be appreciated, especially for those that wish for small, and extra-large sizes. The design will continue to be a celebration of Cathie's artwork! Please contact Sue Bradley in advance for any large or special orders. Thank You!

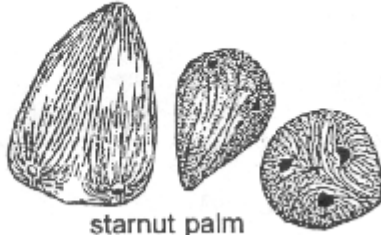


Several of you made comment at the last symposium that you would like to have a special bean named in honor of Cathie Katz; one that didn't already have a name. My choice after reviewing several seeds was *Canavalia nitida* (page 130 of the *World Guide*). The reason of choice was that, as far as I know, this seed doesn't yet have a common name. In my opinion, the two pictured at the left are the most beautiful driftseeds in my entire collection. They have always reminded me of Cathie, anyway, as they are rare and beautiful, and red! I nominate this seed to be called **Cathie's Bean** henceforth. Please let me know what you think.

Simple Guide to Common Drift Seeds
 (Illustrations by Cathie Katz and Pamela J. Paradine)



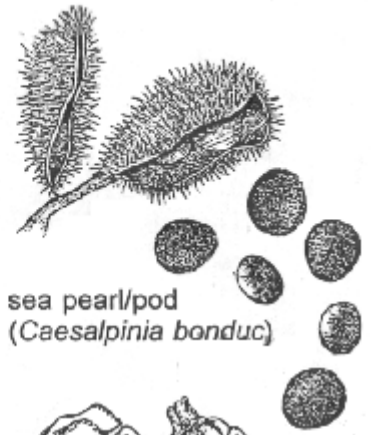
hamburger bean
 (*Mucuna* spp.)



starnut palm
 (*Astrocaryum* spp.)



country almond
 (*Terminalia catappa*)



sea pearl/pod
 (*Caesalpinia bonduc*)



bay bean/pod
 (*Canavalia rosea*)



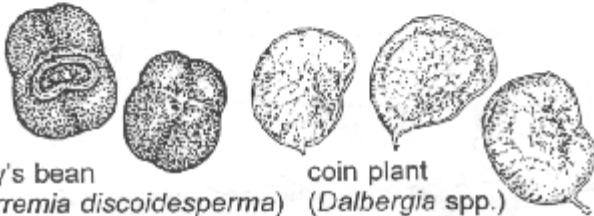
sea heart
 (*Entada gigas*)



golfball/pod
 (*Manicaria saccifera*)



hand grenade
 (*Sacoglottis amazonica*)



Mary's bean
 (*Merremia discoidesperma*)

coin plant
 (*Dalbergia* spp.)



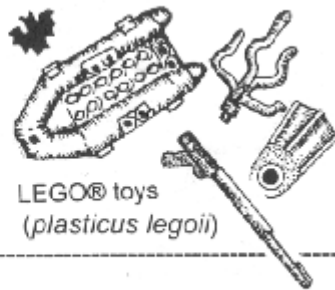
sea purse
 (*Dioclea reflexa*)



hog plum
 (*Spondias mombin*)



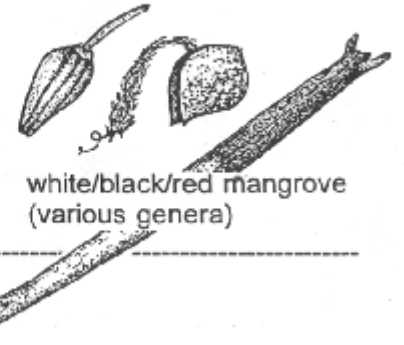
porcupine seed
 (*Caryocar microcarpum*)



LEGO® toys
 (*plasticus legoii*)



manchineel
 (*Hippomane mancinella*)



white/black/red mangrove
 (various genera)



The Drifting Seed

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