



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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Sixth Annual International Sea-Bean Symposium

Symposium 2001 schedule and travel information in this issue!

Friday and Saturday, October 5-6, 2001

(Thursday October 4 and Sunday October 7: set-up symposium, Drifter meetings, get-togethers, etc)

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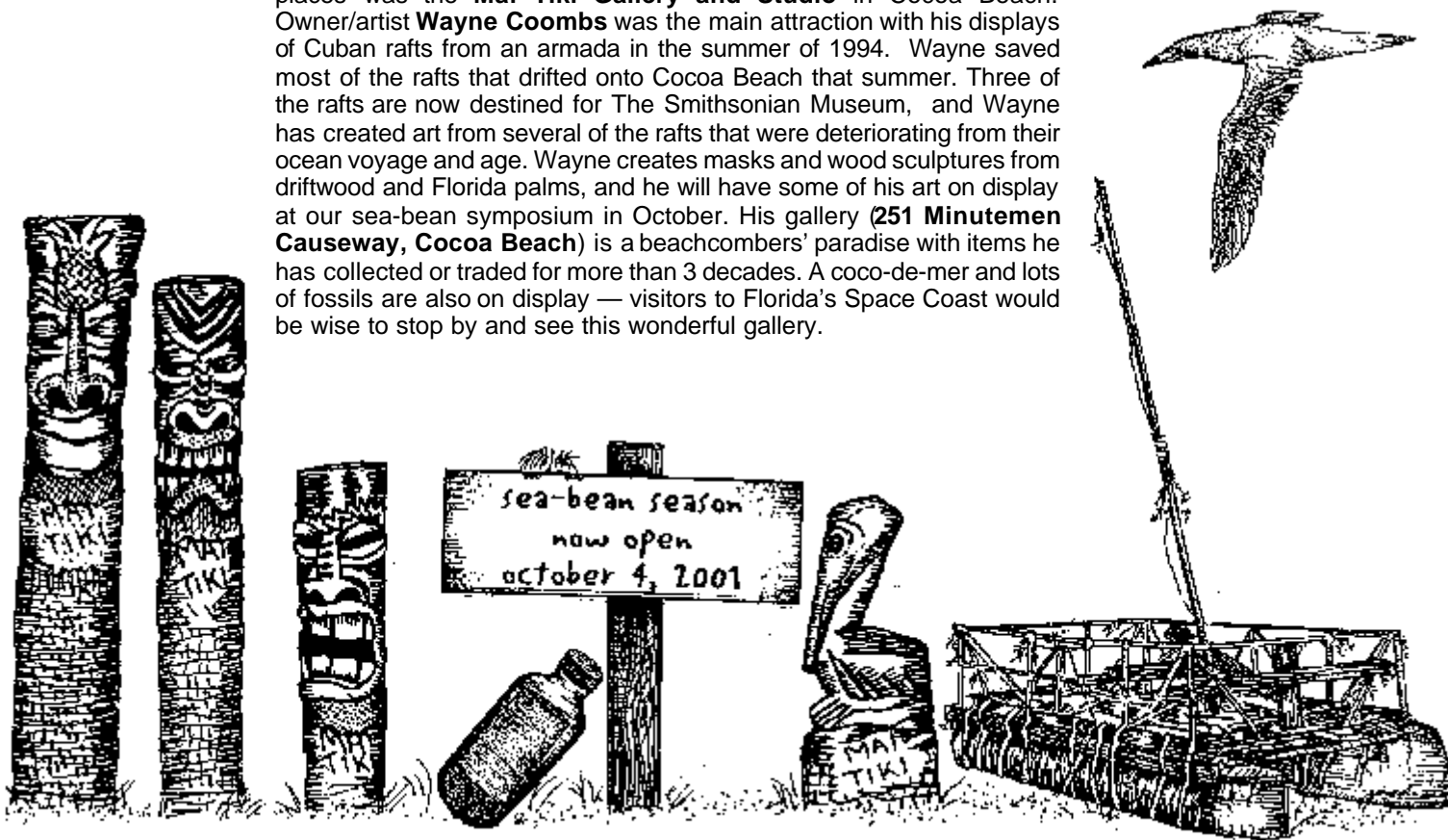
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FROM CATHIE

Sea-beans and The Drifters have been getting a lot of attention lately: The July 28, 2001 issue of *New Scientist* (a magazine published in London) included the article "Beach Nuts" about sea-beans and their travels. Our long-time Drifter **Dr. Charles Nelson** is featured in the story, and a mention of *The Little Book of Sea Beans and Other Beach Treasures* (Katz and Mikkelsen) and, of course, our newsletter *The Drifting Seed* appeared. (For more information about *New Scientist*, go to www.newscientist.com). During the same week, on July 27, The Drifters were mentioned in the Long Beach Island, New Jersey newspaper *The Beachcomber*. Then, in the July 28 edition of *Newhouse News* in Washington, DC, a comprehensive article about beachcombing appeared with information about our group and the upcoming symposium (see www.newhouse.com).

Washington reporter **Dru Sefton** and photographer **Carl Bower** from *Newhouse News* spent a weekend here in Florida with me, combing the beach and visiting interesting beach places. One of the most interesting places was the **Mai Tiki Gallery and Studio** in Cocoa Beach. Owner/artist **Wayne Coombs** was the main attraction with his displays of Cuban rafts from an armada in the summer of 1994. Wayne saved most of the rafts that drifted onto Cocoa Beach that summer. Three of the rafts are now destined for The Smithsonian Museum, and Wayne has created art from several of the rafts that were deteriorating from their ocean voyage and age. Wayne creates masks and wood sculptures from driftwood and Florida palms, and he will have some of his art on display at our sea-bean symposium in October. His gallery (**251 Minutemen Causeway, Cocoa Beach**) is a beachcombers' paradise with items he has collected or traded for more than 3 decades. A coco-de-mer and lots of fossils are also on display — visitors to Florida's Space Coast would be wise to stop by and see this wonderful gallery.



Our Keynote speaker at this year's symposium will be nature writer **Jack Rudloe**, author of many wonderful books about the biology of the shore and ocean. I became a devoted fan of his work when I read *The Sea Brings Forth* ((1968), and have continued to admire his work through all the books that followed: *The Erotic Ocean* (1971), *The Living Dock at Panacea* (1977), *Time of the Turtle* (1979), *The Wilderness Coast* (1988), and *Search for the Great Turtle Mother* (1995). We will have a limited number of Jack's books for sale at the symposium; his first four books are out of print but will be reprinted next year as a set of four. I went shopping on the internet's used book stores and bought about 8-10 of each of the out-of-print books. We will sell them at the symposium first come, first served (\$21.20 each). Otherwise, you're on your own to get copies of these wonderful books. Jack will be available to sign his books during the weekend of his presentation.

This year, also at the symposium, we're very pleased that Drifter **Curt Ebbesmeyer** from **Seattle, Washington**, ocean detective extraordinaire, will be with us. Curt's feature article in **Smithsonian Magazine's** July issue focused on ocean currents. Curt will give a presentation about the strange things floating in our ocean, and he'll have a display through the weekend with ship-spilled objects and other unusual items beachcombers have collected recently. Also, **Bob** and **Helle Patterson** from **Bermuda** will be with us again. Bob will have some of his treasures from Bermuda with him so we can compare coastal treasures. See you in October. Bring your sea-beans and beach treasures for the experts to identify.

A RICH COAST OF SEA-BEANS

by Ray Dickinson

Director, Cocoa Beach Public Library, Florida

[In mid May, Ray Dickinson went to Costa Rica for 10 days where he hiked over volcanic mountains to ride horseback on the Pacific side of Costa Rica on some of the most beautiful crescent-shaped beaches he had ever seen. When he described Playa Montezuma, Cabo Blanco Park, and some of the other beaches on the Pacific coast, I asked him to write about one particular adventure for our newsletter. The following story captures the spirit of his journey. - Cathie]

My equestrian skills seemed suddenly on a par with my inability to navigate the Spanish language and I found myself equally unable to communicate with my horse, Fortuna, and my guide, Carlos, as we rode along the wide flat beach at Playa Montezuma, Costa Rica, on the southern tip of the Nicoya Peninsula.

My horse seemed to have the mistaken impression that I wanted to madly gallop, whereas in truth I wanted him to turn slowly around so that I could better inspect what had appeared to be a 4-inch diameter sea heart lying in the sand. The horse wouldn't turn, however, and Carlos looked puzzled as I mouthed the word "sea-bean."

Fortunately, I was traveling with Loryn, my interpreter and spiritual guide. Loryn is a non-collector, having mastered the yogic art of non-attachment, and treats my sea-bean collecting (and hoarding) with semi-patient bemusement.

In short order, though, she managed to explain to Carlos about the sea heart and he gamely rode back, hopped off his steed, and retrieved it for me. Okay, it was only 3 inches in diameter, but still the largest sea heart I'd ever found.

It was a beautiful morning. The waves rose straight up, teal-colored, rose higher and higher and then stood on end, holding a long slow-motion pause at the top before curling over in a cacophonous collapse, white foam exploding in the morning sun. The beach— completely deserted — was backed by thick-jungled mountains with howler monkeys screaming from the trees. Out to sea, clouds on the distant horizon stood stock-still, as if painted there. Watercolor cumulus by Homer Winslow.

Carlos told us the beach stretched for more than 30 kilometers up the coast — not in one long stretch but in a series of crescent moon-shaped coves divided by rocky headlands. We rode the horses along the cove beaches and followed narrow jungle trails around the volcanic points. The trails climbed steeply through magnificent rainforest — palms and ferns and towering hardwoods with thigh-thick vines clinging to them and climbing Tarzan-like into the green canopy 300 feet above.

Jungle birds called from everywhere — a hundred songs at once. Somehow not competing but complementing one another in some random, cosmic order that transcended understanding. The jungle bird philharmonic.

A lot of sea-beans were scattered across the sand beaches. There were coconuts and hundreds upon hundreds of sea almonds, which had fallen off the trees in the nearby jungle, the almonds in all phases from smooth green pod to hard light-brown nut. And there was a bonanza of manchineel seeds and an ample scattering of starnuts. Less common were the black, round, marble-sized *Oxyrhynchus* and the dark, coarse Jamaican naval spurge.



Near the mouth of a small muddy stream were 15 or so mysterious seeds. They were light brown, wide at the bottom with pointed tops, and had grooves running along their entire length. They were a variety of sizes, with the largest about 4 inches long and 2 inches wide. Most were quite fleshy and had begun to sprout. (continued on next page)

Illustrations above are by Pamela J. Paradine in *World Guide to Tropical Drift Seeds and Fruits* by Charles R. Gunn and John V. Dennis, Sr.

A RICH COAST OF SEA-BEANS by Ray Dickinson (continued)

I'd never seen anything like them and only identified them after returning home and researching in the Gunn/Dennis *World Guide to Tropical Drift Seeds and Fruits*. The beans were identified in the book as coming from the "*pelliciera rhizophorae*" tree, which is found in tropical mangrove swamps. I phoned local bean expert Cathie Katz to see if they had a common name, but her research couldn't produce one. I told Cathie the beans looked vaguely like heads having a bad hair-day — or permanent cowlicks. So Cathie declared them "cowlick beans."

Despite all the other bean treasures on the beach, I'd found just the one sea heart. And no hamburgers.

Carlos, though, was getting into it. He spoke excitedly— through my interpreter — of a bean he called *ojo del toro*, or eye of the bull. I had never heard of it, but Carlos said it was beautiful. His favorite. And after a quick survey of the jungle, he rode his horse through thick undergrowth and stopped under a tree. Standing on his horse's saddle, he used a stick to strike at a seedpod on a climbing vine. A minute later he rode back and dropped two beans into my hand.

"Hamburgers," I exclaimed. They were fat, almost round, and chocolate brown with a wide, dark band that looked as if you could unpeel it. Beautiful. Fresh from the pod. Non-drifting drift seeds.

"Ojo del toro," Carlos said.

"We call them hamburgers," I told him. I held one up, pretended to bite into it.

"Hamburguesa," Carlos said, smiling.

"Carne del toro," I said.

We laughed and then sat there awhile on our horses, the three of us doing nothing, not speaking, perhaps not wanting to disturb the bit of magic that had just occurred. There was a perfection in all that morning sky, in the beach and waves, in the light holding in the clouds out to sea. And it was enough suddenly to just be — to breathe easy and let the moments unfold one by one in a subtle parade of Nows.

Good Luck Beans



Photo by Ed Perry ©2001

While vacationing on the Space Coast in Florida, **Rosalee Hutchinson**, 15, and **Kim Haas**, 16, from **Allentown, Pennsylvania**, were sea-beaning in August, one of the worst months in Florida for sea-beans. As they were walking, they met a tourist looking through seaweed. Kim asked, "Are you looking for sea-beans?" The lady didn't know what sea-beans were, so, with the goodwill that beaners are known for, Kim and Rosalee explained what they were and that they brought good luck. When the lady said she was celebrating her 40th anniversary with her husband, Kim handed her a sea heart and said, "Here, you can have this for good luck." This was a generous offer since it was Kim's only sea heart. It was worth giving up, Kim explained later, because the lady was so grateful that she hugged both girls and said "This is an awesome present! Bless you!" A minute later, turning over the next dried clump of seaweed, Rosalee found a hamburger bean — the first one found all summer in Melbourne Beach!

DON'T PUT ALL YOUR BEANS IN ONE BASKET

by Pete Zies

Cathie's question about why sea-beans drift such long distances has sparked a healthy dialogue amongst our beachcombing circle. Blair Witherington has posited one explanation, but just as there are scores of different types of drift seeds, so there are a variety of answers to Cathie's questions.

Many beachcombers are most fond of the hard, shiny "keeper" sea-beans, such as the Sea Heart, the Mary's Bean, the Sea Purse, and the Hamburger Bean. All of these seeds come from jungle vines, and it appears that science has discerned a method to the madness of their "wasteful" dispersal of seeds to far flung corners of the globe. First, we must understand the parent plants. In the *Biology of Vines* we are told that "despite being popularly conceived of as typical of second growth areas, lianas are extremely prone to reproduction by vegetative means rather than seeds (Peñalosa, 1984; Putz, 1984), and are often longer-lived than trees." (at p. 415) They go on to theorize that "perhaps individual lianas are, in a sense, able to span evolutionary time" (Whitham & Slobodkin, 1981). Thus their pollination and dispersal systems may be almost redundant in ecological time" (at p.416).

Plainly stated, once a seed grows into a vine, it grows so rapidly, and covers so much area, that even if parts of it die or are destroyed, its remaining parts keep growing, and it is rare for the entire vine to be killed completely. Then conclude "One might expect that such long-lived organisms, which need to replace themselves only once over many hundreds of years, might be an extreme case of K-selection, even more than canopy trees, with breeding systems emphasizing long-term flexibility over immediate fitness" (at p. 416). To demystify the botanical term "K-selection," we turn to Forsyth & Miyata's 1984 work, *Tropical Nature*, where they explain that "The large-seeded species are sometimes said to be 'K-strategists,' which is ecological jargon indicating that they are adapted for survival and reproduction in an environment where population levels are consistently near the capacity of the habitat. Competition for limited resources may be intense for these species, and it may be difficult for them to grow to maturity. The small-seeded fruits are typical of trees characteristic of early stages of successional change and are known as 'r-strategists' for their high fecundity and growth rate. These species do not face intense competition for limited resources, but there is a high premium on rapid colonization of virgin resources" (at p. 82-83). Applying this to our sea-beans, we can see that their home habitats in the jungle are drenched in vines, and it makes sense for the seeds to either wait for an opening at home, or look somewhere else for a spot to grow.

To be able to exercise either of these options, the seeds need to be specially equipped. They need to contain a food reserve large enough to allow quick growth when an opportunity presents itself. Small seeds with little food reserves would not be able to make the jump from seedling to climber in the deep shade of the forest floor. This food reserve is combined with the extremely durable and water-tight seed coat which allows our sea-beans to retain their viability for years on end, making them perfect opportunists, ready for wherever they may find themselves. Forsyth and Miyata remind us that "under competitive conditions, a few large seeds are worth more than many small, uncompetitive seeds" (at p. 82).

Understanding this about our seeds, we go back to the *Biology of Vines*, where they summarize that "to an even greater degree than trees, lianas can afford to be relatively profligate in release of genetic variability, since they can achieve reproductive success even when replacing themselves only once over many hundreds of years. The individual long-lived plants must be adapted to tolerate short-term environmental change (in the case of lianas often by vegetative regeneration after a host tree falls), while their sexual reproduction serves to adapt them to relatively far distant future changes, at a time-scale exceeding that generally associated with ecological time" (at p. 416). Translating this into plain English, the parent plant isn't really worried about creating the next generation of vines because it is virtually a mathematical certainty it will take place. Take the total number of seeds the vine produces each year, multiply that by the number of years the vine will produce seed, and then remember that only one seed needs to grow to maturity for the vine to have succeeded. What purpose do the rest of those seeds serve then? They are an insurance policy. Most of them will land in inhospitable places, but if even a few, over hundreds of years, land in climates that can support them, then the parent plant has protected itself if something goes terribly wrong at home.

Just like the old adage "Don't put all your eggs in one basket," it is dangerous, from an ecological point of view, to ignore the possibility of unexpected change because the one constant in life is change. The vines certainly have done well in the jungles for millennia, but a climate shift, a meteor strike, a catastrophic fire, or even humans could so impact the original habitat of the vine as to make it inhospitable. With the original plant destroyed, the biological burden would fall on its far-flung seed progeny to grow as strangers in strange lands and preserve their botanical uniqueness.

DON'T PUT ALL YOUR BEANS IN ONE BASKET by Pete Zies (continued)

That seed is on our beach “just in case.” It isn’t a question of “ancestral grounds” or “ancient memories.” The seeds don’t focus on the past, but rather look to the future. There, I believe, lies the attraction. We see the fortitude of the tiny traveler and admire it. We see its unlimited potential and are enthralled by it. These seeds represent biological optimism at its finest, and many of us connect with that, because we are optimists, and have an abiding faith in Nature. As Thoreau once said “Though I do not believe that a plant will spring up where no seed has been, I have great faith in a seed. Convince me that you have a seed there, and I am prepared to expect wonders!” With that in mind, who wouldn’t pick up a miracle and put it in their pocket?

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Unrelated News from Texas



In May, **Cathy Yow** from **Galveston, Texas**, described (in words and pictures) the huge mats of sargassum weed that literally covered the streets in her town (see above). Other reports from **Sam and Mike Burnett** in **Texas**, confirmed the unusual ocean activity, and described the coastal hazards from flooding, not only in Texas but other parts of the world. Photo to the right was submitted by the Burnetts.

THE LUCKY BEAN
by John V. Dennis, Sr.
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Sea dispersal by Members of the Genus *Opuntia*, Family Cactacea



According to H.N. Ridley, in his book *Dispersal of Plants Throughout the World* (1930), several of the *Opuntias* [cacti] are dispersed by the sea. Citing "Plant Ecology of Porto Rico," New York Academy of Science, vii, he writes, "Occasional small mats exist (on the seashore) of *Opuntia dillenii* and *O. repens*. They are derived from joints washed down by waves from the thickets above and left stranded on the upper beach."

Under suitable conditions both leaves and joints of the *Opuntias* take root and grow. The plants are able to withstand occasional drenching by sea water. Although Ridley does not say anything about long distance dispersal of *Opuntia* by ocean currents, there is both indirect and direct evidence that this does occur.

Indirect evidence comes from the presence of members on islands surrounded by saltwater. Mention has already been made of Puerto Rico. C.D. Adams, in his book *Flowering Plants of Jamaica* (1972) lists five species found on the island. N.L. Britton, in his *Flora of Bermuda* (1965), lists five species on the island (one of them probably listed erroneously).

Since the fruits of the *Opuntias* are edible and known as tuna, it is reasonable to believe that birds play a role in the dispersal of the plants. However, it seems unlikely that birds would carry the seeds in their digestive systems as far as Bermuda which lies about 568 nautical miles off Cape Hatteras, the nearest land.

More direct evidence of sea dispersal is found in parts of plants taking root on beaches or on dunes behind beaches. The writer has seen this on beaches in Florida and Virginia and behind beaches in Delaware. For example, on Fisherman's Island, a short distance off the Eastern Shore of Virginia Coast, he saw a washed-in leaf and stalk take root and later turn into a sizable plant. Since no plants grew on the island, the source of this plant must have been well outside the perimeter of the island.

At Rehoboth Beach in Delaware he saw a number of individual plants and a large mat of plants growing in sandy soil well behind the beach. (continued on next page)

THE LUCKY BEAN by John V. Dennis, Sr. (continued)

Six species are found in Florida but from Virginia northward only the prickly pear cactus (*Opuntia compressa*) is found. The northernmost limit of this plant is Cape Cod in Massachusetts. The plants also grow on the Island of Nantucket which lies to the south of Cape Cod.

In a flotation test, similar to those conducted with drift seeds, leaves of *Opuntia* plants disintegrated and sank after about three months. Therefore sea journeys by leaves are relatively short. Plants on Bermuda may owe their presence to humans rather than from drifting.

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[The following paragraphs were extracted from a letter that Ed Perry sent to John Dennis.
Both photos were submitted by Ed Perry for this article.]

At certain times, I have found dozens of pieces [of the prickly pear cactus] that have been moved around on the beaches by storm tides and high seas. Some of these do take root and grow, evidence of the many stunted plants that can be found growing amongst the sea oats and other dune vegetation. Our dune systems really parallel and compare with deserts in many ways, i.e., lack of fresh water, desiccating heat, and nutrient-poor soils; even most of their inhabitants are nocturnal. We have many small cacti growing amongst the dunes of Sebastian Inlet State Park (Melbourne Beach, Florida) especially in areas of dune accretion like on the north side of the inlet (vs. areas of dune erosion).

You may be interested to know that there is a moth and caterpillar that have recently plagued *Opuntia* here in Florida. It had traveled up the state from parts south, and it decimates the fleshy plants. Central Florida is about the northern range for it to come, as I think the cold freezes out the moth much north of here. Its scientific name is a very apropos *Cactoblastus cactorum*. -Ed Perry



ED'S BEACH BYTES

Sausage Tree Fruits

By Ed Perry

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In September of 2000 when I found my first sausage tree fruit, *Kigelia pinnata* (Bignonia family), on a Brevard County beach, I had no idea how rare of a find it was. Cathie Katz had found one the previous February during a beachwalk along Fort Pierce, Florida, so it really hadn't struck me as that unusual of a find. As with many of my "first" finds, the path of discovery about this species had only just begun. Within the next year, I learned of this plant's interesting biology, and even witnessed and photographed some fruit bearing trees on a trip to south Florida.

My first of two records was found along a beach near Patrick Air Force Base in the heart of Brevard County, Florida. The fruit first reminded me of a shriveled-up papaya fruit, *Carica papaya*. The season before this, we had found many papaya seeds along Florida beaches, and some beachcombers had even found the fruits. These finds were most attributable to the local passing of Hurricane Irene, which heavily eroded the barrier island lagoon shores along the east coast. This sausage was the smaller of the two finds, 9 cm long by 8 cm wide, and appeared to have been desiccated before it began its floating journey.

It was only upon finding the second fruit in October, a day before the 5th Annual Sea-Bean Symposium, that I even realized I had stumbled upon a sausage fruit, and also being what I had found a month earlier and incorrectly identified as a shriveled papaya. This second record I found on the beaches of Sebastian Inlet State Park. It was much larger, 36 cm long and 10 cm wide, and it displayed a similar mottled skin that my earlier find also exhibited. The tender skin apparently becomes torn and rashed as the fruit rolls in heavy surf. This fruit was heavy, fleshy in texture, and damp. It had the give of a very firm sponge and remained this way for several months after bringing it home from the beach.



Researching documentation of other drift specimens of this species proved nearly futile until Pete Zies remembered seeing it in the first issue of *The Drifting Seed* (May 1995).

A single record of a sausage fruit appeared in the "News and Notes" page of the first issue of this newsletter (1:1, May 1995). Dan Pittillo, editor of *Chinquapin* (the newsletter of the Southern Appalachian Botanical Society) 3(1):2, 1995, wrote that he had found a fruit of the sausage tree in December of 1994 while visiting at the north end of DeSoto National Memorial in Bradenton, Florida. Bob Gunn was duly interested in this news because it was the first record of this species drifting to any temperate beach.

Queries to Bob Gunn, John Dennis, and Pete Zies proved that the finds Cathie and I had made on the east coast of Florida were perhaps the first to be documented. No other records existed in any other collections, which makes the find by Dan Pittillo on the west coast of Florida even more interesting. The west coast receives far less abundance in the form of drift material than the east coast.

The sausage tree is a native to tropical West Africa, but has been planted by humans in many tropical and sub-tropical parts of the world due largely to its interest as a garden novelty. During a visit last year to West Palm, Florida, I was able to witness several fruiting trees growing in the vicinity of Worth Avenue. Pete Zies saw them growing at the Miami Metro Zoo, and he brought a fresh fruit specimen to give to me knowing of my recent interest in them. He picked the fruit and disguised it in a blanket and children's clothes as he pushed it around the zoo in none-other-than a baby stroller! My new child weighs about 8lbs. and is featured in the group shot of fruits in this column—the largest of the three fruits that are pictured.

The maximum flotation of these fruits has yet to be tested. It is likely that the existing stranding records for temperate Florida originated from south Florida locales. (continued on next page)

Sausage Tree Fruits By Ed Perry (continued)



Fruits that are found on the beach in a still fleshy condition should be dried thoroughly for several months before being added into a permanent form of storage. They will shrink in size and weight and become similar to a loofa sponge upon complete dessication.

The interest of *Kigelia* fruits in drift extends to the natural history of the parent tree. Winston Williams in *Florida's Fabulous Trees* (1986) describes it as an "amazing tree [that] produces a sausage shaped fruit which is woody and inedible." He goes on to say that "the long sausages are produced by flowers that have been cross-pollinated and the short sausages from self-pollinated flowers."

The flowers themselves are fascinating as well. Only opening after dark, by midnight or so they have fallen to the ground, having completed their reproductive functions. The cluster of flowers resemble a chandelier which hang from a stem that may be from a few feet to as long as 25 feet.

Only a portion of the buds in the cluster open in any one night. In its native Africa, the flowers are pollinated by bats, and it is theorized that the long flower stems help the bats by keeping the flowers away from the thick leaves of the canopy which might confuse the bats' sonar. In Florida these trees are usually pollinated by insects rather than bats. The similarities between this species and some of the *Mucuna* described in previous newsletters by Perry (1999) and Zies (1999) is nothing short of interesting. Many species of *Mucuna* have flowers that attract night flying bats with their form, color, scent, and dangling stalks.

Lanzara and Pizzetti in the *Simon & Schuster's Guide to Trees* (1977) state that the Latin name of this plant is derived from the name used in Mozambique. They go on to describe the tree has having a stout trunk and flowers with tubular corollas that are yellow at the base and red at the open lobes. Some African tribes are said to make a drink from the fruits, which are otherwise thought of as inedible.

In *A Guide to Tropical and Semitropical Flora* by Kuck & Tongg (1958) the common name of the tree is described as stemming from the fruits that suggest huge rolls of sausage (sometimes 2 feet long) as they dangle on long stems. I think of a locker filled with rope tethered meats. In this guide the flowers were described as a velvety, carrion-red and said to have a disagreeable smell.

With trees full of dangling sausages and the smell of carrion in the air, it seems that at least the common name of the sausage tree is well deserved.

Beachcombers should keep an eye out for these rather large and interesting fruits on tropical and sub-tropical, and occasionally temperate beaches worldwide.

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New Sea-Bean Lovers From Texas

Charlotte Bryant, Ph.D, Botanical Research Institute of Texas
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www.brit.org

The Botanical Research Institute of Texas is a non-profit organization located in Fort Worth, Texas. BRIT's mission is to "conserve our natural heritage by deepening our knowledge of the plant world and achieving public understanding of the value plants bring to life".

In addition to housing a collection of nearly one million pressed plant specimens from around the world and sponsoring research programs aimed at tropical conservation, BRIT has a wonderful education program for teachers, students, and the general public. One of these programs, Ecosystem Expeditions for Educators, is an annual trip to a unique ecosystem where teachers interact with scientists of various sorts to learn about research techniques and conservation and management issues.

This year BRIT took a group of 15 educators to Costa Rica for an exciting exploration of tropical systems. The group spent a day in San Juan, Costa Rica before departing to Cano Palma on the Caribbean coast for several days of insect collecting and netting for bats.

An unplanned activity became a centerpiece for the trip—combing the beach for little treasures. Initially a few of us looked for shells and sand dollars, but then one of us found an interesting object that was even more beautiful and intriguing. We all looked at the object with envy and decided to refer to it as a hamburger seed as we spread out and began looking for more. By the end of our walk we all had pockets and shirts full of an amazing collection of sea-beans! Since our trip, several of the teachers have explored the world of sea-beans through sea-bean websites and through the very generous help of Cathie Katz.

These teachers have developed wonderful activities to use in the classroom that combine oceanography, geography, plant biology, and tropical ecology. The activities will be made available on BRIT's website and will be incorporated into our Gulf Coast Ecology education manual.

Thanks to the information your organization provided to curious teachers, Fort Worth now has several new sea-bean enthusiasts and a new appreciation of the treasures to be found on a beach.



NEWS AND NOTES

└ **Curt Ebbesmeyer** from **Seattle, Washington** was featured in the July issue of Smithsonian magazine with a wonderful article about ocean currents and things that drift in the ocean — Curt's specialty. We're looking forward to seeing Curt at this year's Sea-Bean Symposium!

└ The stoned crabs below are two of the many fine specimens found by **Alice** and **Greg Lowe** of **Indian Harbor Beach, Florida** in March of this year. (The photos were taken by **Alice Surrency**.) **John Beerensson** from **Merritt Island, Florida** will be with us during this year's sea-bean symposium to provide additional information about these interesting fossils as well as fossilized sand dollars.



└ New Drifter **Wim Kruiswijk** wrote from **Zandvoort, Holland** that he found a sea heart and was able to identify it with the help of Gerhard Cadée. [Zandvoort is on the North Sea where Cathie Katz found her first sea heart.] He then found two black walnuts and a hamburger bean. Wim started a small beachcombers' museum in Zandvoort and was able to add drift seeds to his growing collection. Wim noticed in one of our previous newsletters **Birgit Korner's** story about the "exploding seed" which has since been identified by many of our readers as *Hura crepitans*. Wim wrote that he "... recognized it as a Sandybox (as named in Trinidad). In 1980 I stayed in Trinidad at the end of a 15-month trip through South America. Opposite my lodging was a tree with wonderful seeds with two shells to each seed of which local craftsmen made dolphins." Wim explained that he took 14 seeds home, but one day, while one of the fruits was on his window sill, it exploded — shells and seeds were all over. Another one, which he kept a dark box, also exploded. Wim included a story about "The Dolphin Tree":

In the tropical jungle grows a rare and unique tree ...the Dolphin tree. When the fruit ripens it explodes, casting the seeds in the distance and leaving the shells that protected them to fall on the ground. These shells bear a striking resemblance to the shape of a dolphin and — like the dolphin — remind us of that sense of Joy and Happiness which is the quintessential message dolphins bring to everyone of us in these troubled times ... a reminder — from nature herself — of the Joy and Happiness that lie hidden deep within our own hearts.

└ The following is an excerpt from a recent email from **Alan Rammer** in **Montesano, Washington**. Alan is a marine science educator with the Washington Dept of Fish and Wildlife. Alan provides some important information for sea-beaners traveling overseas:

"I was in Australia and New Zealand for one month but those few fleeting hours on the beach at Cape Tribulation will be fresh in my mind forever. I had spoken with Curt [Ebbesmeyer] before I left and he didn't think my chances of finding anything of interest were very good because of the currents in the area (no major rivers running into the Coral Sea), but he also left the possibility open that I may find 'treasures.' The lush growth of coconut trees and lianas ran right down to the beach, crocodiles were resting on the beach (with their jaws agape) where the streams empty into the sea, black-tipped reef sharks were cruising just beyond the little breakers, the glistening sands, banter of shorebirds, lapping waves on white sandy beaches and *all the sea beans stacked in the flotsam and jetsam* just inside the edge of the jungle were a dream come true! I also found sharks' eggs, cuttlefish back bones and all kinds of cool stuff for an adult with a "kid-at-heart" outlook on the world.

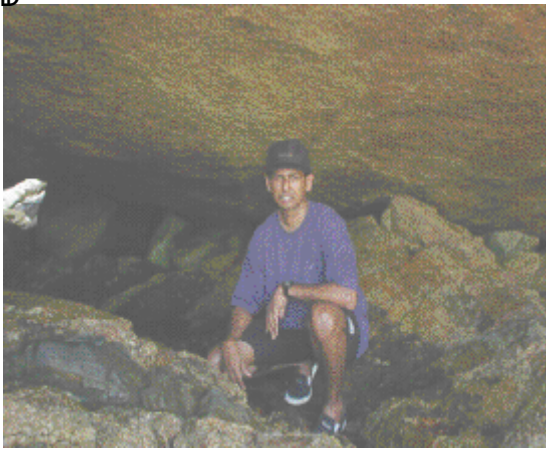
In short order I had my pockets stuffed! Since learning about sea beans only a year ago and this being my first time to really hunt for them, I was thrilled to see so many varieties. In fact it was only a week ago that I learned it was my
(continued on next page)

NEWS AND NOTES (continued)

pandanus seeds that customs in New Zealand took all of and none made it home. There were millions of red mangrove propagules all over the beach but I didn't take any of these. My biggest thrill was finding my first nickernut! (I found 8 in my 2-hour hunt of the drift line) Had a ball like a kid in a candy store too the whole time!

Our guide warned me that New Zealand was really tough in customs and that I might want to "strategically" place a few of my treasures in discrete locations in my suitcase. Since I am a marine science teacher I placed my business card in each Zip-Loc bag with my sea beans, shells, rocks, sand, cuttlefish bones and other goodies. We came through customs at 1 am from the reef (a long day of many flights) and my customs guy was nice but very firm with me. He told me I should have shipped my treasures from Australia home and even though I was not going to sell, trade or grow the sea beans he would not allow me to keep them. I asked him to fumigate them and charge me but he said no to this too. I told him that these same seeds must float up on their northern beaches and he said that was a different story if that happened. I asked him what the difference was and he said it was that I was hand-carrying them into the country away from the beach. So I learned to come home directly from Australia in the future — and I will go back! Also the customs form for New Zealand asks if you are carrying any seeds or nuts and the US one doesn't!"

D



Michael Manuel from **Kuala Lumpur, Malaysia** (shown above on his beach on the east coast of Malaysia along the South China Sea), generously donated part of his drift seed collection to the Gunn World Collection. The photo on the right shows some of the drift seeds that Michael has collected. Thank you Mike for your wonderful contribution from Malaysia.

└ In May we received a letter with two beautiful seeds (one polished, one in its natural state) from **Bob** and **Helle Patterson** in **Bermuda**. The highly polished seed looks like the kukui nut seeds (candlenut: *Aleurites molucca*) used on Hawaiian leis, but Bob's specimens are tung oil nuts (*Aleurites fordii*). "This is a close relative of the famed candlenut." The tung oil tree grows in the Botanical Gardens in Bermuda, so Bob states clearly that they are not true *drift* seeds and, "With the help of **Pete Zies** [Curator of the Gunn World Collection] and our **Museum Collections Officer, Lisa Greene**, I have now identified Jamaican Naval Spurge, *Trapa bispinosa*, Tropical Walnut, and Crabwood in my collection. Yesterday I found what I think is a water hickory — the excitement continues!. By the way, since getting the Ambergris authenticated, I have found two more pieces! Unless we have a hurricane this summer, I don't expect to do much beachcombing until about Oct/Nov. Our Dept of Agriculture sends out tractors with rakes to "tidy up" the beaches for our all-important visitors, destroying the tide-line in the process. This being so, I will now give you my totals for the year thus far: Sea hearts (*Entada*)-101; Golfball beans (*Manicaria*)-48; Tropical Almonds (*Terminalia*)-62; Nickars (*Caesalpinia*)-20; Hamburgers(*Mucuna*)-18; Sea Purses (*Dioclea*)-5; Coin Plant (*Dalbergia*)-1; Blister Pods (*Sacoglottis*)-1; Black Walnut (*Juglans nigra*)-1; Star Palms (*Astrocaryum*)-2; When you include Ambergris, Paper Nautilus, bottle message, spirula, Janthina, etc, it has been a very good year." We'll see the Pattersons at the symposium.

International Sea-Bean Symposium 2001

Cocoa Beach Public Library, 550 N. Brevard Avenue, Cocoa Beach, Florida 32931

OPEN TO THE PUBLIC OCTOBER 5 AND 6, 2001

Schedule of Events

Through the weekend: Sea-bean collections and displays, experts, sea-bean polishing, the famous Bean-O-Matic, seed jewelry from around the world, T-shirts, slide shows, books, authors, and contests (including the ever popular "ODD-BEAN Contest).

We are very pleased to announce that nationally acclaimed author Jack Rudloe will be our keynote speaker on Saturday night October 6. Jack is the author of many award winning books such as *The Sea Brings Forth*, *The Erotic Ocean*, *The Living Dock*, *Time of the Turtle*, *The Wilderness Coast*, and *Search for the Great Turtle Mother*. He is the founder and director of the Sea Life Museum and the Gulf Specimen Company in Panacea, Florida, conducting biological research using specimens he has been collecting for more than three decades. His company provides marine life to aquariums and medical research centers through the world. Jack will be available to discuss his work and sign books on Friday and Saturday.

Other natural history writers and their books will be available through the weekend: Dr. Charles E. Gunn from Brevard, North Carolina, co-author of the newly reprinted *World Guide to Tropical Drift Seeds and Fruits*; Cathy Yow from Galveston, Texas, author of *Jewelry from Nature*; Dr. Curtis Ebbesmeyer from Seattle, Washington, author of *Beachcombers Alert* newsletter and many articles in oceanographic publications, Cathie Katz from Melbourne Beach, Florida, author of the *Nature of Florida* series and *Nature a Day at a Time*, and Ed Perry, author of the soon-to-be-released book *Sea-Beans from the Tropics*.

Thursday October 4 (11 am to 6 pm)

11 to 6 pm: Show and Tell: Everyone is invited to gather in the main conference room at the Cocoa Beach Public Library for an informal get-together to introduce each other, discuss symposium plans, exchange sea-bean news, and set up displays for the weekend. We need lots of help setting up tables, chairs, and displays, so please feel free to donate your time and suggestions.

After 6 pm: Meet for dinner at Roberto's Little Havana Restaurant (½ mile south of the library at 26 N. Orlando Ave).

Friday October 5 (9 am to 5 pm)

Displays and collections open to the public all day 9 am to 5 pm.

Pete Zies will be available at The Bean-o-Matic to answer questions and explain Saturday's Bean-A-Thon.

11 to 11:45 am: Beginners' Beachwalking (slide show) by Sebastian Inlet Park Ranger Ed Perry.

3 to 3:45 pm: Sea-Bean Identification (slide show) by Sea-Bean expert Pete Zies, curator of the Gunn World Collection.

5 pm: Library closes; meet for dinner at Roberto's Little Havana Restaurant (½ mile south of the library at 26 N. Orlando Ave).

Saturday October 6 (8 am to 9 pm)

Displays and collections open to the public all day 9 am to 9 pm

8 to 10 am: 2001 BEAN-A-THON: Collect sea-beans and/or toys (listed in the rules) on any beach between Canaveral National Seashore and Sebastian Inlet. You must have your beans/toys at the library by 10:30.

Everyone who picks up a bag of trash from the beach will receive an Official 2001 Bean-A-Thon Certificate.

9 am: Library opens.

10:30 to noon: Judges will tally BEAN-A-THON entries at the library (awards at 7 pm tonight).

4 to 4:45 pm: "What's Drifting in our Oceans Now?" By Dr. Curtis Ebbesmeyer.

5 pm: Sea-Bean Jewelry Contest Judging (for entries submitted through the weekend).

5:30: Odd-Bean Contest Judging (for entries submitted through the weekend).

Dinner break

7 pm: BEAN-A-THON and contest awards and certificates presented. Raffle winners chosen.

7:45 to 8:45 pm: Keynote speaker: Jack Rudloe presents: **What does the Erotic Ocean Bring Forth?**

Sunday October 7

10 to noon: Take down displays; small business meeting to schedule dates for next year's symposium

TRAVEL and HOTEL INFORMATION for SYMPOSIUM 2001 in COCOA BEACH, FLORIDA

Cocoa Beach is about an hour drive from Orlando International Airport.
For symposium information call Sue Bradley at 1-877-OCEAN99 (toll free)
For Sea-Aire Motel information/directions, call 1-800-319-9637 (toll free)

The Sea-Aire Motel has offered again to host The Drifters for the 2001 Sea-Bean Symposium with a generous discount for the weekend. Room rates vary between \$50 and \$70. For those planning to stay longer, weekly rates are also available at a discount.

The Sea-Aire Motel is directly on the ocean and less than ½ mile from the Cocoa Beach Public Library

SEA-AIRE MOTEL 1-800-319-9637
181 N. Atlantic Avenue, Cocoa Beach, FL 32931



Sea-Bean T-Shirt for 2001

100% cotton shirt

\$17. (S, M, L, XL) \$20. (XX large and XXX large)

(Tax is included, but add \$2. per item to cover mailing costs. Overseas add \$6. per item.)

If anyone would like to reserve a specific T-shirt size (or would like one by mail), please write or call **Sue Bradley** (before Sept. 10) to let Sue know what sizes and how many shirts you'd like.

Make checks payable to Atlantic Press, Inc.

Atlantic Press, Inc.

PO Box 510366

Melbourne Beach, FL 32951

321-723-5888

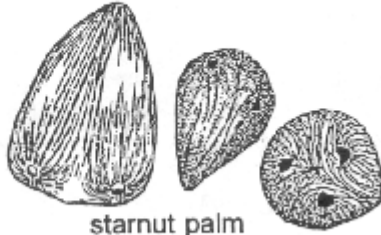
Suedonbradley@aol.com

Because so many of you ask "Can I grow a sea-bean?" this year's T-shirt shows a sprouted hamburger bean.

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



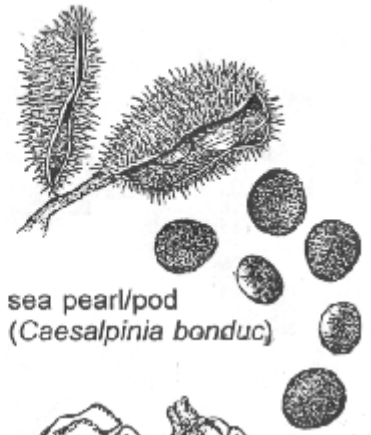
hamburger bean
 (*Mucuna* spp.)



starnut palm
 (*Astrocaryum* spp.)



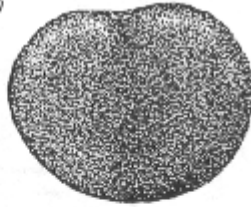
country almond
 (*Terminalia catappa*)



sea pearl/pod
 (*Caesalpinia bonduc*)



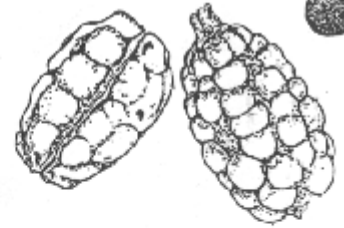
bay bean/pod
 (*Canavalia rosea*)



sea heart
 (*Entada gigas*)



golfball/pod
 (*Manicaria saccifera*)



hand grenade
 (*Sacoglottis amazonica*)



Mary's bean
 (*Merremia discoidesperma*)



coin plant
 (*Dalbergia* spp.)



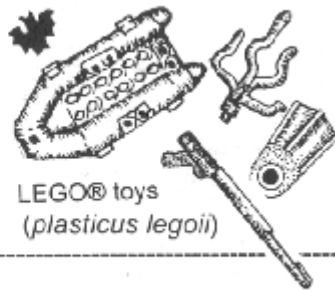
sea purse
 (*Dioclea reflexa*)



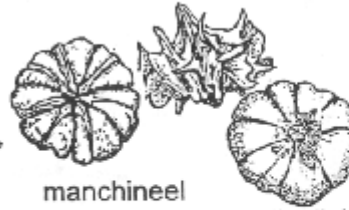
hog plum
 (*Spondias mombin*)



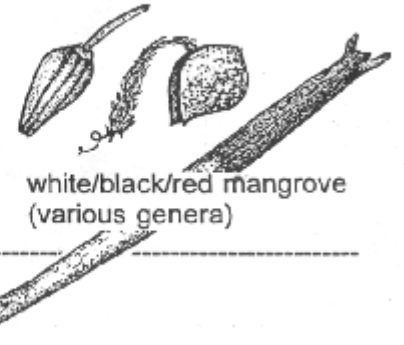
porcupine seed
 (*Caryocar microcarpum*)



LEGO® toys
 (*plasticus legoii*)



manchineel
 (*Hippomane mancinella*)



white/black/red mangrove
 (various genera)



The Drifting Seed

PO Box 510366
 Melbourne Beach, FL 32951

