

# The Drifting Seed

December 1, 2000

Vol. 6, No. 3

## THE DRIFTING SEED

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

Distributed to more than 20 countries.

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**Mark your calendars: Three sea-bean events in 2001:**

(see page 15 for details)

**January 19-21, 2001:** Space Coast Shell Show at Melbourne Auditorium, Florida

**July 7-11, 2001:** Conchologists of America Convention  
2001 Shell Odyssey at the Radisson Resort at Port Canaveral, Florida

**October 4-7, 2001:** Sixth Annual Int'l Sea-Bean Symposium, Cocoa Beach Public Library, Florida  
(open to the public October 5-6)

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Our humble sea-beans have truly received their long-overdue recognition. At this year's symposium, beachcombers seemed to crawl out of the driftwood with stories of exotics and rarities which, at one time, would have been difficult to identify. But our top-notch experts didn't hesitate for one second to identify the "fat little orange ball with ridge" (*Canavalia nitida*) or an ivory nut disguised as a golfball. However, most of us were fooled by a handful of imposter beans designed from clay by designer MariAnn Hannon of Juno Beach, Florida. They were authentic down to the nicks, fracture lines, and irregular shapes. Very impressive sea-bean art.

Our experts came armed with displays, books, samples, and literature...even *National Geographic* magazine (October 2000) came through with an article about ocean currents which included drift seeds. Pete Zies had a wonderful display describing his trip to Peru. His summary of the symposium (pages 3-5) captures our excitement when sea-beans finally drifted ashore just in time for the Bean-A-Thon.



During the weekend, dozens of raw chicken eggs washed onto shore with the fresh Sargasso weed. This unusual armada of eggs was discussed later that night during an impromptu panel discussion. Krieger Publishing representative Elaine Harland asked the most relevant question: "What kind of chicken laid the eggs — Chicken of the Sea?"

We sorely needed Curt Ebbesmeyer to unscramble this egg mystery and help identify many of the non-bean treasures found that weekend. We missed Curt tremendously, and look forward to his return next year.

John Beerensson provided a much needed explanation for the "stoned crabs" (fossil ghost crabs) we find on certain beaches on the Space Coast. In the next newsletter (May) we will include a condensed history of these 100,000-year old treasures. We're grateful to John for contributing this information.

Speaking of treasures, three replicas of coins from the Spanish ships that sank in 1715 were hidden in the sand in Cocoa Beach not far from the library. None of our Bean-A-Thoners found them... BUT, even better....Bill and Nancy Eastlake from Missouri found a *real* Spanish coin from one of the 18<sup>th</sup> century wrecks!

### 2001 Question: Something More to Sea-Beans?

One particular sea-bean question keeps coming up: Why does a sea-bean go through so much trouble traveling across an ocean to get to a beach where it doesn't (won't) necessarily grow, nor does it provide any significant nourishment for local animals?

We beachcombers know that sea-beans are gifts from the sea that bring good luck. We know the joy when we discover the first hamburger of the season or the rare Mary's-bean hidden in the wrack. But does Nature have something else in Her plan? Seems like a lot of effort goes in the creation of a sturdy and buoyant seed just to drift to a faraway beach and lie there so we can "ooh and ahhhh" over them.

Are they migrating? Are they hard-wired, like eels, to cross an ocean to their ancestral grounds? Are they driven, like sea-turtles, to return to their beach of origin? Are they guided by an internal compass from when South America was connected to West Africa? What ancient memories are embedded in our mysterious sea-beans?

Sea-beans evoke our passions. I never heard anyone exclaim, "Oh, what a beautiful coffee bean!" or "Whoa, what a great looking lima bean!" But I've received hundreds of emails, letters, and phone calls during the past six years about sea-beans ranging from "I thought I was alone in this addiction" to "I can't stop myself from looking for them." What is the attraction? What is it that lures us to the beach every possible chance we get? Are these questions related to the sea-bean's mysterious journey? Are some of us somehow *connected* to sea-beans?

It is my gut-level and illogical belief that one factor of evolution is *influence*. When the short-necked giraffe strained to reach the last available leaves at the top of the tree, he influenced his genes to accommodate his need. The next generation to survive came from those mutant longer-necked baby giraffes, but perhaps not from a random occurrence. With this thought, perhaps sea-beans have been influenced for a million years or so to find new territory ... by a power greater than we can imagine? They may have something we don't understand yet. What are your thoughts, Drifters? This is the question for 2001. Your comments will be included here through the year.

FROM BOB  
Book Review

**Nelson, E.C. 2000. Sea beans and nickar nuts.** Handbook Number 10. Botanical Society of the British Isles c/o Natural History Museum, Cromwell Road, London SW7 5BD England. 154 pp. ISBN 0-901158-29-1

From cover to cover this handbook is a pure joy to read. Charles has melded his 20-year hobby into a stellar, reader-friendly book. Introductory subjects include floating duration, North Atlantic currents, beach combing, viability and cultivation. Then follows the richly informative chapters on the history of drift seeds, Charles Darwin and drifting seeds, and folklore in Europe.

Most of the rest of the handbook is an illustrated and keyed catalog of drift disseminules that reach Europe from the New World. The key and catalog are brought to life by the excellent disseminule illustrations by Wendy Walsh with a few supplementary adult plant illustrations by Alma Hathway. The catalog covers 55 entries with these textual data: Disseminule category, source, frequency (for European beaches), viability and cultivation, mature plant, summary, and references. A bibliography, list of useful addresses, and a complete index conclude this handbook. This book is a must for your library. Congratulations and well done, Charles.

[To U.S. readers: Four signed copies of Charles Nelson's book are still available from Atlantic Press, Inc. PO Box 510366 Melbourne Beach, FL 32951 (\$32 including tax, shipping, and handling.)]

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2000 SYMPOSIUM REVIEW  
by Pete Zies



top from left: Mary Ann Bell, Pete Zies; next row: Mike McKenna (in hat), Deb Trachtman, Sue Bradley, Ruth Smith, Ed Perry, Mike Burnett, Cathy Yow (in hat), John Dennis, Betty Gunn, Pam Schrimsher, Bob Gunn, Joe Hartman; next row: Mike Stewart, Margie Mitchell, Cathie Katz, Patten, Mary, and Spaulding Basham, John Brolmann, Eleanor Hillman.

This year was our Sea Bean Symposium Sesquicentennial (5<sup>th</sup> annual meeting) and the beach made sure it was a memorable anniversary for all who attended. The beach conditions were just right, with strong winds, big waves, and tons of seaweed arriving on cue as if Cathie had conjured them up for us. Those who remember the heavy tar of a prior Symposium were happy to find the beaches tar-free this year.

Much to our much-missed member Curt Ebbesmeyer's dismay, garbage was quite abundant on the beach this year, and included numerous items from Cuba, the Bahamas, the Keys, and South America. This showed that our transport currents were definitely working properly. Curt also would have been intrigued by this year's beach mystery, which was dozens and dozens of intact chicken eggs washing up on the beach!

Our plan changed a bit this year, and we only were open to the public for two days; Friday and Saturday. Despite that we still had well over 500 visitors to the Symposium! Bob Gunn came back this year, and along with John V. Dennis, Sr., they both signed the reprint their World Guide. John Jr. also attended this year and let us in on what it was like growing up with a father whose job was looking for tar at the beach! Shown right are John Dennis and Bob Gunn on either side of Alice Lowe.



Ruth Smith also returned this year and put on her astounding display of world wide seed jewelry.

Ed Perry has become our Sea-Bean Green Thumb, and had several plants on display he had grown from sea-beans including Sea Hearts, Gray Nickernuts, Candle Nut, Brown Nickernut, and Hamburger Beans.

I resurrected the "Bean-O-Matic" Wheel, and I did a presentation on the Sea-Beans I'd collected in the Amazon River while visiting Peru this year. I was also happy to juxtapose two items for our visitors: the first being a 30-year old letter of rejection from *National Geographic* magazine saying that sea-beans were unsuitable for inclusion, and the second being the October 2000 issue of *National Geographic* which included photos and a discussion of our favorite seeds!

Sea-Bean jewelry was very popular this year. With Cathy Yow and Deb Trachtman presenting their own styles. Sea-Bean crafts also made a showing this Symposium with Alice Lowe showing her Sea-Bean tattoo and Sea-Bean Shadow boxes. Mike Stewart displayed his unusual sea-bean creations which got a lot of attention for their originality. Alice Surrency and Mary Ann Bell had their new "Sea Bean Stick" available to beaners who choose to poke through the wrack. Showing that necessity truly is the mother of invention, Alice and Mary Ann decided not to trust luck to find a stick to root through the seaweed, so they combined a shovel haft, a wriststrap, a rubber grip, and twin plastic-coated metal prongs to create a serious beachcombers tool. I tested one on the beach and it moved seaweed like a bulldozer!

In our efforts to help educate newcomers, several presentations were made, including Ed Perry's introductory beachcombing slide show, my sea-bean identification marathon, and Cathy Yow's talk about her first year living on the beach. We also had a panel discussion this year which included myself, Bob Gunn, John Dennis, Ed Perry, and Claudia Chaplow a guest speaker on Ivory Nut Palm seeds and their history. Among the many items discussed, the main concern was "where are the Keeper seeds?" It was pointed out that we had had several days of strong onshore winds at the right time of the year and that tons of seaweed had been pushed onshore, followed by lots of long distance trash, so why weren't our favorite seeds mixed in? Even the experts weren't sure, and had to make educated guesses on possible explanations.

The centerpiece of the Symposium was the Bean-A-Thon, and it went very well considering that the armada had evaded us. Conspicuously missing from our field of 35 competitors were Dave Williams and Rondall Owens, but to insure a good challenge, Ed Perry and I stepped into the fray. Even with Keepers scarce, a wide variety of seeds were still found. Ed led the pack with 37 species and won the Most Variety of Beans Award. I grumbled enough about my second place finish that Ed gave me a special consolation prize — a pacifier scavenged from the beach!

The Best Non-Bean Award went to Bill Eastlake from Missouri for the genuine "doubloon" found at Canaveral National Seashore! His find was especially surprising because before the contest three replicas were planted on the beach to be recovered for prizes. Imagine our surprise when none of them came back, but a real one did!



Equally exciting was 8-year old Hannah Fisch's find of a message in a green bottle! You should have seen the crowd of people bunched around the bottle as it was uncorked and the soggy message pulled out. Once the Spanish text was deciphered we heard about a man's prayer to the Virgin Mary for his family's well being in Cuba. This find netted her the Youth Award for a Notable beach treasure. (Hannah shown right.)



Margie Mitchell snagged a Special Contribution Award for the unique, weathered Conch Salad sign, encrusted with goose-neck barnacles she found on the beach. In a surprise twist, the Rare Bean award wasn't won by one of our experienced experts, but rather by 7-year old Ben Sunter who found not one, but two rare seeds, an *Oxyrhynchus* and a *Quisqualis*!

The Heartiest Sea Heart Award went to Ty Yadouda for his perfectly heart-shaped Sea Heart. Ed Perry won The Squarest Hamburger Bean Award for a remarkably square hamburger bean. Kate and Jim Johannsen won the Smallest Nickar Bean Award a tiny gray nickernut the size of a wood rose seed! Shown below are Kate and Jim receiving their Award with Kate holding the pea-sized nickar bean.

As has become our habit, old friendships were renewed, and new ones were begun. We enjoyed the company of the Fick Family from South Africa. Mike and Sam Burnett from Padre Island, Texas showed us the dozens of brown nickernuts found on their beaches, along with many other finds.



The Jewelry-Making Contest resulted in an array of beautifully crafted accessories, including an artistic piece by Kate Johannsen which took the Best of Show Award. Patton Basham's originality netted him the Most Creative Award and Spaulding Basham won the Award for the Youth Division. Honorable mention was awarded to Deb Trachtman for one of her exquisite necklaces.

Before the impromptu panel discussion Saturday night, Cathie presented Ray Dickinson with the well-deserved Special Beanoer of the Year Award for outstanding service.

Looking back, it seems that everything *but* Keeper Seeds were collected on the beach this symposium. To me, that is the ocean's way of reminding us that the beach isn't supposed to be exploited for personal gain, rather it should be experienced on its own terms, and we should be open to what it chooses to show us when we're there.

A quick executive meeting on Sunday resulted in the decision to hold next year's Symposium at the Cocoa Beach Library again, on October 4-7, 2001 (October 6 and 7 open to the public). Funding for The Drifting Seed newsletter is very low, and annual dues will now be \$10. Responsibility for next year's show has been divided into several segments, and anyone wishing to help is encouraged to contact Sue Bradley. All things considered, it was a very pleasant anniversary! See you all next year!

# A SMALL COLLECTION OF SEEDS FROM THE BEACH OF DJIBOUTI

Gerhard C. Cadée

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During short visits to Djibouti, NE Africa, on 6/7 January 1993, 9 March 1993, and 29 April 2000, I collected seeds on some beaches of Djibouti city. During such short visits no exhaustive collections can be made. However, as so little is written on drift seeds and fruits from coasts of this part of the world since Muir (1937), publication of this small list might be interesting. It was remarkable that a large part of the seeds found on the beach pertained to human waste, either from human consumption or from harbor activities. Only a small part of the seeds belong to true drifters, but all were presumably of local origin.

## The species found

All species that could be identified are given in alphabetical order in Table 1. The 4<sup>th</sup> column indicates whether the seeds were rare (1-5 found) or common (> 5). The last column gives their probable origin: local drift for fruits and seeds most probably derived from plants or trees growing along the coast (some of which I indeed observed), waste for all others.

The coconut *Cocos nucifera* is a well-known drift seed of all tropical beaches and the palm grows in Djibouti.

The few papaya seeds *Carica papaya* (see Figure 1 f.) I found have first puzzled me a long time, but Bernard Verdcourt (Kew Herbarium) immediately recognised them. Comparison with seeds in my reference collection showed that these were still covered with a membrane. After removing this membrane they appeared quite similar to the Djibouti seeds, albeit not eroded like these.

Some 10 endocarps of (?) *Elaeocarpus* were found (see Figure 1 d.), which I identified using Smith (1999). The black or grey, round, strongly sculptured seeds range in length from 6 to 11 mm. They are therefore smaller than *E. grandis* mentioned in Smith and they split in 3 not in 5 segments. They belong to a different species. The genus *Elaeocarpus* has about 200 species and of some the fleshy fruits surrounding the endocarp are eaten by man, e.g. those of *E. serratus* (Ceylon olives) according to Heywood (1978). So these seeds may belong to human waste. In that case the fruit must have been imported, as *Elaeocarpus* does not occur in Africa. This might also indicate that my identification is wrong, please provide a better suggestion!

Many Guava seeds (*Psidium guajava* see Figure 1 c.) were found, which I recognised from pictures given by Gaertner (1788, pl. 38). Comparison with seeds in the fruit and seed collection of Kew Herbarium confirmed this identification. The fruit is widely consumed and rich in vitamin C; guava is cultivated all over the world in warm areas. The seeds found obviously stem from human consumption.

Nuts of *Hyphaene* sp., the doum palm or vegetable-ivory palm, were common in drift. Muir (1937) mentions *H. crinita* (Gaertner) as very common in beach drift from the East coast of Africa and *H. thebaica* from the West coast. The fruits of *H. crinita* figured by Gaertner (1788: pl 10) look very similar to those of *H. thebaica* in Menninger (1977). They are the size and shape of a small orange, have a shiny brown skin that rapidly disappears: the fruits in drift show the fibrous layer underneath the skin. This peculiar palm tree, with its bifurcating stem is quite common in Djibouti, I observed it at various places in the city. The very hard kernel (endosperm) of the nuts was used as a replacement of ivory (hence 'vegetable ivory') e.g. for the manufacturing of buttons (Cadée, 1986). Most ivory-palm nuts do not float, but some may float because of internal cavities due to endosperm decay (Dennis, 1998) or incomplete development. The unripe kernel is edible, they are a common object in tombs in ancient Egypt (Menninger, 1977).

A few seeds of the beach morning glory, *Ipomoea pes-caprae*, were collected; it grows world-wide on tropical beaches and I observed the plant also growing in Djibouti.

Tropical almonds *Terminalia catappa* were quite common in drift on the beaches, they originate apparently from local trees, which I observed growing along the beach. It is a well-known tropical drift seed of the old world; originally from the Malaysian area, the tree has been spread by man throughout the tropics (Gunn & Dennis, 1976).

A few fruits of *Tribulus terrestris* (caltrop)(see Figure 1 a.) were found; the plant I found growing in the harbor area. I didn't know this seed, but could identify it using a nice picture I found by accident in Weiner (1995: p. 61). *Tribulus* seeds are enclosed in strong-armored spiny fruits, which only those Darwin finches that have the strongest bills can open on the Galapagos Islands. Grant (1981) suggests an "arms race" between the finches developing stronger beaks and *Tribulus* developing stronger spines and a thicker outer wall.

*Thevetia peruviana* is a small tree originating from the West Indies and Central America, but now used pantropically as a decorative shrub; it produces yellow fruits containing a single somewhat triangular seed (Menninger, 1977). The occurrence of some seeds of this species on the beach seems remarkable as they normally do not float. However, one of the seeds I collected in Djibouti under a tree did float for some days. Already Darwin (1959, p. 359) observed that fresh hazelnuts (*Corylus avellanus*) did not float, but after drying they floated for 90 days (and remained viable), this may hold as well for *Thevetia*.

The numerous small black disc-shaped seeds of *Chenopodium* must stem from local near coastal vegetation. This is probably also the case for a number of seeds I could not yet identify. One belongs to a leguminose of which the pods apparently easily fall apart in segments with each one seed (see Figure 1 e). Bernard Verdcourt and Gwilym Lewis (Kew Herbarium) recognised this as *Mimosa* sp.; identification to the species level is probably not possible.

All the other seeds found (see Table 1) I regard as waste from human consumption (Djibouti has 250,000 inhabitants), or to stem from losses during transshipping in the harbor area. Djibouti is a main import harbor for food for famine-stricken Eritrea and Ethiopia. The collected wheat is probably the best example. Wheat grains normally do not float, but all those found in the drift were empty seeds, the inside consumed by larvae probably of the small weevil *Calandra*.

### Discussion

Such well-known tropical drift seeds as *Entada*, *Mucuna*, *Cerbera*, *Calophyllum* were lacking. This is probably partly due to the sheltered position of Djibouti city and harbor, at the end of the Gulf of Aden; partly to the sea surface currents in this area. The current system in the NW section of the Indian Ocean is strongly influenced by monsoons. During the NE monsoon (October to May) the current in the Gulf of Aden is from East to West. During the rest of the year (June to September) a strong SW monsoon causes surface currents to change 180 degrees in direction (Anonymous, 1987, see Figure. 2). Import of tropical drift seeds will be possible only during the NE monsoon. The change in current direction will make input of tropical drift from the Indian Ocean difficult.

In conclusion, this seed collection will hardly tempt other drift seed collectors to set out for Djibouti, because real tropical drift seeds are not numerous. Remarkable was the large number of small seeds e.g. of *Chenopodium*. This collection indicates the important role of human waste in the drift fruits and seeds of Djibouti. In this respect it was quite different from the drift I collected on the Seychelles (Cadée in prep.), but e.g. on the Dutch coast human waste also adds considerably to the seeds found there: Kuijper (1982) observed some 40% of the seeds in bulk samples from the Dutch North Sea coast near Katwijk to belong to fruit eaten by man including figs, raspberries, strawberries and grapes. My own unpublished data for Texel point to lower percentages, but also here a long list can be made of seeds from human waste. A good example was the recent mass stranding of *Ricinus* seeds on Texel (Cadée, 2000).

Acknowledgements: I am very grateful for help from Bernard Verdcourt and Gwilym Lewis (both Kew Herbarium) and Xander van der Burgt (Wageningen Herbarium) with identification of some seeds and to NWO for the opportunity to visit Djibouti.

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Species	Family	Common Name	c/r	Probable Origin
<i>Arachis hypogaea</i> L.	Leguminosae	peanut	r	waste
<i>Capsicum longum</i> Sendt.	Solanaceae	pepper	c	waste
<i>Carica papaya</i>	Caricaceae	papaya	r	waste
<i>Chenopodium</i> sp.	Chenopodiaceae	goosefoot	c	local drift
<i>Citrullus vulgaris</i> Schrad.	Cucurbitaceae	watermelon	c	waste
<i>Citrus aurantium</i> L.	Rutaceae	orange	c	waste
<i>Citrus limon</i> Burm.	Rutaceae	lemon	c	waste
<i>Cocos nucifera</i> L.	Palmae	coconut	c	local drift
<i>Coffea arabica</i> L.	Rubiaceae	Coffee-bean	r	waste
<i>Coriandrum sativum</i> L.	Umbelliferae	Coriander	r	waste
<i>Cucurbita pepo</i> L.	Cucurbitaceae	pumpkin	r	waste
<i>Cucumis melo</i> L.	Cucurbitaceae	cucumber	c	waste
(?) <i>Elaeocarpus</i> sp.	Elaeocarpaceae	—	c	local drift?
<i>Hyphaene</i> sp.	Palmae	ivory nut	c	local drift
<i>Ipomoea pes-caprae</i> (L.)	Convolvulaceae	beach morning glory	r	local drift
<i>Olea europea</i> L.	Oleaceae	olive	r	waste
<i>Mimosa</i> sp.	Leguminosae	mimosa	c	local drift
<i>Persica vulgaris</i> L.	Rosaceae	peach	r	waste
<i>Phoenix dactylifera</i> L.	Palmae	date	c	waste
<i>Pistacia vera</i> L.	Anacardiaceae	pistache-nut.	c	waste
<i>Prunus avium</i> L.	Rosaceae	cherry	r	waste
<i>Prunus domestica</i> L.	Rosaceae	plum	c	waste
<i>Psidium guajava</i> L.	Myrtaceae	guava	c	waste
<i>Rubus</i> sp.	Rosaceae	blackberry	r	waste
<i>Solanum lycopersicum</i> L.	Solanaceae	tomato	c	waste
<i>Terminalia catappa</i> L.	Combretiaceae	tropical almond	c	local drift
<i>Thevetia peruviana</i> (Pers.)	Apocynaceae	lucky nut	r	local drift
<i>Tribulus terrestris</i> L.	Zygophyllaceae	maltese cross, caltrop	r	local drift
<i>Triticum aestivum</i> L.	Graminae	wheat	c	waste
<i>Vitis vinifera</i> L.	Vitaceae	grape	c	waste

Table 1. All identified seeds from the Djibouti beaches with family, common name, abundance (common or rare), and probable origin (local origin or waste).



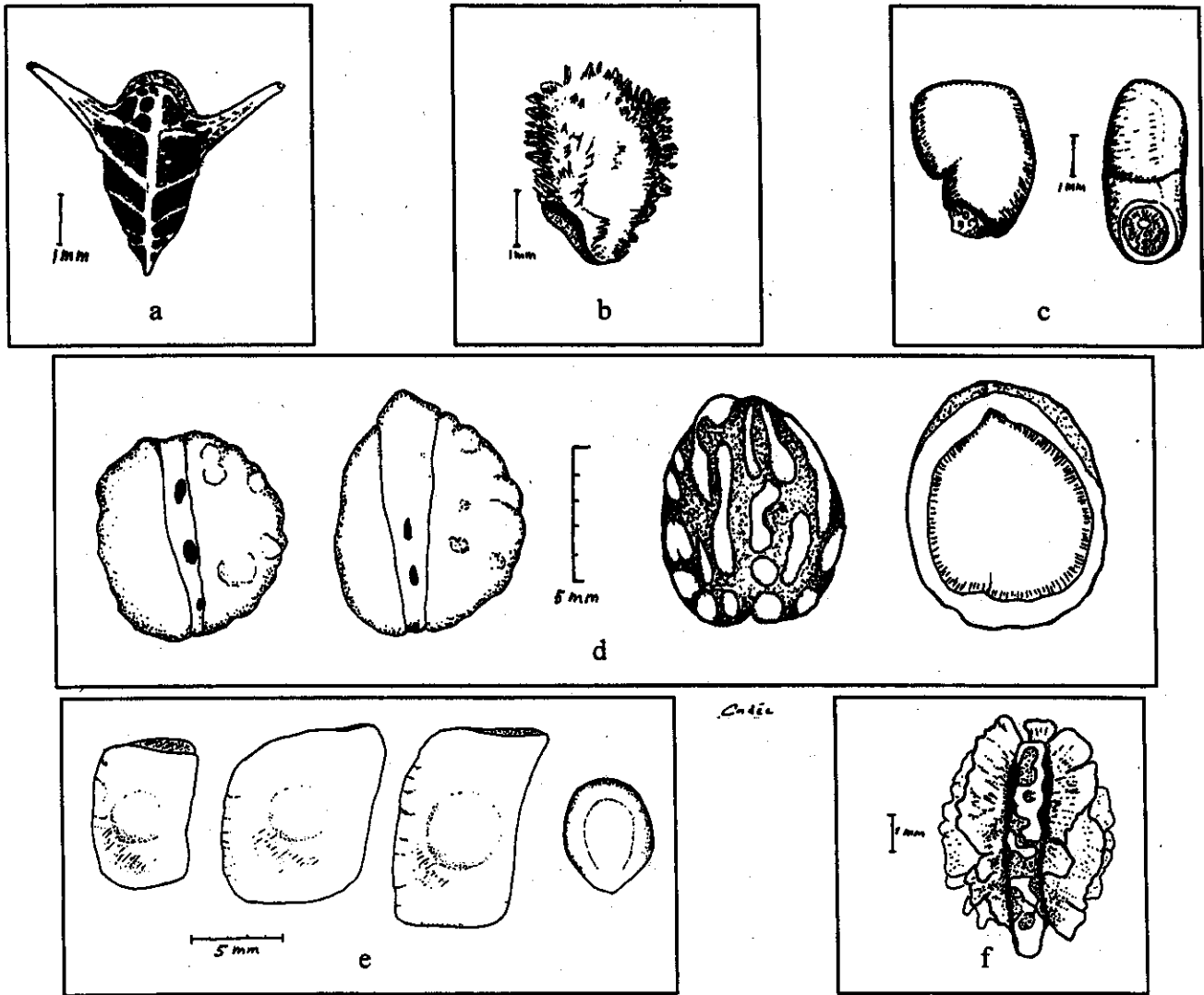


Figure 1. Some fruits and seeds from Djibouti drift: (a) *Tribulus terrestris*, (b) tomato *Solanum lycopersicum*, (c) guava *Psidium guajava*, (d) ? *Elaeocarpus* sp., (e) *Mimosa* sp. and (f) papaya *Carica papaya*. (Note differences in enlargements.)

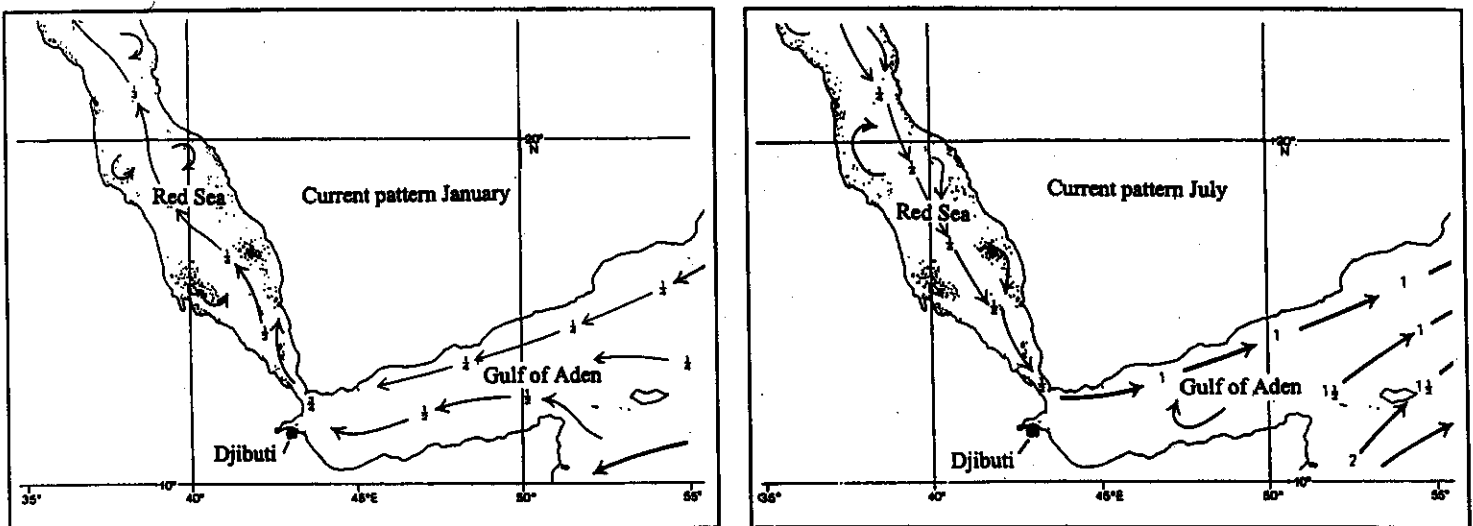


Figure 2. Surface currents in the Gulf of Aden - Red Sea area (from Anon. 1987)

**The Lucky Bean**  
by John V. Dennis, Sr.  
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The Sea-bean Symposium this year at Cocoa Beach was noteworthy for the many good finds on the beach made by participants. The most outstanding one, to my way of thinking, was a white nickernut which closely resembled our familiar gray nickernut (*Caesalpinia bonduc* (L.) Roxb.).

We already have gray, yellow, and chocolate-brown nickernuts. Was this another color phase or another species? This is a question that still hasn't been resolved for the brown ones. Both Cathy Yow in Texas and Ed Perry in Florida have grown sizable plants from brown nickernuts picked up on the beach. Specimens from Ed Perry's plant, being sent to a taxonomist at the Kew Gardens in London, may tell us if we have a new nickernut species.

In my Lucky Bean column in the May, 1998 issue of *The Drifting Seed*, I discussed what was known about the yellow and brown ones. Yellow ones had been obtained by the late Lt. Col. Corrine E. Edwards from Elliott Key in Biscayne Bay, Florida. She said that they did not float. The yellow ones have the scientific name *Caesalpinia major* ((Medikus) Dandy & Exell). Gary M. Williamson and I discovered several nickernut plants at the edge of Mosquito Lagoon, Merritt Island National Wildlife Refuge, that bore distinctively yellow seeds.

Brown nickernuts, I reported, are found stranded on beaches on the southeast coast of Florida and from Padre Island, Texas to Yucatan in Mexico. I should add that they are found much less frequently than the gray ones.

As if we do not already have enough problems to solve concerning the yellow and brown ones, we now have a white one to contend with. Oddly enough, as stated in E. Charles Nelson's book, *Sea Beans and Nickar Nuts*, white specimens were sometimes found on European beaches. He quotes the Revd Dr A. Stewart, who in 1893, informed the Society of Antiquaries of Scotland that "canary yellow specimens and specimens of almost white color are sometimes found." Nelson states that the yellow ones are usually identified as *Caesalpinia major*.

If indeed yellow ones were found on European beaches, it would seem unlikely that they were specimens of *C. major*, which reportedly do not float. However, as noted in Florida, gray nickernuts sometimes take on a yellowish tinge. This may be because they acquire the yellow from the sediments in which they happen to lodge.

Every effort should be made to find more white nickernuts. The present Florida specimen was found by Nancy Eastlake from Missouri in drift at Canaveral National Seashore.

John, Jr., who attended the symposium with me, flew back to his home in Ithaca, New York with a potted nickernut plant given to him by Ed Perry. He hand-held the plant when he boarded planes and placed it in overhead luggage compartments. The plant survived the flight to where I live in Maryland very well, and John tells me that it made it to Ithaca in good shape. It will be used as a house plant. The plane trips made by this plant rival the trans-ocean voyages made by the seeds!

#### Literature cited

Nelson, E. Charles. 2000. *Sea beans and nickar nuts, a handbook of exotic seeds and fruits stranded on beaches of north-western Europe*. Botanical Society of the British Isles, London.

"Columbus challenged the Spanish courtiers to stand an egg on its end. They tried but failed. He then hard-boiled one and squashed it down. 'That's not fair -- you broke the rules,' they protested. 'Everything's fair after you've done it,' he replied."

Roger von Oech in *A Whack on the Side of the Head*

## SCRAPES WITH THE BLACK WALNUT

by David K. Ferguson

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John Dennis' article on "The Lucky Bean" (*The Drifting Seed* Vol. 6, No. 2, 2000) reminded me of my own experiences with the fruits of the black walnut (*Juglans nigra*).

In 1973, while I was at Antwerp University (Belgium), a student brought me a fruit that had been discovered during an excavation of Tertiary sediments to the south of the city. The glauconitic sands full of sharks' teeth were clearly of marine origin. However, no one had ever found plant remains in these sediments, so the solitary fruit was a bit of a sensation. Since there was only one specimen, I was not allowed to section it. However, its exterior had a very characteristic ribbed appearance, so I had high hopes of being able to identify it.

I had photographs made and took these with me, when I visited the Royal Botanic Garden in Edinburgh (Scotland) in 1974. It was not long before I found an almost exact match in the fruit and seed collection. The fruit from Antwerp looked like that of *Juglans nigra*, a species from eastern North America. As most Tertiary plant remains from Europe are related to plants now living in China or the southeastern USA, this seemed quite plausible. At the time I had not thought of the possibility that the fruit might have drifted all the way from the USA (Dennis, 2000). However, if I was going to publish the discovery, I needed to visit the locality to gather more information on the geological setting. This proved to be my salvation, for black walnut trees had been planted all round the site. The fruit was not a fossil after all. It had simply rolled down the slope into the pit. Imagine what would have happened to my reputation, if I had rushed into print. It could have been the end of a scientific career.

Funnily enough, this unfortunate incident never marred my admiration for the stately black walnut tree. I even planted it in my own garden. A few years later when Werner Huber and I were planning to study the selective influence of abrasion on fruit and seeds, this species sprung to mind. Our experiments (Huber & Ferguson, 1998) showed that in the course of transport in the bedload of a stream, the ribs are worn down. It would be interesting to know whether such abraded walnuts are actually found by beachcombers, or whether, because of their buoyancy, they survive fluvial transport almost unscathed.

In his study of the fruits and seeds in the Potomac River, McAtee (1925) showed that some disseminules which cannot float hitch a ride on the ribbed pericarps. In the grooves of a single pericarp, he found 166 diaspores along with one leaf beetle, an ant and a terrestrial snail. Quite a haul!

### References

Dennis, J.V., 2000. The lucky bean. *The Drifting Seed* 6 (2): 8-9.

Huber, W. & Ferguson, D.K., 1998. On the abrasion of diaspores during fluvial transport: an experimental approach. *Review of Palaeobotany and Palynology* 102 : 305-311.

McAtee, W.L., 1925. Notes on drift, vegetable balls, and aquatic insects as a food product of inland waters. *Ecology* 6: 288-302.

"Were I to hold the truth in my hand I would let it go for the positive joy of seeking."  
Ralph Waldo Emerson

ED'S BEACH BYTES  
Mucuna on North Atlantic Shores  
by Ed Perry  
seaheart88@aol.com

North Atlantic beaches are blessed with a large variety of sea-beans that reach their shores. On the eastern coast of Florida alone, we now have stranding records for nearly 200 species of seeds, nuts, and fruits (Pete Zies, pers. comm., 1999), arguably making it the single best collecting area in the world for drift seeds and fruits. Disseminules that originate from South America, Central America, Mexico, and the West Indies eventually converge together in the mightiest current on Earth, the Gulf Stream, which transports them from tropical climes to distant shores.

These treasured seeds may strand on the shores of Gulf Coast states, eastern Florida, or even along the Carolinas or New Jersey banks. Those seeds capable of long floating durations can make trans-Atlantic voyages and end up on shores of Western Europe.

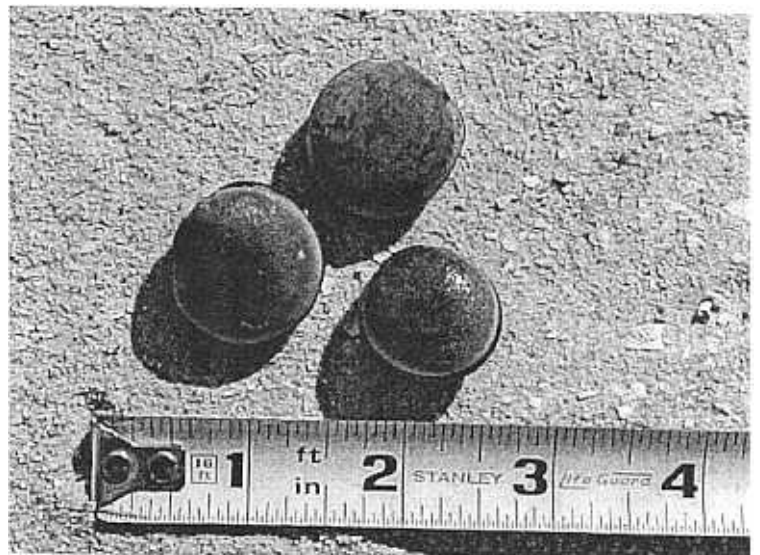
A favorite find of beachgoers along these shores has long been the true sea-bean or *Mucuna* seed. Nicknamed the hamburger bean here in the U.S., or the horse-eye bean in Europe, it is the thick black band (hilum) encircling about 3/4ths of the seed that has endeared it so with collectors. Many species of *Mucuna* seeds find their way into ocean currents. Originating from woody, high climbing vines in the tropics, these peregrine drifters are capable of performing long ocean journeys and stranding on shores thousands of miles from their parent plants. Beans of varied shapes, sizes, and colors have long captured human curiosity. Beautiful and inspiring, they carry with them the lure of distant, exotic lands, and far away places.



Brown mucuna *M. sloanei*

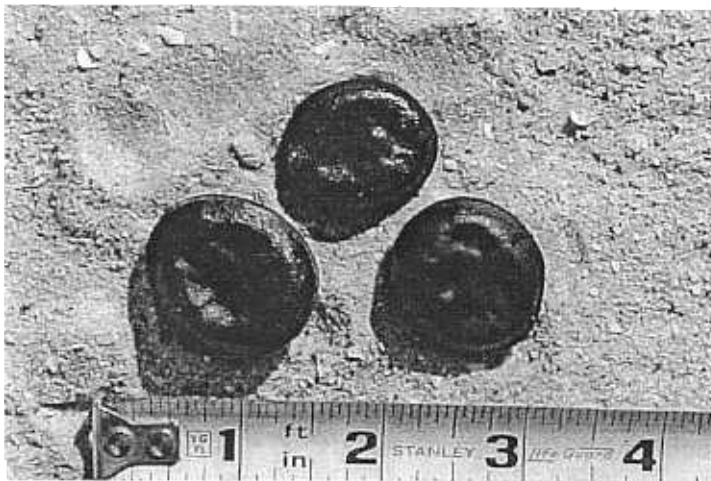
More commonly found than any other is the brown hamburger bean *M. sloanei*. Being at times nearly spherical in shape, this brown seed is the plumpest on average of all the North Atlantic *Mucunas*. Coloration can vary from a light peach to almost black, but most seeds possess a brown pigmentation that is offset by a cream to almost white border just above and below the hilum band. A grown out specimen of this seed produced a robust vine that bloomed chandelier-like clusters of yellow/green flowers. Two nights of temperatures just at 31°F killed this two-year old plant, which had been able to previously survive temperatures in the 33- to 34-degree range.

Nearly as common on beaches as the brown horse-eye bean is the red hamburger bean *M. urens*. More compressed in shape than *M. sloanei*, red horse-eye beans possess a red to orange pigmentation offset by a yellowish border running just above and below the hilum band. Swirls of black flecking may or may not be present. All seeds should be held in sunlight for optimum color comparisons. A grown out seed of this species is currently 1.5 years old and is displaying clusters of purple/green flowers dangling on foot-long stalks (forthcoming article). This species appears to be more cold tolerant as it survived the same freezing nights that killed back *M. sloanei*.



Red mucuna *M. Urens*

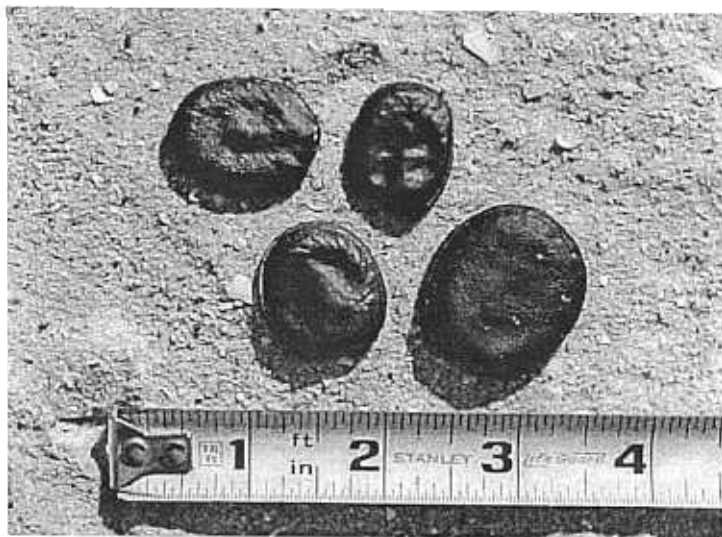




Black mucuna *M. holtonii*

A much rarer bean found on Atlantic beaches is the black hamburger bean *M. holtonii*. This lustrous, solid black seed is usually disc shaped with an extremely thin hilum more closely resembling that of *Dioclea* spp. The band, about 2 mm broad, is convex with the surface of the seed, slightly protruding most of its length around the seed. The smooth coat of the seed is wavy and dimpled as though the seed might have become desiccated during early stages of development. However, both specimens in my collection, and at least four other Florida records I have witnessed all possess these same characteristics.

A much thinner, more chip-like form of black hamburger bean has also been found on Florida and Texas beaches. The specimens I have in my collection and all others I have seen were horse-shoe in shape, and strongly compressed (much more so than seeds of *M. holtonii*). Some of the specimens exhibited a swirl-like corolla pattern on the face of the seed. The hilum of these seeds is flush with the contour and does not protrude. This is yet another drift seed that needs to be identified. I call them horse-shoe mucunas.



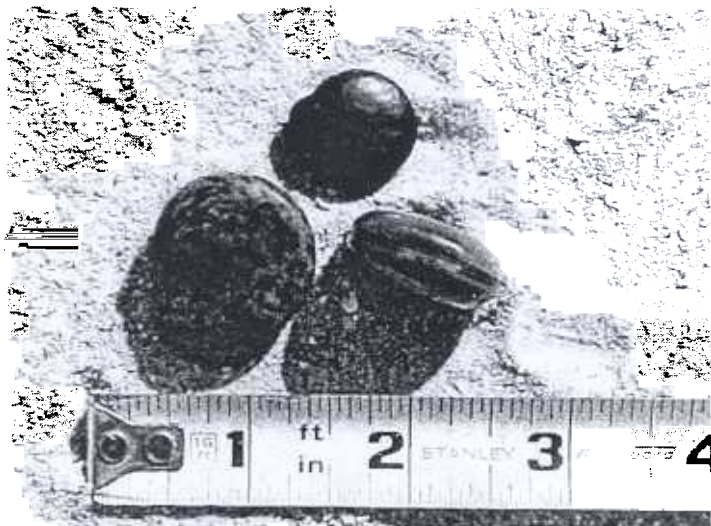
Horse-shoe mucuna *M. sp.?*



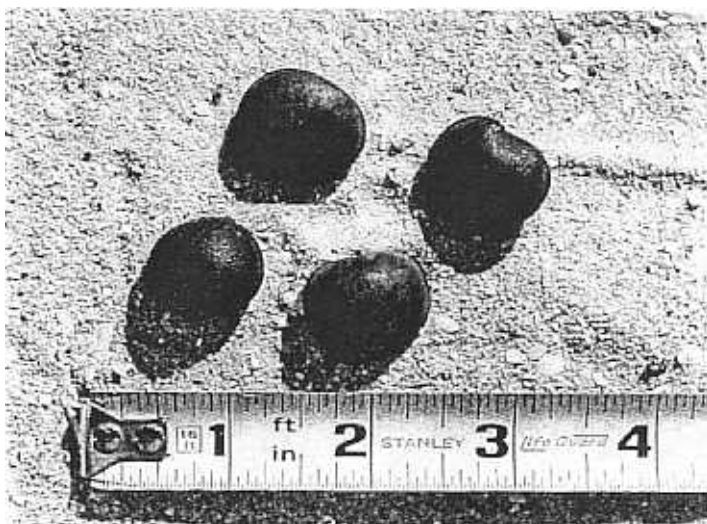
Thick-banded or giant mucuna *M. Fawcettii*

Another hamburger bean, this one sometimes of giant proportions, also reaches Atlantic beaches. Not to be confused with *M. gigantea* (a Pacific Ocean drift seed) (see photo next page), giant hamburger beans are treasured finds with collectors on Atlantic shores. Although not all specimens of this seed exhibit giant proportions (some can be the same size as that of *M. urens* and *M. sloanei*), they all share in common a noticeably wide, black hilum, usually 8-10 mm broad, or larger. The lighter colored border on each side of the hilum band often appears as though it were painted with a watercolor artist's brush. Debate exists as to whether or not this seed has been correctly identified as *M. fawcettii*, which might in fact already be extinct in its native homeland of Jamaica (Nelson, 2000). Nevertheless, it does appear to be a distinct species, of which a seed or two may have to be grown out to flowers if we are to ever know of its true identity. Since not all specimens are necessarily giant in proportion, I offer the name thick-banded mucuna as a common name, of which I often use.





Pacific mucuna *M. gigantea*



*M. rostrata?*

Still other seeds exist in my collection, and those of others, that appear to be *Mucunas* of different species. Some smaller seeds group into those that are "D" shaped, with overall dark gray coloring, and others that are round, orangeish brown, with convex, protruding hilums. These have been affectionately named "pokey-outees" by the editor of this newsletter. Could either of these possibly be *M. rostrata*? Who really knows? Over 100 species of *Mucuna* exist worldwide.

As a group of collectors and sea-bean enthusiasts from around the world, we should make it our mission to help one another in obtaining identifications for our treasured seeds, and to keep accurate records of when and where we collect. We know now that chemicals such as L-Dopa in the *Mucunas* is helpful in the treatment of patients with Parkinson's disease and that other sea-beans such as the *Canavalia* spp. carry cancer curing agents (Katz, 1995). Wherever questions to identity of seeds exist, every effort should be made to grow these seeds out to flowering plants. A world of discovery awaits every curious beachcomber. These beautiful seeds truly are gems of the rainforests and gifts from the sea!



Shown above is Ed Perry standing near some of his sea-bean plants at the Sea-Bean Symposium and Pete Zies sitting at his display area underneath some of the many award certificates.

★ **January 19-21, 2001: Astronaut Trail Shell Club: 21<sup>st</sup> Shell Show at Melbourne Auditorium, Melbourne, Florida (free).** Cathie Katz, Ed Perry, and the Sea-Beaners will have an island of sea-bean displays, books, cards, art, and jewelry. For more information about the shell show, contact Chairman Bobbi Cordy: 321-452-5736 or email: cordy@yourlink.net.

★ **July 7-11, 2001: Conchologists of America Convention: 2001 Shell Odyssey at the Radisson Resort at Port Canaveral, Florida.** Registration is \$45 due before June 7; \$55 after that. Turtle walks and field trips (Harbor Branch Oceanographic Institute and Spaceport) and many other other events. Convention will be open to the public July 10 (from 4pm to 10pm) and July 11 (from 9am to 1pm). Once again, the Sea-Beaners will have displays, books, cards, and jewelry. For more information, contact Bobbi Cordy: 321-452-5736 or email: cordy@yourlink.net.

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New reader **Peter Bor** from **Leiden, The Netherlands** is the author of a beautiful book about skate and shark egg cases (*Eikapsels van Haaien Roggen*) and is chairman of the Dutch Marine Life Study Group (Strandwerkgemeenschap). He recently gave a presentation at the Dutch Malacological Society in Rotterdam and brought some Florida sea-beans to display. He sent The Drifters his book and a copy of *Het Zeepaard* for our library. Thanks Peter. We hope to see you at a future Sea-Bean Symposium.

**Tom and Kathy Godbold** from **Santa Rosa Beach, Florida** came to the symposium with a glass float found on their beach near Panama City. This is one of the very few glass fishing floats found on a Florida beach!

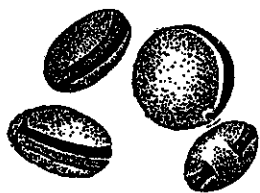
**Michael Manuel** from **Kuala Lumpur, Malaysia** has been collecting drift seeds from the beaches of Malaysia for awhile without knowing how to identify them: "I just came back to Kuala Lumpur (working here) from my hometown "Kuantan" capital of the Pahang State which is along the east coast of Peninsular Malaysia. This is where I take long walks along the beach (South China Sea) ... exploring and enjoying the many thought provoking wonders that are found there. Guess what...this time around what I found was very interesting indeed. A heart-shaped cookie-like seed with a very hardy shell which I have now polished with clear wax to reveal its beauty. Surfing through the internet on drift seeds I found out that this beauty is none other than the "sea heart" (*Entada gigas*). I really don't know if it has drifted from nearby areas...but I would say that I never seen anything like it before. I strongly believe it must have come from elsewhere... Also, from my past collection...I happen to find out that another peculiar looking large seed happens to be the "puzzle fruit." [Michael identified many of his seed finds from [www.seabean.com](http://www.seabean.com).]

New Drifter **Nancy Suthan** from **Palm Bay, Florida** found a shiny sea heart in Indialantic and got hooked on sea-beans, but didn't realize what a connection it would turn out to be. Among her first sea-beans, she found a *Canavalia nitida*, *Oxyrhychus*, *Mucuna* (a pokee-outee), a huge sea purse, and many other keeper beans. Nancy came to the symposium to have her seeds identified and discovered how rare they were. Not only that, her sea heart turned out to be one that Cathie Katz gave back to the sea a few years ago.

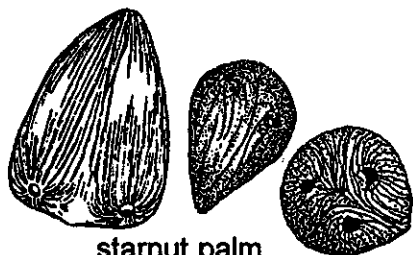
Because of lack of space in this newsletter, we can't adequately thank those who made our **Sea-Bean Symposium** a great success, but a few people must be mentioned for their outstanding contributions: First, **Ray Dickinson** and **Anne Brindisi** of the **Cocoa Beach Public Library** once again graciously opened their beautiful facility to us and allowed us to stay beyond normal library hours. **Gary Jenkins** at the **Sea-Aire Motel** welcomed all our out-of-state guests graciously. **Pam Schrimmscher**, daughter **Mary**, and sons **Patton** and **Spaulding** drove from **Ft. Lauderdale** to devote their time helping us set-up, judge, organize, and clean-up through the weekend. (All this while father Grant was recuperating in a hospital in South Florida.) New Drifters **Sam** and **Mike Burnett** drove from **Texas** to help us with all the events, exemplifying how the magic of sea-beans connects us. Once again **Jim Angy** donated his time and talents to capture the weekend with his professional photographs. **Ed Perry**, as always, was *everywhere* through the planning stages, setting up, and answering questions non-stop. **Lisa Hutchinson** from **Allentown, Pennsylvania** made everybody's weekend a lot easier by pitching in enthusiastically wherever help was needed. And most importantly, **Sue Bradley** worked through the entire year behind the scenes, quietly and efficiently making reservations, paying bills, arranging schedules, collecting money, sending T-shirts, playing hostess ... she even chauffeured, fed, fixed, and soothed everyone in need ... thanks Sue for handling all the complex business details so the Drifters could play on the beach and have fun!

# Simple Guide to Common Drift Seeds

(Illustrations by Cathie Katz and Pamela J. Paradine)



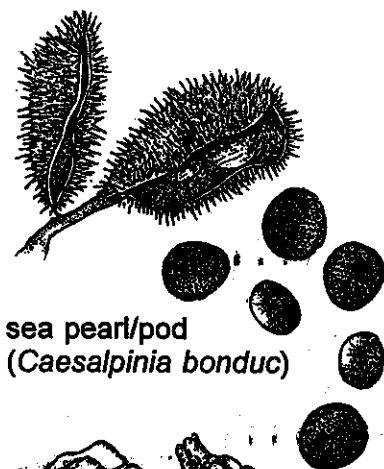
hamburger bean  
(*Mucuna* spp.)



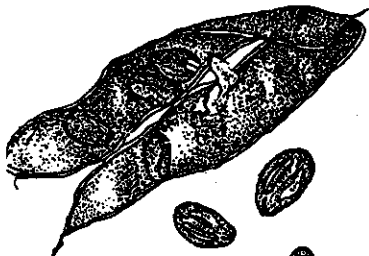
star nut palm  
(*Astrocaryum* spp.)



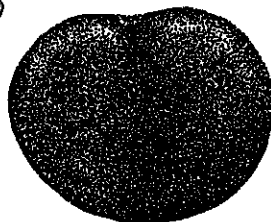
country almond  
(*Terminalia catappa*)



sea pearl/pod  
(*Caesalpinia bonduc*)



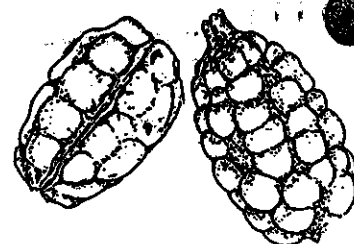
bay bean/pod  
(*Canavalia rosea*)



sea heart  
(*Entada gigas*)



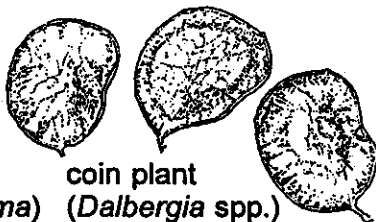
golfball/pod  
(*Manicaria saccifera*)



hand grenade  
(*Sacoglottis amazonica*)



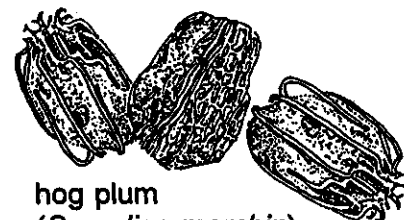
Mary's bean  
(*Merremia discoidesperma*)



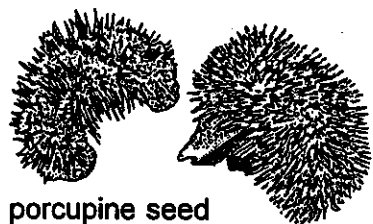
coin plant  
(*Dalbergia* spp.)



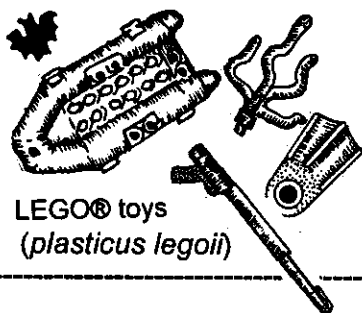
sea purse  
(*Dioclea reflexa*)



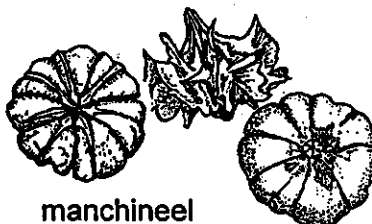
hog plum  
(*Spondias mombin*)



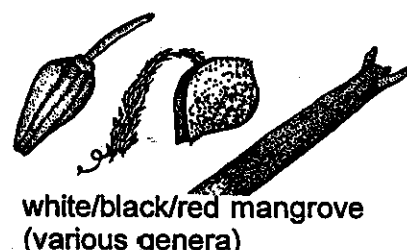
porcupine seed  
(*Caryocar microcarpum*)



LEGO® toys  
(*plasticus legoii*)



manchineel  
(*Hippomane mancinella*)



white/black/red mangrove  
(various genera)



## The Drifting Seed

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