

# 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.

Distributed to more than 20 countries.

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The 14th Annual International Sea Bean Symposium will be held at the Cocoa Beach Public Library,  
October 16th-17th, 2009.

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**A Unique Contribution by Drift Seeds**  
by Gerald Sullivan, [geraldsully@yahoo.com](mailto:geraldsully@yahoo.com)

Most are aware of the importance of drift seeds over the past centuries in the distribution of plants throughout the world and also as an area of fascinating scientific studies for past and present biologists. Not to be outdone, the current modern-day “drifter” (person interested in drift seeds) continues to be enthralled with the excitement of discovery of both old and new seabean which wash ashore. Now a new role may well be emerging for our wondrous drift seeds.

What started as a non-seabean project blossomed into a most beautiful and rewarding drift seed contribution. The initial intent was to collect a sufficient number of freshly fallen kapok pods for enough floss to make a pillow. Things then began to “snowball”. See if you can follow the flow of these cryptic notes: pods harvested, seeds ginned by hand, counted (average for 20 pods -130 per), 10% seed germination, floatation (el sinko), pod floatation—decomposed 1-3 months, floss constituted 30% of intact pod weight, grew two beautiful kapok saplings, then germination and potting of selected Kauai drift seeds, which led to germination and potting of specific drift seeds from Mustang Island, Texas, and finally incorporation of these drift seed plants within the confines of the National Tropical Botanical Garden.

A brochure on the National Tropical Botanical Garden states that “The NTBG is dedicated to preserving tropical plant diversity and stemming the tide of extinction through plant exploration, propagation, habitat restoration, scientific research and education. NTBG’s gardens and preserves are safe havens for at-risk species that otherwise might disappear forever.” Nearly 2,000 acres of gardens located in Hawaii and Florida are available for these purposes.

Drift seeds were found to be an excellent source by which to expand the diversity of the plants within the garden, i.e. utilization of Mustang Island, Texas, drift seeds for the introduction of new plants to Kauai and to make more readily available, the indigenous plants which did not exist within the boundaries of NTBG, through locally collected seabean. These newly acquired plants can now be used to carry out the objectives as outlined in the NTBG brochure.

The scarification and germination procedures of the seeds as outlined by Perry (1) were used. Only one real problem was encountered and that was the invasion of mold as was cautioned by Perry. From discussions at NTBG it was learned that the champion arrester of fungal growth was isopropyl alcohol. Sure enough the first batch of germinating seeds became infected with mold and responded, as predicted, to good-ol rubbing alcohol. Later a second batch of seeds also became moldy, but the isopropyl was no longer available. It just so happened an inexpensive Kentucky bourbon (Ten Spot) was available and proved to be equally effective. You guessed it, the last batch also became infected, but no iso and the Ten Spot had strangely disappeared. Fear Not! What kills a million organisms on contact? Of course, Listerine mouthwash, which did an outstanding job.

Phase I was composed of the following locally collected seabean: 3 non-mottled *Mucuna gigantea*, 3 black mottled *M. gigantea*, 1 *M. sloanei* and 2 *Dioclea wilsonii*. Once these vines had grown to a length greater than three feet, they were surrendered to the “Garden” for repotting and eventually a permanent planting site. It just so happened that a rather extensive anchor boundary fence had just been erected and would make an excellent trellis for these vines which would also add beauty to the stark fence. Phase II was composed of drift seeds from exotic plants which were not indigenous to

Kauai. These included 4 seahearts, 4 *Mucuna urens*, 2 brown nickernuts, 3 Mary's beans and 1 little marble. These seabean specimens were obtained through the graciousness of John Williams at the University of Texas Marine Science Institute on Mustang Island, Texas. I swear John must have spent numerous hours culling out the dredges of drift seeds from UTMSI's extensive reserve collection and sending them to me. How bad were they? Let me tell you! They were sooo bad they would run a close 2<sup>nd</sup> to the grotesquely misshapen seahearts featured by Beerensson in "Hearts Gone Wild" (2).

Twenty-two of 23 attempted germinations were successful. One seaheart failed to sprout. All were incorporated into the "Garden's" massive inventory of plants and will be available for viewing by the general public and visiting research scholars for years to come. Initially, dried pressed specimens of all of these plants grown from drift seeds will be prepared, documented and added to the Herbarium Archives of NTBG. Another very fine beginning contribution.

For good measure, the two hearty kapok saplings were also donated along with a minimum of 10,000 kapok seeds, just in case.

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## **Changes in Mass and Damage to Coconuts Floated in English Hindu Festivals**

by Dr. Roger A. Hewitt, 12 Fairfield Road, Eastwood, Leigh-on-Sea Essex, SS9 5SB

My report on avocado fruit noted that a major Hindu beach festival took place at Shoebury on September 16, 2007 (Hewitt 2008). This festival was repeated during the noon high tide on September 13, 2008 and both involved floatation of coconuts. Most of them remained on the beach as broken shells with thin, brown and bored endosperm flesh after only two days. Another was seen with a black skin and partly pink endosperm on the Shoebury strandline formed two days after the Rakshaa-Bandhan festival on August 16<sup>th</sup> in 2008. Rakshaa-Bandhan appears to be when numerous coconuts are also floated in freshwater canals at Southall in London, near Coventry and presumably elsewhere. These stand much less chance of dispersing into the North Sea than unbroken coconuts released from Shoebury in September. Some such as U (on Tables 1-2) were whole husks matched to my own purchase (0). According to Kanitkar (1984, p.45) the offering of coconuts to the Vedic Sea-God Varuna on the full-moon day of Shraavan (Rakshaa-Bandhan) originated in Gujarat and Maharashtra (*i.e.* Bombay/Mumbai). Mumbai has spring tides rising 2.3 m above mean sea-level, compared to 5.3 m in Bhavnagar (Gujarat) and consequently is similar to Shoebury in lacking barrier islands (Ahmad 1972).

It was found that split coconut G3 (Table 1) had a spot of pink paint, containing 0.04 mm crystal powder, unworn on the endocarp. It exactly matched paint, which had evidently once covered the whole endocarp of H2 before being worn off all raised areas by beach sand erosion. One of the pores of H2 was open, but there was no paint on the loose ball of endosperm inside it. The lid of one of the other pores was damaged like those of Y and Z stranded the same day. By contrast, G3 had unworn exposed pores and an open, mature or perhaps juvenile pore protected by an unpainted husk. This paint could not be seen on either of these two coconuts when collected black and wet on the beach. The relatively mild weather stranding the coconuts on March 12 evidently produced more wear by rolling the endocarps in the surf, than the breakage in half and the ejection high on to a gravel beach berm experienced by G3 in January. In the case of coconut Z one could observe from an old white bacterial waterline (80 mm diameter, 25 mm high, opposite end from the wet husk-cone), that it had lost mass following earlier stranding damage to both pore lids. It had developed a new less dense, stable and horizontal waterline before it stranded again on March 12. It is therefore unlikely that Z had been floated for Holi during the night of March 10/11. It was not present on the beach on the 11<sup>th</sup>. The three coconuts from Thorpe Bay (Y, G4, H2) were within 0.16 km of each other and not present on March 9.

### **Methods and material**

Coconuts floated in local rituals differ from those sold in supermarkets with exposed pores and a milky endosperm inside the endocarp (A to F of Hewitt 2005). They are divided here into unaltered husks with a brown exocarp (U-type), the general type sold in local grocery shops with the mesocarp cut into a truncated cone around a potentially thin or open functional pore (G-type) and the Holi or H-type prepared from them by removal of all the mesocarp before floatation. Maturity and drying produces a dry endosperm lacking milk in the central cavity and a contracted subtriangular, loose exterior. One intact G-type coconut, termed T on Tables 1-2, had an endosperm, which rattled about inside it when picked up on a gravel beach berm made during a thunderstorm. Supermarket coconuts were floated or refloated in tanks or buckets of seawater from Westcliff and kept at the annual temperature cycle reviewed by Hewitt (2006) away from direct sunlight. Specimens are listed below

with the dates of purchase. Specimens which differed from these in containing one open pore when stranded, are included on Table 1 (G, H). They soon differed from intact coconuts in containing or developing decayed and missing endosperm flesh. When intact coconut F of Hewitt (2005) and coconut K finally sank, they were cut in half. They contained white endosperm around stagnant seawater that largely filled the central cavity of the endosperm. This flesh showed no sign of thinning or decay and was soon eaten by mice and or squirrels when left in the garden.

Table 1. Origin and refloatation dates of coconuts with height of the tide (m above mean sea level O.D.) Beaufort wind number and direction at the time of initial stranding deduced to be n semi-diurnal tides before collection and refloatation. The direction to which conical parts of the husk joined to endocarps which refloated, and or the middle axis between the three pores in the endocarp, pointed on the strandline are substituted for wind data in March 2009. On March 8, an adjacent flagpole to the stranding Y coconut showed the wind blowing from about 249° E. of N., which is W.S.W. The velocity was probably Beaufort Number 4, which is 5 to 8 m per second. Probably the gravel strandline formed with the other coconuts on it during the previous tide in slightly different wind conditions. The March 5 coconuts were probably deposited around 4 am on the 4<sup>th</sup> when south and west winds of Beaufort Numbers 6 to 9 were predicated (<24 m per s). U2 had evidently hit a bastion of the promenade and then split apart, a complete longitudinal section being deposited concave-up on a trend 82° E of N. and a conical segment of the husk was deposited with convex part of the endocarp near it at the angle indicated. Both were up to 50 m east of the bastion and subsequently refloated (11 days for larger part which included decaying endosperm). Strandlines trend (W. to E.): Stepney O; Chalkwell 105 & 99 (Z); Westcliff 100; Thorpe Bay 87(U2), 81(H2), 118(G3 & Y), 115 (G1); Shoebury 45 degrees East of North.

	n	m O.D.	Wind	
G1	0	2.4	7 W.S.W	Thorpe Bay. Jan. 13, 2004
G2	0	3.1	6 S.W.	Chalkwell. April 2, 2006
G3	0	3.1	7E.S.E.	Westcliff. Jan. 31, 2009
G4	1	3.1	61° E. of N.	Thorpe Bay. March 12, 2009
H1	0	-	3 S.	Regent's Canal Stepney. April 5, 2004
H2	1	3.1	97 ° E. of N.	Thorpe Bay. March 12, 2009
I	-	-		Dominica. Purchased, Feb. 1, 2005
J	-			Sri Lanka. Purchased, Dec 9, 2005
K	-	-		Sri Lanka. Purchased, Dec 9, 2005
L	-	-		Côte D'Ivoire. Purchased, Feb 14, 2007
M	-	-		Côte D'Ivoire. Purchased, Feb 14, 2007
N	4	2.6	7 S.W.	Shoebury. Sept 18, 2007
O	0	-		Costa Rica. Purchased, Sept 20, 2007
P	0	2.3	4 E.	Westcliff. Oct 23, 2007

Q	-	2.3	7 N.W.	Chalkwell. Dec 7, 2007
R	-	-		S. Asian Grocery. Purchased Jan 8, 2008
S	-	-		S. Asian Grocery. Purchased Jan 8, 2008
T	-0	2.8	5 S.W.	Westcliff. July 8, 2008
U	<5	3.0	4 S.E.	Shoebury. Sept 18, 2008
U2	3	3.3	35° E. of N.	Thorpe Bay. March 5, 2009
V	<5	3.0	4 S.E.	Shoebury. Sept 18, 2008
W	<5	3.0	4 S.E.	Shoebury. Sept 18, 2008
X	-	-		Côte D'Ivoire. Purchased Feb 28, 2009
Y	0	3.1	314° E. of N.	Thorpe Bay. March 12, 2009
Z	0	3.1	331° E. of N.	Chalkwell. March 12, 2009

### Description of the Ganesha Festival Beach

Like the Sikh August or September festival, implicated in a U-type flotation by Ebbesmeyer (2006), Hindu festivals are at least in theory timed by their lunar calendar and therefore to the tides. For example, Ananta-Chaturdashi, worship of Vishnu, is observed on the day before the full-moon day of the lunar month Bhadrapad, and the start of the public festival of Ganesha is on the fourth day of that month when the full-moon day is counted as the 15<sup>th</sup>. The Ganesha festival is traditionally of variable length (Kanitkar 1984); but no longer than ten days. In 2008, Ananta-Chaturdashi was incorporated into it in the meeting more or less at the right time with respect to the full moon on September 13. The noon high tide required for the washing of the image of Ganesha near the beach had a relatively low predicted height of 2.4 m O.D. The previous year the meeting was held at the equivalent weekend in the Gregorian calendar and marked the start of the Ganesha Festival with similar washing of his image around 3 pm G.M.T. in a tide of 2.6 m predicted height on the 16<sup>th</sup>. The festival was coincident with a wind blowing along it and breaking one of the coconuts at the fence at the north end of the strandline. The festival strandline was itself stranded by lower predicted tides before being studied on the morning of the 18<sup>th</sup>. But my visit on the morning of the 18<sup>th</sup> in 2008 followed a period of continuously rising predicted tides which had reworked coconuts presumably stranded by a mild onshore breeze during the festival, into the seaward face of a gravel beach ridge made by at least three tides of 3.0 m O.D. predicted elevation. The general rule is therefore that meetings which are held at or just before the full-moon produce a reworked strandline which can potentially then persist for a month or more. Those meetings which occur earlier in the Ganesha Festival, do preserve the festival strandline, but only for a few days. The two beach surveys on September 18, 2007 and 2008 represent the same 0.50 km long, roughly metre wide strandline of *Fucus*, twigs, grass etc. The preserved festival strandline, produced by windy weather showed a single intact coconut (N) found with an English Walnut *Juglans regia* L. (which sunk after 150 days) at the proximal and more sheltered southern end. In addition there was a rose on a long stalk which had probably forming part of the ritual and 19 broken coconuts (with G-type husks cut into truncated cones like N). The sands below were barren but the afternoon tide of the 18<sup>th</sup> was introducing five more fragmentary coconuts

lower down. By contrast, the 2008 gravel ridge yielded a U-type husk half buried in the seaward face (U) plus two intact (V,W) and at least 12 broken G-type coconuts with husk cones. Coconut P was probably floated there later, for the Durga-puja on October 20, 2007, judging from more fragmentary finds. But other coconuts on Table 1-2 probably came some way before stranding.

## Experimental Results

Coconut G1 leaked air from the cone of husk fibers because there was an intact but, unusually large diameter (19.1 by 17.7 mm) eye plate under it, subsequently found to lack the paler brown inner layer of the nut wall still present under the two smaller exposed eyes after two years of decay during floatation (final mass 673 g). Coconut H2 was emptied of water and kept dry for 10 days, when the mass was recorded as 310 g and the volume estimated as 618 ml from the circumferences (A = 334, T = 328 mm) measured when wet. Originally, it was re-floated with enough seawater trapped around the endosperm ball from the gravel ridge to float with about 50 mm above the water line. Drying therefore made little difference to the low density resulting from loss of milky liquid and contraction of endosperm before stranding. Coconut Z lost mass while floating over the same period, presumably by decay of milk into gas in the more intact nut. A new horizontal, white bacterial waterline developed in a few weeks; but it is unclear if it would form quicker or slower in the sea. This kind of juvenile and milky geometry was probably also present under the husk fibers of the dense coconuts O and P. All the coconuts were weighed in air inside plastic bags of known mass to trap the water, which leaks from the husk and nut wall. In the case of G1 it was found that the extra mass required to sink it when *in-situ* declined from 43 to 38.5 g even though the equivalent weightings in bags in air after one and ten days were constant. When the exocarp was present as in O and U1, this error was small, but the weighing of such large objects in g units remains approximate.

These tests included coconuts with truncated cones of core fibers at the end containing the eyes and two whole husks with an originally green (O) or brown (U1) skin. The brown skin had been split by gravel and that husk, which was probably less full of milk when purchased than O, has gradually become saturated with seawater. By contrast husk O, which was nearly submerged when floated, has lost mass and after 500 days was floating more horizontally with a mass around 1157 g. The exposed fibers of truncated husk cones are saturated more quickly, but they would permit relatively milky coconuts such as P and to float after a festival rather than sink instantly like I. Coconut P had sunk in a bucket by November 19, long before it was re-weighed after 100 days. It is unlikely that it and the other stranded coconuts from Chalkwell and Westcliff originated from Shoebury festival. However, it is almost certain that the stranded material reviewed by Hewitt (2005) came from earlier smaller Hindu meetings before the major festival started in September 2005, and not London as previously suggested. A London Coconut H1 lacked all trace of core fibers and had traveled 34 km along the Paddington and Regent's Canal from Bull's Bridge (32 km if floated elsewhere in Southall). It had a dry density of 0.26 g/ml and an equatorial waterline defined by a white line above a relatively green lower hemisphere around the partly open eyes. The algae were still being grazed by the freshwater limpet *Acroloxus lacustris* (L.) as it floated in the canal. It had to pass three more sets of locks to reach the tidal River Thames at Limehouse. Holi was on March 7 in 2004 and it seems unlikely to have been floated as recently as that. When cleaned it was re-floated in seawater with weights on it to prevent the resealed eyes being submerged. After 1571 days, the mass had gradually increased from 147 to 170 g and it was then permitted to float in the original and very stable eyes-down orientation. An increase in mass of about 20 g was noted to occur within a few hours of floatation of the six supermarket coconuts floated by Hewitt (2005). Hemispherical coconut shells with endosperm soon

become saturated and sink. The gain in mass by coconut H1 was probably due to a similar, but much slower wetting of the endocarp. However, with the pores sealed and at least some parts of the endosperm intact there was no major flooding. By contrast, intact supermarket coconuts are included on Table 2 and showed only a minor instantaneous increase in mass, followed by a smaller decline in mass due to milk decay than supermarket coconuts A to F of Hewitt (2005). There subsequent sinking is unlikely to take long, and in the case of K with relatively large eyes has taken place after 1007 days at a mass of 537 g. An originally sunk milky coconut (I) has gradually lost mass, re-floating in a bucket of seawater of 1.027 g/ml density after 722 days at a mass of 585 g which has continued to decline since then.

Table 2. Initial variations of mass (g) of intact coconuts after X days in seawater tanks. Axial average circumference (A) and maximum transverse circumference (T) of the nut marked with asterisk (\*) when husk present and included in measurements. Coconut was X re-weighed after 22 days not 10.

	X=0	X=1	X=10	X=100	X=200	A mm	T mm
G1	-	797	800	797	-	429*	343
I	604	608	611	607	598	336	314
J	556	554	549	-	515	335	288
K	526	529	521	-	499	336	296
L	561	-	-	578	573	346	328
M	415	-	-	427	428	357	253
N	-	484	496	-	-	386*	315
O	1445	-	1450	1296	1106	488*	427*
P	-	696	-	838	-	482*	317
Q	482	-	-	486	-	358	298
R	563	606	625	639	625	412*	316
S	857	907	948	978	968	438*	382
T	331	356	379	488	522	402*	308
U1	-	1122	1187	1275	1394	475*	419*
U2	-	-	-	-	-	c.468*	c.404*
V	-	558	589	599	602	394*	314
W	-	739	769	787	748	441*	341
X	402	-	426	-	-	340	271
Y	-	511	507	-	-	396*	319
Z	-	472	444	-	-	378*	308

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**How Big Is Your Brownie? . . .  
and While We're at it, How Big is Your Yellow Fellow?**

by John Beerensson, [beerensson@bellsouth.net](mailto:beerensson@bellsouth.net)

It's that time again. No, I'm not talking about the snack in your lunch box, nor am I talking about your old Kodak camera. I'm talking about the brown nickernut (*Caesalpinia major*). Once again size does matter. As always, big is defined as length. For detailed information on the brownie, and other nickernuts as well, see Ed Perry's and John Dennis' book, *Sea-Beans from the Tropics*. A great book with great pictures. Let's not forget that it was Ed Perry who was key in the proper identification of this bean. Anyway, if you are reading this and you don't have a copy of Ed's book . . . hmmm . . . you may need counseling.



I've only found seven of these gems over the last dozen years. They are pretty rare on Florida's east coast beaches. Of course, they are even rarer on European shores. E. Charles Nelson in his book, *Sea Beans and Nickar Nuts*, reports only one confirmed stranding. On the opposite end, our Texas beaners report many strandings. So they are going to have the edge in this contest since browns are not that rare on their beaches.

One of mine is a youngster. A jade green in color looking like it just left its pod. Let me digress and mention that this color looks great in a jar with other nicely colored beans. I also have a teenager. Grayish brown with a hint of green. A little longer out of its pod. It also looks good in that jar of beans. Now for the adults—the chocolate-browns. My biggest is 33 mm. A whopper in the nickernut family. You Sullivans and Burnetts in Texas—I've got to believe you have one that's bigger. Well, do you? Maybe one of you Florida beaners has one that's bigger. Let me know. And you folks not in Florida, same for you. Let me know.

Now for the stumper. One of my browns is spherical, not oblong, not compressed, and it's the same size as a gray nickernut (*Caesalpinia bonduc*). Could this be the ciliata yellow nickernut (*Caesalpinia ciliata*)? Some of these yellows are not always yellow. Some can be brown. Once again, go to Ed's book for a picture and further discussion. Note that I spell out *Caesalpinia* every time. I know I don't have to, but by doing it over and over again maybe one day I'll learn how to pronounce the darn word. But I digress.

To confuse things more, there seems to be a number of different yellows out there. Nan Rhodes found at least two other species in the Bahamas; one that's a spherical greenish yellow, and one that is an oblong canary yellow. Michele Kelley found an oblong one—half canary yellow, half bleached out white. Ed Perry and Christopher Boykin found spherical canary yellows in south Florida that also might not be *ciliata*. So while I'm at it, how big is your yellow? My biggest, which is like the oblong kind Michele and Nan have found, is 25 mm.



Anyway, I've given you lots of homework. Do your best. If you have a brownie or yellow fellow that's bigger than mine, they might be highlighted at a future Symposium.

**Spring Tease 2009**  
by Michele Kelley, Melbourne Beach, FL

May 20, 2009. It was the middle of a work week and I was headed to see a customer in Cocoa Beach. Tooling down Highway A1A, the rain had finally stopped and I was thinking I should hit the beach after work. Stormy weather had brought strong easterly winds that had been blowing for several days. Conditions were just right for a *Spring Tease*, a phrase coined by Cathie Katz for the last chance for sea beans before autumn. Beachcombing would be perfect; no doubt there were treasures to be found.

Anyone searching for sea beans knows how scarce they have been lately so any find would be a gift. What I was about to encounter was beyond my wildest imagination.

As I headed north I spotted a truck I thought could be John Beerensson's. Sure enough, I caught up with him and asked if he had found anything. He pulled from his pocket a handful of beans. Hamburgers, sea purses, nickernuts, sea pearls, sea hearts, and a rare brown nickernut! It was then that I totally blew off any thought of going to work. I rolled up my slacks, put on some sunscreen and hit the beach! Plans had changed; I was going beaning!

We hadn't walked far when we both spied a red hamburger. John straight armed me with his best football block, but what he didn't know was that the night before I had watched the Ernie Davis story.



He was the first African American to win the Heisman Trophy. As a result I had my football moves down and was able to avoid the block and come up with the hamburger. Moments later the same thing happened with a sea purse; a block, a dive, victory was mine.

John learned fast that I showed no mercy when it came to beaning and changed his strategy. He diverted my attention by showing me a purple globe sea snail he had found. They are very fragile and rarely make it ashore in one piece. While I was admiring the snail, John jumped

ahead of me and scored a beautiful golden blonde Mary's bean, a color of which I'd never seen before. Could it be .... greed and envy in beaning? As we walked along I coveted his find thinking I would not find anything to rival the golden Mary's bean. I also had thoughts that perhaps beaning should be a solo sport. It was then that I spotted a speckled sea purse. As I reached down, there lying next to it was one of the rarest sea beans. One I had heard existed, the ultimate find, a giant sea purse. WOW!

This unknown species of sea purse needs a name. How about calling it *Megalodon Purse*, naming it after the now extinct giant shark that had seven inch teeth!? What a great addition to my collection. No tease in *Spring Tease* this time. It was a mega day or perhaps a MEGALODAY!!

## Seeds and Things from the Beaches of the Garden Island

Carol J. Sullivan, Tim Flynn, & Gerald Sullivan

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A rather extensive survey of stranded drift seeds on Kauai's beaches was conducted in 2004, resulting in the collection of 67 different seabean (1). In 2007 these beaches were revisited over a 6 month period and during that time 52 of the original 67 were again collected and over 30 new drift disseminules garnered.

The following is a list of the newly stranded disseminules on Kauai beaches. The asterisk (\*) indicates that the seed was not previously considered a drift seed (2).

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*Albizia* sp., No common name

*Alpinia* spp., ginger\*

*Ananas comosus*, pineapple

*Andira inermis*, cabbage bark

*Annona glabra*, pond apple

*Annona squamosa*, sugar apple

*Arecastrum romanzoffianum*, Queen palm

*Artocarpus communis*, breadfruit

*Averrhoa carambola*, starfruit\*

*Caesalpinia sepiaria*, mysore thorn\*

*Cassia grandifolia*, pink shower

*Castanospermum australe*, Morton Bay chestnut

*Cerbera* sp., Madagascan ordeal bean

*Citrus grandis*, pummelo

*Crinum pedunculatum*, Queen Emma lily

*Euphoria longan*, dragon's eye\*

*Glycine max*, soybean\*

*Heliotropium fortherranum*, no common name\*

*Heritiera littoralis*, puzzle fruit

*Hippomane mancinella*, manchineel

*Ipomoea pes-caprae*, railroad vine

*Ipomoea* spp., morning glory

*Leucaena glauca*, Kae-haole

*Litchi chinensis*, lychee

*Nephelium lappaceum*, rambutan\*

*Pistacia* sp., pistachio

*Pritchardia* spp., loulu\*

*Prunus armeniaca*, apricot

*Spathodea campanulata*, African tulip tree\*

*Spondias dulcis*, wi tree

*Stictocardia tiliifolia*, baby woodrose\*



*The Drifting Seed*, 15.2, September 2009

Pictured below (from left to right) are *Pritchardia* seeds, a *Cerbera* fruit and seeds of baby woodrose. Nearly all the rest of the seeds listed above can be viewed on Google Images.



Items of special note:

- Ten of the newly stranded seeds had not been previously recognized as drift seeds (2).
- An intact pod of the African tulip tree floated ashore. The seed of this plant looks like a Quaker Oats' flake embedded in the center of a one inch diameter transparent membrane, is wind disseminated and somewhat reminiscent of a flying-saucer. They are frequently sighted soaring throughout the island.
- Found 6 black *Dioclea wilsonii* seeds, 2 of which had reddish brown hilums.
- Because the cabbage bark tree does not exist on the island, the arrival of an *Andira inermis* seed merited an official entry into the National Tropical Botanical Garden's records; aka seed accession.
- Several male inflorescences of bread fruit were found.
- At Anini Beach on October 22, we harvested 37 *Mucuna gigantea*. Two days later 111 had arrived and on the 28<sup>th</sup>, 45 more for a total of 193 collected from this one beach.
- Finally a puzzle fruit seed arrived; a most prized seed that was worth the wait.
- The *Cerbera* fruit was an exceptional find because the mesocarp/seed, devoid of its fleshy portion is generally found. Refer to Figure 22, Gunn and Dennis *World Guide*, page 77. In 2004 we found three of these seeds. All parts of the plant contain cerberin and it is highly concentrated in the seed. Cerberin is a potent poison and has been implicated in over 6,000 homicides/suicides in a ten-year period in India.

As for wrack debris, generally the beaches were extremely clean. But at times of very heavy surf, items were washed ashore. For example: beautiful coral, exotic shells, a cow hoof, 20-inch squid, 20-inch octopus, lobster, lobster tails, 5 true seabeads (hair scrunches), 3 long-liners, 3 *Polyporus* mushrooms, ocean sponge, 2 praying mantis egg cases, giant crab, Chinese wormwood and an antique 100 ml pharmaceutical bottle for injection with an authentic tin seal.

Beach garbage versus drift disseminules, you be the judge—items frequently encountered were soybean pods, pummelo, starfruit, avocado, pineapple, rambutan, pistachio, peanut, dragon’s eye and lychee. Kauaians appear to have a propensity to feast on rambutan, dragon’s eye and lychee, which were sold by roadside venders and in market places. Steamed soybeans in the pod and a wet (steam & water) version of peanuts were also readily available. Although lychee nuts have been previously established as drift seeds, they were “El Sinko” in floatation tests.

Be forewarned, seabeaning can be dangerous to one’s health. On this sunny day, we decided a visit to Kauai Beach was in order. Kauai Beach is located just beyond the luxurious Hilton Kauai Beach Resort. Because of the extremely coarse sand, it is quite difficult to canvass this strip because with each step the sand gives way, impeding forward progress. I remained on the upper ridge while Carol ventured to the lower water’s edge with her eyes firmly glued to the existing meager wrack. I’m certain I glanced at the shoreline and noted nothing unusual, just the same old rocks jutting out of the water and sand. We were separated by about 80 feet and fortunately did glance her way again and spontaneously bellowed her name and No! No! No!. She



was but two-baby steps from brushing against two elephant-sized creatures. (See picture, note juxtaposition of rocks). Possibly for the first time in her life, she reacted without question, shifted her direction and ever-so-slowly stepped out of harm’s way. Can you believe it? She was about to have an encounter with a 600-pound female monk seal along with her equally large traveling companion which were sunbathing and napping. The Hawaiian name for this mammal is ilio-o-holo-i-ka-uana, which roughly translates to “dog that runs in rough water.” From a safe distance a click of the camera shutter concluded a near seabeaning misadventure. Verrry scarry! “In some instances, the obvious is nearly invisible,” a most appropriate proverb by Navillus.

## References

1. Sullivan,C.J., T.Flynn and G.Sullivan. 2006. Stranded Fruits, Seeds and Other Drift on Kauai Beaches. *The Drifting Seed* 12(2):7-9.
2. Sullivan,C.J., J.Williams and G.Sullivan. 2008. A World of Drift Seeds. *The Drifting Seed*. 14(2): 5-10.

**Fourteenth Annual International Sea-Bean Symposium and Beachcombers' Festival**  
Cocoa Beach Public Library—550 North Brevard Avenue, Cocoa Beach, Florida 32931  
**Open Free To The Public, October 16<sup>th</sup> & 17<sup>th</sup>, 2009**  
**Schedule of Events\***

Through the weekend: Sea-bean collections and displays, experts, sea-bean polishing, the famous Bean-O-Matic, jewelry, T-shirts, slide-shows, speakers, books, authors, international guests, raffle and contests (including the ever popular “ODD-BEAN” contest, and the Saturday morning “BEAN-A-THON” beachcombing bonanza!).

We are pleased to announce that our very own Dr. Curtis Ebbesmeyer will be attending the Symposium—this year with his newly published book *Flotsametrics and the Floating World*. Curt will be this year's keynote speaker on Saturday evening and he'll be available all weekend long to sign books and chat about his life as an oceanographer.

Natural history writers and books will be available through the weekend. Krieger Publishing Company will be pleased to once again present *Sea-Beans from the Tropics: A Collector's Guide to Sea-Beans and Other Tropical Drift on Atlantic Shores*, by Perry/Dennis (2003). Ed Perry will be on-hand to sign copies. Krieger will also have the reprint edition of the *World Guide to Tropical Drift Seeds and Fruits*. Blair and Dawn Witherington are the authors of *Florida's Living Beaches* (Pineapple Press, 2007) which is a guide to anything and everything you may encounter on Florida's beaches, featuring not only sea-beans, but also shells, fish, plants, birds, and even the “green flash!” Blair and Dawn will be at the Symposium with copies of their book. The ever-popular *The Little Book of Sea-Beans* will also be available. Jim Angy, Marge Bell and Matt MacQueen of Still Nature Productions will be offering their digital books and their new *Beach Basics*. This year we will again also make available for sale Cathie Katz' beautifully written and illustrated *The Nature of Florida's.....series*.

Thursday, October 15<sup>th</sup> (3-5pm)

Everyone is invited to the main conference room at the Cocoa Beach Public Library for an informal get-together and introduction, discussion of symposium plans, and to set up displays for the weekend. We need lots of help setting up tables, chairs, and displays, so please feel free to donate time and suggestions. At 6pm those interested can meet at Roberto's Little Havana Restaurant (1/2 mile south of the library at 26 N. Orlando Ave.—this place has GREAT Cuban food, and has become a Symposium tradition).

Friday, October 16<sup>th</sup> (9am-5pm)

Displays and collections open to the public all day, free, from 9am to 5pm. Enter your seeds for the ODD-BEAN contest (see 17th).  
11 to 11:45am: *Beginners' Beachwalking* (slide show) by Sebastian Inlet State Park Ranger Ed Perry.  
2 to 3 pm: *The Sea Turtle Emergency Response Program* (slide show) by Ann Zscheile. What to do when you find a sick sea turtle.  
5pm: The library closes; meet for dinner at Anacapri (This great restaurant is just east of the library in walking distance).

Saturday, October 17<sup>th</sup> (8am-9pm)

Displays and collections open to the public all day, free, from 9am to 9pm. Enter your seeds for the ODD-BEAN contest (see 4:30).  
8:00 to 10:00am: Bean-A-Thon 2009—You are on your own; don't come to the library first if you participate. Collect sea-beans and or toys/trash/sea-glass on any beach between Canaveral National Seashore and Sebastian Inlet. You **MUST** have your beans/toys/sea-glass at the library by 10:30am. Contest is judged/tallied per individual effort in the 2hr. time frame, please. No doubling-up.  
9:00am: Library opens.  
10:30 to Noon: Judges will tally Bean-A-Thon entries outside in front of the library (awards at 7pm that night).  
1:00 to 2:00 pm: *A Sea-bean's Journey* from where, with who do they travel?—slide presentation by Dr. Blair Witherington  
3 to 4pm: **GROUP PICTURE OUTSIDE THE LIBRARY! Be in it! Bring your camera!** photos by Jim Angy  
4:30pm: ODD-BEAN contest judging (for entries submitted all through the weekend). In a baggie with your name, address/phone number place your oddest sea heart, oddest hamburger bean, and oddest nickernut from an existing sea-bean collection. “Oddness” will be determined by the judges. These entries **DO NOT** have to be found in the Saturday morning Bean-A-Thon. Please enter!!!!  
**Dinner Break: 5:00pm to 7pm:** Tables and displays will be taken down in main room in preparation for the keynote presentation.  
7:00pm: Prompt! Bean-A-Thon and contest awards and certificates presented. Raffle winners chosen.  
7:45 to 8:45pm: **Keynote speaker** Dr. Curtis Ebbesmeyer, *The Origins of Florida Flotsam*— 9pm: Library closes for Symposium.

Sunday, October 18<sup>th</sup> (9-11am)

Take down displays; small business meeting to discuss and schedule dates/help for next year's symposium.

\*October is still HURRICANE SEASON in Florida, so our schedule is at the mercy of the powers beyond our control. Hurricanes are wonderful for beaning, but can be dangerous for beachwalkers. Our beachcombing and Symposium activities may be cancelled because of severe weather, in which case we'll follow evacuation procedures to the mainland. Hurricane information will be available at your hotel and at the library.

## Travel and Hotel Information for Symposium 2009 in Cocoa Beach

Cocoa Beach is about an hour drive from Orlando International Airport.

La Quinta: <http://laquinta.com/lq/properties/propertyProfile.do?ident=LQ622&propId=622>

Luna Sea: <http://www.lunaseacocoabeach.com/reservations.php>

Pelican Landing: <http://www.angelfire.com/on2/pelicanlandingresort/main.html>

South Beach Inn: <http://www.southbeachinn.com/accommodations.htm>

Anthony's On The Beach - 3499 S. Atlantic Ave., Cocoa Beach. 783-9892

Beach Island Resort - 1125 S. Atlantic Ave., Cocoa Beach. 784-5720

Beach Place - 1445 S. Atlantic Ave., Cocoa Beach. 783-4045

Crawford's Cocoa Cabanas - 1901 S. Atlantic Ave., Cocoa Beach. 799-0307

Sand Dollar - 1465 S. Atlantic Ave., Cocoa Beach. 783-8628

And finally, here's a link to a list of lots of local lodging. <http://cocoabeach.com/lodging.html>



### Sea-Bean T-Shirt for 2009

100 % cotton shirt

\*all shirts are a \$20 donation each\*

T-shirts are available in men's (M—3XL) or ladies' tanks and tees (S—XL).

► available at the **14<sup>th</sup> Annual Sea-Bean Symposium and Beachcombers' Festival**, Cocoa Beach, Florida ◀

(or to order through the mail write to Ed Perry, *c/o The Drifting Seed* newsletter,

P.O. Box 510366 Melbourne Beach, Florida 32951, USA—only while supplies last.

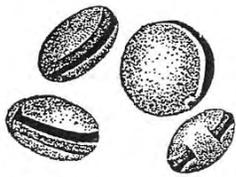
Add \$3.00 per item to cover mailing costs, \$6.00/overseas, state the size and style of the shirts you desire)

Make checks payable to: The Drifting Seed

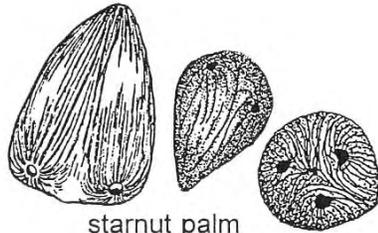
This year's T-shirt again features the artwork of our own Nan Rhodes with her ever popular sea-bean characters "Dancing with the Shells"!

Simple Guide to Common Drift Seeds

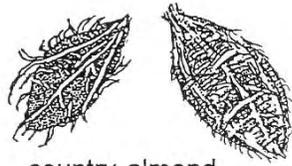
(Illustrations by Cathie Katz and Pamela J. Paradine)



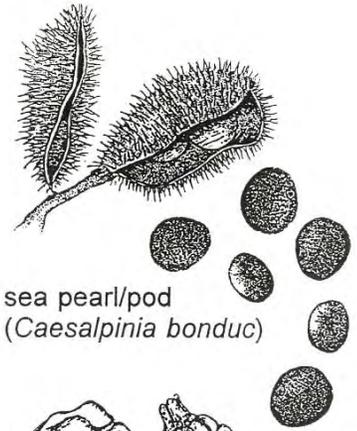
hamburger bean  
(*Mucuna* spp.)



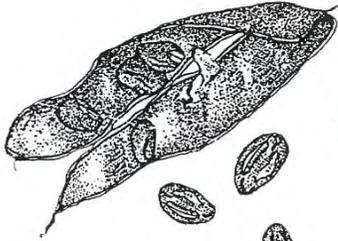
starnut palm  
(*Astrocaryum* spp.)



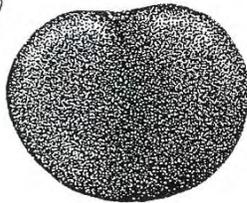
country almond  
(*Terminalia catappa*)



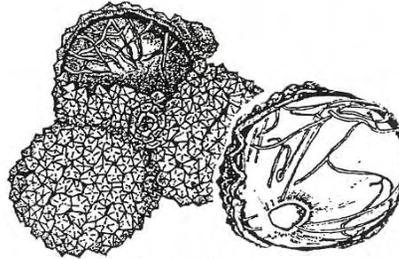
sea pearl/pod  
(*Caesalpinia bonduc*)



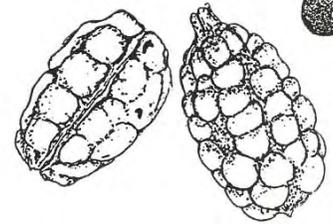
bay bean/pod  
(*Canavalia rosea*)



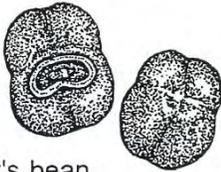
sea heart  
(*Entada gigas*)



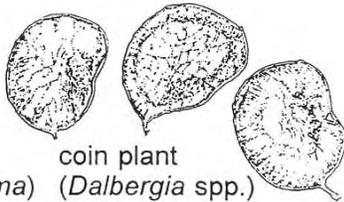
golfball/pod  
(*Manicaria saccifera*)



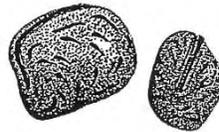
hand grenade  
(*Sacoglottis amazonica*)



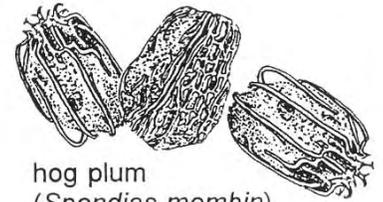
Mary's bean  
(*Merremia discoidesperma*)



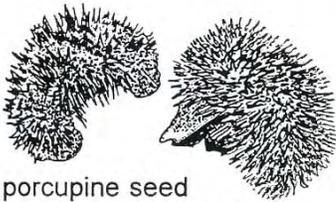
coin plant  
(*Dalbergia* spp.)



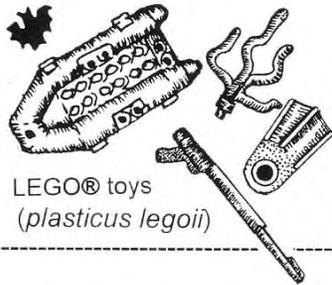
sea purse  
(*Dioclea reflexa*)



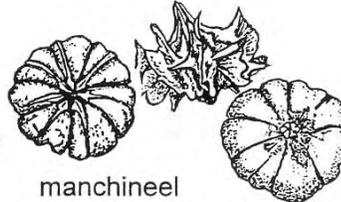
hog plum  
(*Spondias mombin*)



porcupine seed  
(*Caryocar microcarpum*)



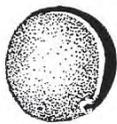
LEGO® toys  
(*plasticus legoii*)



manchineel  
(*Hippomane mancinella*)

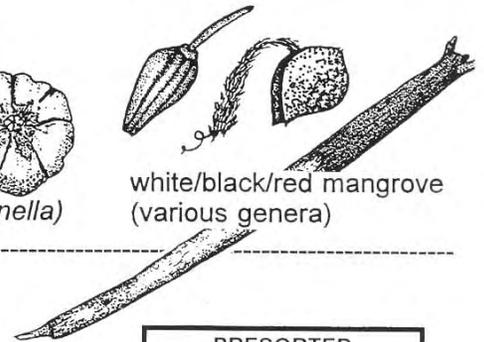
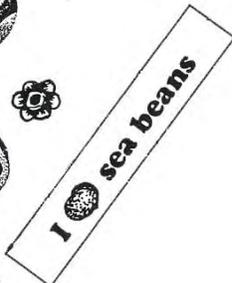


white/black/red mangrove  
(various genera)



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