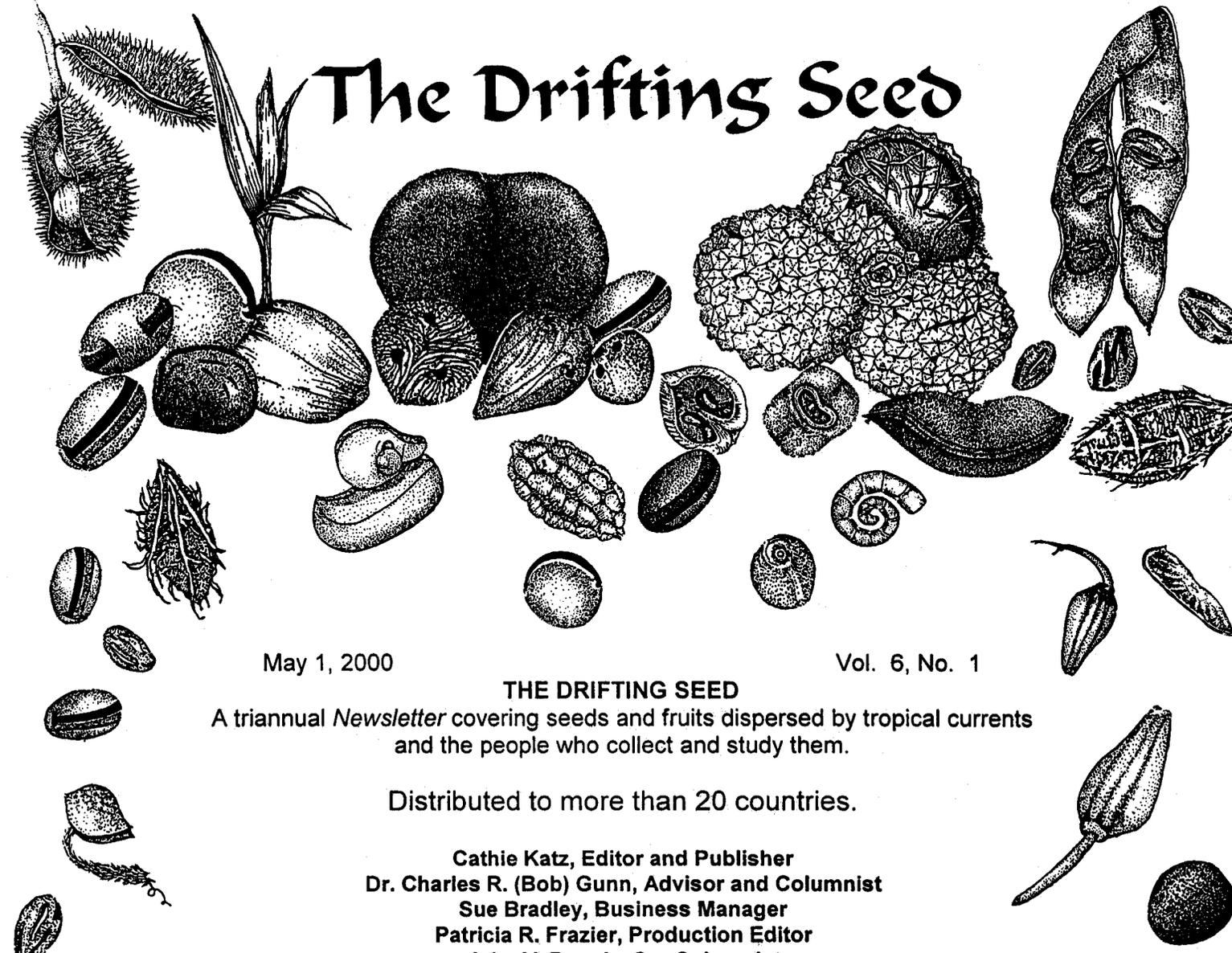


The Drifting Seed



May 1, 2000

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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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This shortened newsletter is being mailed as an interim issue...the excellent quality and content of the articles this month more than compensate for the diminished quantity. The next issue (in September) will return to its normal eccentric format and will include Symposium 2000 information.

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by Blair Witherington
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Mark your calendars:

Sea-Bean Symposium 2000 will be October 12 - 15, 2000.

(Open to the public October 13-14)
at the Cocoa Beach Public Library, Cocoa Beach, Florida

In March we received a letter from 14-year old **Robby Gray** who has been cruising around the world for several years with his parents on their family sailboat. Robby included an acrostic poem called "Sea Beans" which describes our "nomads of the sea"...

Sea beans are restless creatures
Ever drifting in the swift currents
Always arriving on some exotic beach

Beckoned up from the depths of the rain forest
Exploring uncharted islands
Asleep in their tough shells ready to spring out at the touch of damp soil
Nomads of the sea
Searching always for unknown beaches.
- Robby Gray

The following was sent to us in January by dedicated Drifter **Joe Hartman** from **Micanopy, Florida ...**
Early Symptoms of Sea Bean Psychoses, Neuroses, and Interminable Addiction

1. Stubbing your right big toe against a hidden rock while playing seabean soccer, but not giving a second thought as you swing into another pile of wrack with your left foot.
2. Saying to yourself, "fifteen more minutes, max" for the second time, knowing you're already a half hour late for wherever you were supposed to be.
3. Thinking that, while you used to be the only beachcomber looking for seabeans, now every one on the beach is a potential competitor for "your" catch of the day.
4. Knowing that, while you used to be the only beachcomber looking for seabeans, now every one on the beach is a potential competitor for "your" catch of the day.
5. Feeling like, although life used to be pretty good, true happiness and success won't be yours until you've found a Mary's bean.**
6. Knowing that this newfound addiction can only get worse as your collection grows.
7. Thinking that you probably just walked past the "bean of the day" and are stuck in a quandary, trying to decide whether to go back or proceed in the same direction down the beach.
8. Worrying if maybe your eyes are failing you when you come home without any new "prizes" to brag about.
9. Becoming convinced that one of these days you'll actually follow through with the "looks like dog poop, feels like dog poop, smells like dog poop, tastes like dog poop, thank goodness I didn't step in it" joke.
10. Waking up to the sound of a distant voice calling, "Find me...find me. I'm stranded..." then trying to appear unhurried as you rush to the beach on a seabean rescue mission.

**The day after I "spilled the beans," acknowledging my newfound affliction/addiction, what should I find?— you guessed it — my first Mary's bean. Am I in seabean heaven? You betcha. Have I found true happiness? Hardly.... maybe after I uncover that elusive reclusive giant hamburger.

Book Review

by Bob Gunn

Hiroki Nakanishi, 1999. Introduction to Driftlogy. Heibonsha Co., Tokyo, Japan. ISBN4-582-85025-1. Price unknown. Text entirely in Japanese.

For additional details about his pocket-size field guide, write to the author:

Hiroki Nakanishi
Nagasaki Women's Junior College
666 Yayoi-machi
Nagasaki 850-8512
JAPAN

The chapters are as follows:

1. Visiting sea-shore;
2. From driftage to science;
3. Driftage and human;
4. Drift of plants; 5. Drift of animals;
6. Driftage and ocean pollution;
7. Japanese coast and its nature;
8. Destruction of coast and its improvement;
and literature citations.

Photographs and drawings are scattered throughout the text. Included are drawings of tropical drift disseminules. Thank you Hiroki for this contribution to our worldwide knowledge of tropical drift disseminules.

Journey of Tropical Drift Disseminules from the Neotropics to their Ultimate Fate

by Bob Gunn

The Gulf Stream brings endless numbers of neotropical drift disseminules as far North as Norway. These standings on European beaches that are served by the Gulf Stream are well documented as are the strandings along the Atlantic coast of the United States. The Gulf Stream moves billions and billions of disseminules. Yet, most of them do not reach shore. For various reasons most sink to the bottom of the ocean. Perhaps there are some that enter an eastward gyre of the Gulf Stream and arrive a thousand miles from land in a golden carpet of seaweed, the Sargasso Sea.

The mysterious Sargasso Sea, a two-million square mile lens of warm, dark-blue water in the middle of the Atlantic Ocean, is the bane of sailors and the fodder for the writers of fiction. Genthe (1999) presented an excellent article on the Sargasso Sea, but alas he does not mention tropical drift disseminules. For us the Sargasso Sea is still a mystery. Does it harbor tropical drift disseminules? We know that the Puerto Rico Trench (Gunn, Dennis, and Paradine, 1976) is littered with these seeds and fruit. Is the bottom of the Sargasso Sea also littered with sunken disseminules?

References

Genthe, H. 1999. The Sargasso Sea. Smithsonian :83-93.

Gunn, C.R., J.V. Dennis, Sr., and P.J. Paradine. World Guide to Tropical Drift Seeds and Fruit. cf. pp. 13-15. Quadrangle/The New York Times Book. Co., New York.

1999 Symposium Review

by Pete Zies
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The hurricanes that Cathie has always planned for finally came just before this year's symposium. Dennis, Floyd, and Irene each took their toll on Brevard County's beaches, and played their part in interrupting the travel of our seeds to them. Seeds were still found, but the armadas did not arrive, and many of our favorite "keepers" were rare or completely absent. Similarly, some of our favorite key figures, such as Dr. Gunn and Ruth Smith, were unable to attend, but hundreds of participants still crowded our new venue.

This year's program was set to start on Thursday for symposium lecturers, but folks like Curt Ebbesmeyer and Cathy Yow "drifted in" early. A wonderful article in the paper by Beth Sinclair the day before the symposium started helped pack the showroom all weekend long. Thursday's plan called for beachcombing and socializing mostly, but Curt Ebbesmeyer presented lectures to school children and was rewarded with smiles and renewed interest in his LEGO® toys.

Friday began at 10:00 a.m. at the new Cocoa Beach Public Library. In line with our efforts to stay socially conscious, space was provided to the Surfrider Foundation to help spread the word about coastal conservation and other issues. Ed Perry had several plants grown from sea beans on display, along with his wonderful sea beans wreaths and cornucopias. Curt Ebbesmeyer put on his man-made drift material display, and this year was able to include a log that had been beachcombed with a Last Will and Testament carved into it.

Cathy Yow presented an extensive display of jewelry crafting materials, which provided inspiration for the participants in this year's new sea bean jewelry competition. One of the busiest displays was the Krieger Publications booth, where the newly reprinted *World Guide to Tropical Drift Seeds and Fruits* was on sale. John Dennis spent much of the symposium signing books, and the whole advance run of books was sold out by the symposium's end. Other displays included first time exhibiter Mike Stewart's collection of his own style of sea bean jewelry and seeds, as well as my display of sea beans from Brevard's beaches. Jim Angy brightened up the conference hall with his beautiful photos again, and lots of interest was noted for Cathie's books, T-shirts and related items.

The first event for Friday was Ed Perry's lecture on basic beachcombing, and his beautiful slides of many of the sea bean plants enlivened the lecture for the packed room (extra chairs had to be brought out). Later in the afternoon I gave the Sea Bean identification lecture in preparation for the next day's contest.

Saturday began with the Bean-a-thon, and the 30 competitors were set loose on Brevard beaches being examined that same day by the FEMA (Federal Emergency Management Agency) checking the severe erosion that threatened many beach front properties. Rather than being daunted by the weak wrack and chewed up beach, the participants redoubled their efforts and gathered huge amounts of trash, as well as numerous seeds, with even more species than last year being found.

This year Ed Perry found the most species (42) and was closely followed by Beth Sinclair (40). Numerous rare species were found, such as Mary's Bean, Yellow Flamboyant, Sapote, Ochrosia elliptica, Porcupine Seed, Caryocar glabrum, and Mora species. The Cool Bean Award went to Dick Williams for his "Siamese Twin Mangrove" which was two Red Mangrove seedlings that had grown around each other in a spiral pattern. Bill Eastlake's trip from (Missouri) seems to have been rewarding because he found a number of rare seeds including those needed to win the Grand Slam Award. Our Child's Award went to a very special youngster named Zack Biddulph. He was only eight and has Down's Syndrome, but still joined in the contest and was excited about the seeds and toy soldier he found.

1999 Symposium Review (continued)

Along with Zack's toy soldier were many other toys, light sticks, plastic items, garbage and even a message from a German boy in a bottle. From amongst these Cindi Fontana was awarded the Non-Bean Award for an "abstract piece" composed of a rusted spray can enveloped in its own dried foam. Curt saw this as a commentary on how our society is being enveloped by our own wastes. Two late comers to the symposium still managed to capture awards as Dave Williams won the Largest Hamburger Bean Award for his gargantuan *Mucuna fawcetti*, while Rondall Owens received the Smallest Sea Heart Award for a lilliputian specimen hardly larger than a nickel.

Seeds were brought in until 10:30 and grading went on until noon, but after lunch the conference hall was packed again with interested beaners. We were surprised and pleased to see that these included Dr. Wayne Armstrong and Elaine Collins, who traveled all the way from California to see the show. The Bean-o-matic saw heavy use as many people sought to identify their finds, and the *World Guide* reprints got thoroughly thumbed.

Curt Ebbesmeyer's talk about the man-made floating debris was the center piece of the afternoon, and his slide show included many items that enchanted the audience. After more collection display, and a dinner break, the awards were presented. Along with those already mentioned, Ed Perry received a Sea Heart Trophy for all of the wonderful sea bean things he has done over the past year. Curt Ebbesmeyer was presented with a special certificate for the great contributions he has made by speaking at Brevard County Schools and local organizations. I was also given an award for curating Dr. Gunn's collection. The door prizes were passed out at this point and then the panel discussion was begun.

This year the panel included Ed Perry, Cathy Yow, Curt Ebbesmeyer, Dr. George Maul from Florida Tech., and myself. Our general topic was "What has happened to our Seeds?" Dr. Maul brought his specialized knowledge about the Gulf Stream to bear on this issue, and advised that the Gulf Stream is very plastic, changing shape and path on an almost daily basis. He provided the useful information that on our beaches southerly winds would tend to push seeds offshore while northerly winds would push them onshore. The issue of transatlantic and transpacific drift was raised, and while I pointed out that it was virtually non-existent, Curt was quick to point out that drift bottle studies have shown that 1% will make a transatlantic drift from Africa to the U.S., and 2% will make the transpacific drift from Japan to the west coast. (isn't that what I originally said?) The old adage of "one man's trash is another man's treasure" was never truer since my reference to the loathsome "stuff" (viz.garbage) that mars our beaches was transformed by Curt into wonderful "stuff"(viz.garbage). Even Dr. Maul admitted that this infectious catch phrase had invaded his scientific vocabulary.

This year Sunday was, as usual, another full symposium day. Activities included the Sea Bean Jewelry contest Judging with Cecilia Abbott lending her valuable experience with years of such competitions, and Cathy Yow making the presentations. Many creative pieces were entered and several awards were presented. After that came the slide show presentation and book signing by Debra Frasier. She gave us an inside look into how her books *On the Day You Were Born* and *Out of the Ocean* were conceived and created. Her works mirror the environmentally aware and responsible attitudes our group admires. Her beach book seems to have been custom designed for our beachcombing children, and will certainly help instill in them the love we feel for our beaches.

A business meeting was held by our executive committee with the following results: 1. Donations are critically needed to offset the \$1,500.00 per year cost of printing and distributing our newsletter. 2. We requested that the Cocoa Beach Public Library be our host location again. 3. October 12-15, 2000 will be the dates of next year's Symposium. 4. With the *World Guide* reprint completed, no further publication efforts will be pursued immediately.

As we all headed back to our scattered homes, I thought to myself "You can take the beachcomber off the beach, but you can never get the beach out of the beachcomber!" We've got sand in our veins! See you all next year!

THE LUCKY BEAN
 by John V. Dennis, Sr.
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It would be interesting to find out if the drift seeds and fruits being found on Florida east coast beaches today are more plentiful, less plentiful, or in about the same numbers as they were in past years. Fortunately, it is possible to go back about thirty years to make comparisons. For example, between 1961 and 1969, Robert Mossman, one of the most indefatigable of the Florida sea-beaners, was amassing a huge collection of largely hard-coated leguminous seeds. He was able to announce in October, 1969 that he had just reached his goal of finding his five-thousandth sea-bean! His collection, which was from Palm Beach, was donated to Dr. C. R. Gunn, at the time curator of the U. S. Department of Agriculture seed collection at Beltsville, Maryland. See "The Drifting Seed," vol. 1 (1): 5, for an article by Bob Gunn on Robert Mossman and his collection.

It is safe to say that finding this many sea-hearts, saddle-beans, nickernuts, and true sea-beans in the same time frame on a Florida beach today would be impossible. Not only is there more competition, but one suspects that fewer of these seeds are reaching our beaches.

At the same time that Bob Mossman was busy collecting sea-beans at Palm Beach, Eleanor Miller, another enthusiast, was collecting drift seeds and fruits at Riviera Beach, the next beach to the north of Palm Beach. Better versed on identification than Mossman, she knew the scientific names of 76 species and classified another 28 species as "unknowns." Her total of 104 species for one beach contrasts favorably with the 130 species — both tropical and temperate — that Peter Zies has compiled for the entire east coast of Florida.

In December of 1959, I conducted a tour of Florida east coast beaches from Jacksonville Beach in the north to Key Biscayne, near Miami, in the south. I recorded the drift seeds and fruits I found at each of 28 beaches. The beaches were roughly 20 miles apart and I made my checks along approximately one hundred yards of beach. My findings were as follows:

| Drift Seeds and Fruits: | No. Beaches |
|--------------------------------|--------------------|
| Tropical almond | 20 |
| Sea-coconut | 20 |
| Black mangrove | 17 |
| Hog plum | 17 |
| Manchineel | 12 |
| Red Mangrove | 12 |
| Blister pod | 9 |
| Sea heart | 8 |
| True sea-bean | 6 |
| Nickernut | 5 |
| Non-plant material: | No. Beaches |
| Pumice | 12 |
| Carnauba wax | 10 |

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

Listed below are some of the high counts I had and beaches where these counts were made:

| | |
|-------------------------|-----------|
| <u>New Smyrna Beach</u> | |
| Black Mangrove | 150,000 + |
| <u>Crescent Beach</u> | |
| Black Mangrove | 5,000 + |
| <u>Fort Pierce</u> | |
| Red Mangrove | 5,000 + |
| <u>Palm Beach</u> | |
| Hog plum | 1,400 |
| Red mangrove | 3,000 |
| Sea-coconut | 125 |
| Manchineel | 70 |

I am leaving present day counts to Ed Perry and his column "Beach Bytes." Ed covers Melbourne Beach and so does Cathie Katz, with whom he compares notes. Will their species counts and numbers differ significantly from those of thirty years ago as seen in the preceding pages? There are seasonal differences that need to be taken into consideration and also the effects of hurricanes. Nevertheless, I am hopeful that we will have a clearer picture of what is taking place than we had before we took up this subject in our respective columns.

BEACH BYTES

Beans Past and Present

by Ed Perry

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My friend and co-author, John Dennis, brings up the subject of drift seed frequency, past vs. present, in this issue's featured "The Lucky Bean." With all the mention in recent times of "save the beans," it certainly is a timely subject that holds some scientific merit.

However, can we really make an unbiased, scientific statement about whether or not sea-beans on coastal beaches are increasing, decreasing, or remaining the same? Probably not at this point. Too many factors which we cannot control keep one from making any type of scientific hypothesis. Some of these factors include weather events in the tropics affecting bean input into the oceans, weather affecting stranding of beans, coastal growth and urbanization of beaches, beach contour, frequency of "sea-beaners" (competition on beaches), beachcombers' efforts (time spent on beach), raking of certain beaches, harvesting of seaweed from our oceans, clear cutting of rainforests, and point of origin collection of seeds. Then there are other truly difficult factors to measure such as an individual beachcomber's ability (10% of the anglers catch 90% of the fish!) which can cloud the picture even more. We can now, however, work as a group to keep records over the years and lay down a starting point or base by which more and better comparisons may be made in the future.

It is reasonable to conclude that if fewer beans are being produced or are leaving the tropics today, then fewer beans would likewise be reaching distant shores in the form of drift material. Satellite images taken over time offer hard evidence that land clearing and urbanization of our beans' tropical homes are progressing at an alarming rate. Blowing in with the beans I find here today in Florida are sometimes thousands of pieces of burnt wood. I believe this is the evidence of a distant land in trouble, bringing the proof of slash and burn land clearing in the tropics to those beachcombers on distant shores who are inquisitive and curious enough to see beyond the obvious.

We also learned from Leslie du Toit (*The Drifting Seed*, 5(3):3) that due to over-collecting of *Mucuna* seeds in Costa Rica by both tourists and entrepreneurs that this species is on the verge of extinction in much of its range. But do these impacts at the sea-beans' points of origin really change at all what we as beachcombers see happening thousands of miles away? I think so.

While John Dennis is able to provide us with bean tally records from different Florida beaches during December 1959, it may be possible to make somewhat of a comparison to records I have kept for the last three Decembers. My records come strictly from the beaches in Brevard and Indian River Counties along the east coast of Florida.

December of 1997 saw nothing in the way of newly stranded debris on my beaches. There was however a thick wrack line deposited high on the beach from seasonal onshore winds from the previous October. This provided a good beachcombing opportunity for seabeaners even several months into the year. During this period I was able to find a few keeper seeds in the old wrack, but finds were far from phenomenal. Hours and hours of searching, perhaps as many as 50 hours, produced my first Mary's-bean ever during this time, and only a handful of other seeds like *Mucuna*, *Entada*, and an occasional rare *Dioclea*.

It was the following year in December of 1998 that I experienced my best and most drift seed finds of a lifetime. Other beachcombers all over the east coast of Florida were experiencing similar finds (those at Gumbo Limbo Nature Center in south Florida were "tired of picking them up." (*The Drifting Seed*, 4(3):10). For about 20 hours of beachcombing through the month I was able to make these incredible finds:

| | |
|--------------------|-----|
| <i>Mucuna</i> | 196 |
| <i>Entada</i> | 101 |
| <i>Dioclea</i> | 2 |
| <i>Mary's-bean</i> | 6 |

Beans Past and Present by Ed Perry (continued)

Other seeds found at this time included candlenuts, screw pine, sandbox tree (*Hura*), nutmeg, gray nickars, walnuts, and various palm seeds. I attributed these great finds of 1998 and 1999 to a “bulge of beans” floating the currents from Hurricane Mitch’s devastation on the tropics in Central America (*The Drifting Seed*, 5(2): 10-11).

December of 1999 brought another dry spell to the east coast of Florida. Except for a few beans left behind in wrack that washed in from September through November, no beans were found.

So, if it were not for the “bulge of beans” that I experienced in December of 1998, the modern bean counts I tallied would vary drastically from those of John’s back in December of 1959. All of us at one time or another have heard similar stories to Rob Reininger’s (*The Drifting Seed*, 5(1): 14) of an elderly gentleman remembering being able to pick up “buckets of hamburger beans” at one time many years ago along the coast of Florida. Though there are many factors that could be attributing to modern day low counts of sea-beans being found on Florida beaches, it would be safe to say that there are far less leaving the forests than there once were, contributing to many fewer reaching beaches.

Aside from the hundreds of Mary’s-beans that were blown in to Florida shores during the winter of 1998 and spring of 1999, I think that the hard-coated seeds or “keeper” beans are definitely showing in fewer numbers than they once did. Again, collective pressures in their originating lands is probably the culprit, and many of us know who visit the tropics that *Mucuna*, *Dioclea*, *Caesalpinia*, *Entada*, and *Merremia* seeds can all be purchased from street vendors and local tourist shops by the handful or as fashioned into necklaces and other artifacts. Perhaps the opposite is seen of some of the “soft” or fibrous drift seeds like *Terminalia*, or *Spondias* that have an obvious consumptive use by humans.

Like tiny ambassadors from a distant land, for every-less bean that reaches a distant shore, there is perhaps one more beachcomber who grows an interest in these beautiful and curious gems of the rainforests. Sea-beans have never enjoyed such a place in the spotlight as they do today. There truly has been a renewed interest of phenomenal proportions on this subject, both here and abroad.

Life Rafts and Little Turtles

by

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Owing to the persistence of tropical winds from the east, a great mass of water flows across the equatorial Atlantic, through the Caribbean Sea, and into the Gulf of Mexico. The pressure from this flow raises the sea level in the Gulf and is the force behind a great stream that squirts out of the Gulf through the Straits of Florida. As this current rounds the peninsula and glides over the shelf east of Florida it joins a flow from south of the Bahamas and an additional circulation that rounds the mid-Atlantic Sargasso Sea. It is the Gulf Stream and it is the most massive persistent flow of water on the planet.

The Gulf Stream is a remarkable biological feature. My personal interest in this current is in the way it carries travelers ... mostly, sea turtles. I have spent considerable time tracking newly hatched turtles as they swim from Florida beaches and studying post-hatchling turtles in the collections of Sargassum and flotsam (floating debris) that line up near the Florida side of the Gulf Stream. Yet, I also marvel at the other travelers of the Stream — those clearly adapted to life at the surface of the open ocean and those that are cast adrift by chance and are testimony to the diverse terrestrial ecosystems far upstream. They are all part of a fascinating assemblage of floating life called the Sargassum community.

The Sargassum community is named for the brown algae (two species are common) that make up much of the floating material that circles the Atlantic. The community, like Sargassum itself, has its evolutionary origins in a benthic (bottom-of-the-sea) environment. In the Sargassum community there is an assemblage of animals that are closely related to the sea critters one might find hiding in the algae growing on a rock beneath shallow coastal waters. Yet the Sargassum community harbors unique, subtle variants of these benthic animals, many of which are named for the alga in which they live: the Sargassum snail, Sargassum slug, Sargassum crab, Sargassum shrimp, Sargassum pipefish, and Sargassum (angler)fish ... nicely prosaic names that were probably not given by poets.

It is a shame that many know Sargassum only as the brown, rotting clumps that form much of the wrack along our beaches. At sea, Sargassum is glorious. There the alga stands out as a bright sunlit gold against a backdrop of deep Gulf Stream blue. And around the Sargassum, life flourishes. Well over one hundred species of organisms are found closely dependent upon Sargassum and many more make occasional visits.

Young loggerhead sea turtles depend greatly on the life around floating Sargassum. My study of this life has centered on the part of the Sargassum community that little loggerheads find tasty — which is apparently almost all of it. I have found more than a hundred identifiable items from the recently eaten meals of loggerheads captured in Gulf Stream Sargassum¹. These items include many of the small animals that grow clinging to or adhering to Sargassum, and to drift seeds, wood, plastic or anything else that floats on the open ocean. Sea bean collectors know these animals as the crust, fuzz, and goo that cover many a freshly stranded sea bean.

Stranded drifters are often partially covered by the skeletal remains of a bryozoan called *Membranipora* which appears as a thin, lacy, perforated crust. In life, the lacy perforations are compartments that each house a tentacled animal. Most of the bits of Sargassum that young loggerheads eat have *Membranipora* encrusting them. Also common to fresh sea beans are the transparent hair-like tubes of hydroids, which are related to corals but do not have a hard skeleton. In the Sargassum community there are many hydroid species that grow in branching or networked colonies that lightly cover the flotsam. Little loggerheads love hydroids. Other loggerhead treats that are likely to be found on a drifting seed include sea spiders (pycnogonids, related but not a true spider), copepods, Sargassum snails (*Litiopa*), and a curly-tubed worm called *Spirorbis*.

¹The turtles are scooped up with a net, and part of their stomach and gullet contents are washed out with a lavage of sea water. After this sampling and a few other mild indignities the turtles are released unharmed back into their patch of Sargassum.

Life Rafts and Little Turtles by Blair Witherington, Ph.D. (continued)

In a way, the young loggerheads that have swum from Florida beaches are a lot like drift seeds. Each floats, can fit in the palm of one's hand, and is a rider on the great ocean carousel known as the North Atlantic Gyre. The gyre flows with the Gulf Stream northward and then to the east as it bends around an area of relatively stationary water called the Sargasso Sea. It is an area of the Atlantic that is often mentioned when little loggerheads, drift seeds, and flotsam are discussed. The Sargasso Sea is the greatest collector of ocean drifters.

The Sargasso Sea is saltier, generally warmer, and less productive than the surrounding Atlantic. It is west of center in the North Atlantic and is at the eye of the clockwise swirling currents that make up the gyre. Although the Sargasso Sea is famed for its abundance of floating Sargassum, the productivity of the alga there is low. Much of the Sargassum in the Sargasso Sea comes from elsewhere and in this way the alga is like the vast array of other floating stuff that ends up in the weedy Sea.

Sadly, a large part of the flotsam that concentrates within the Sargasso Sea is tar, which makes up approximately one hundred thousand tons of the floating material there ... a density greater than any other region of the Atlantic. The concentration of both tar and plastics within certain oceanographic features of the open ocean is much higher than many suspect. The notion that the vastness of the oceans dilutes the floating garbage we produce is far from true. The reality is that this harmful flotsam concentrates in the very surface waters where pelagic life abounds... and where little turtles make a living. Although it was initially startling to me, it is now of no surprise that roughly half of the young loggerheads I capture show evidence of eating tar or plastic, and that nearly all of those found dead and washed ashore have plastic and tar in their stomachs. It seems clear that in the evolution of sea turtle feeding behavior there was little selection against nibbling on anything that happened to float by. Historically, such indiscriminate feeding would typically gain a little turtle something edible or perhaps an innocuous scrap of debris on which something edible might be growing. Today, turtles naive to the industrial world take in shards of fragmented plastics and pellets of tar that block their intestines and gum their mouths shut.

The Gulf Stream, its gyre, and all the travelers within, whether disturbing or wondrous, provide to us a snapshot of our world. There was once a time when plastics on ocean waters were far rarer than tropical seeds, but now the wrappings and containers of almost everything we consume spill out of our control and float upon our oceans far more commonly than the seeds of the worlds disappearing tropical forests. Yet, on all these floating things, pelagic animals cling, and although the synthetic, indigestible portion of this flotsam is certainly harmful, I can't help but marvel at the resiliency of the community that takes it in.

Like much of the other material floating on the open ocean, sea beans are life rafts for a host of animals that would be naked without them. It is easy to imagine that each sea bean discovered on a beach was host to generations of diverse organisms during its long drift from the tropics. In that span of time the seed would have been all that kept its riders from sinking into oblivion. And during the trip the seed just might have been visited by a young loggerhead or two who eagerly plucked at a few of its riders. These thoughts often come to my mind when I hold a sea bean and stare at the ocean ... thoughts of intertwined fates of sea turtles, tropical seeds, and humans and of the tiny planet on which we all ride.

NEWS AND NOTES

... **Birgit in Augsburg, Germany, describes what happened to her sea-bean from Costa Rica...**

“Grüße aus Deutschland!. I just wanted to write a quick message to say that the big seed [from] Costa Rica exploded after two days in my room here in Augsburg. It exploded with some force, and it's now lying in hundreds of pieces all around my room!” -Birgit Korner, Augsburg [Eds note: Birgit wants to know if this has ever happened to anyone before. Birgit's seed is about the size of a baseball, off white, and has the shape of a pumpkin but flatter with well-defined vertical ridges.]

For her sea-bean science project **Stephanie Alder in Titusville, Florida** won an Outstanding Recognition Award from the Directors and Science Teachers of the Brevard Mainland Regional Science and Engineering Fair. Congratulations, Stephanie. We hope to see your project at the Sea-Bean Symposium in October!

From **Gary Bremen**, park ranger at **Biscayne National Park, Florida**: “I'm intrigued by all the talk about excitement over ‘the first sea beans of the season.’ I guess I never paid much attention to when I find them. In my guided walks on Boca Chita Key in Biscayne National Park, we have been finding a lot more *Mucuna* and Sea Hearts lately, but no *Saccoglottus*, though they are normally quite common. One visitor found a starnut like I'd never seen before, elongated with a point at one end, slightly crooked. It looks for all the world like someone pulled off a hawk's beak! Sargassum has been extremely heavy over the past two weeks. Have there been any reports of LEGOs® in Florida? Love your site....hope to attend the Symposium in October.”

Gerhard C. Cadée of the **Netherlands Institute for Sea Research in Texel, the Netherlands** sent a copy of the January 2000 publication **Het Zeepaard** (The Seahorse) with his article about the golfball bean (*Manicaria saccifera*) found off the Netherlands' coast (on Texel) by **Edwin van Egmond**. The article includes clear photos of the “Golfbalnoot,” as well as photos of other seeds found there: sea heart, ivory nut, hamburger, sea purse, and country almond.

Also from Gerhard Cadée, in early April ... Gerhard departed Texel on the research ship *Pelagia* for a trip around Africa. Gerhard wrote, “I will start at the Seychelles and take a few days to collect driftseeds (I have been there before in 1993 collecting and may be have now enough for a note in the Drifting Seed newsletter.” We hope to hear about Gerhard's African trip in a future newsletter!

We are thrilled to welcome new Drifter **Peter Hitchins** from **Cousine Island, Seychelles**. We looking forward to receiving current information from the home of the famous coco-de-mer!

From **Eileen Lahart**: “Enjoyed meeting you at your talk at the **Environmental Learning Center [in Wabasso, Florida]** three weeks ago. I now tramp the beach with new eyes... Yesterday, a mile south of Disney in Wabasso, I found a brown glass bottle five inches high with a diameter of an inch and a half. The metal cap which was/is black has an oval on it imprinted with three lines. The top line seems to be in Chinese characters. The middle line is in some Cyrillic alphabet. The bottom line says “drink”. Do you suppose this was tossed in the water off Miami, or should I save it ? I doubt that I will follow the direction on line 3 however.” - Eileen Lahart vlahart@lyrick.com

Judy Machorek from Melbourne Beach, Florida spent a month in Kanai, Hawaii and found nine hamburger beans -- her first sea-beans!

From **Tom Nicholls** and **Laura Howell** in **Fort Lauderdale, Florida**: “This winter did not bring many beans to the Ft. Lauderdale beaches, but we find many other things to collect. Plastic Army men, critters, sunglasses, unidentified small plastic objects, toys, tags, toothbrushes, (yes, perhaps we have the most extensive collection of used drift toothbrushes in the state). We also like the colorful cigarette lighters with advertising from around the world. All of these drift items are ‘gifts from the sea.’ Much to the displeasure of my wife, these treasures are displayed on monofilament line hanging on our fence. (Away from the view of the public of course). The ‘why’ collect these things is that a collector will collect what there is to collect.”

NEWS AND NOTES (continued)

Nice to hear from Drifter **Mark Bartlett** (seabeam@mac.com) in **Sarasota, Florida**: “Fairchild Tropical Gardens is as close to nirvana as this plant lover has ever gotten. Among the hundreds, if not thousands, of tropical plants and trees in the Gardens are signs of new life waiting to burst forth onto the scene: Seeds! As a rule, I collect these treasures only when they are on the ground, and at the Gardens this year I noticed lots of seeds had fallen into the water from their host trees and ³drifted² onto the shores of the many small fresh water lakes which dot the park. Some of these seeds had actually germinated, and I was amazed to see seedlings of *Heritiera*, *Calophyllum* and *Pachira* growing along the shorelines. A small *Pandanus* had also sprouted, and there were probably other species as well. My wife, Laura, and sister, Gregg, didn't know what to make of my excitement over these finds, but they understand my passion for seeds, plants and trees, and they humor me and let me enjoy my hobby. Laura has even threatened to put a leash on me to keep me in sight whenever we go to a Botanical Park, because I run from tree to tree, excitedly calling their names as I discover them! I really get excited about seeing an exotic tree in person for the first time - especially trees and vines that produce the drift seeds we usually find at the beach. It's especially nice to find exotic, tropical drift seeds so close to their parent trees ... in Florida!”

From our Drifting Seed Correspondent **David Williams** in **Costa Rica** March 1: “... right now I'm in the town of Quepos on the Pacific side of Costa Rica. I am in the first of three weeks here. Sea-beaning here has been mas y minos. I have found lots more of the things that are sometimes hard to find in Florida, like calabash and really big (baseball sized) crabwoods, along with lots of coral beans (the red ones), but no shinys - all corkies. Hope to run into some of those Mary's Bean treasure troves. Surfed Playa Tamarindo-WOW! Awesome. Monteverde Cloud Forest is beautiful. I've grown tired of snapping photos of monkeys and toucans.”

...and more from David on March 8: “The Tortugero National Park is one of the coolest places I've been so far. It is on the Caribbean side of Costa Rica close to Nicaragua. You can only access it by a two-hour boat ride through (literally, I saw them) crocodile-infested waters. The national park is a lush rainforest with a huge network of fresh and brackish water canals. The canals were originally made by logging companies who logged, but didn't clear-cut the area years ago. The result is an amazing labyrinth of palms, hardwoods, bamboo, shrubs and lush vines growing right down to the water. Bloodwoods(a tree), *Dioclea*, and nicker beans hang over the water. Sea coconuts are floating all around and there are so many seed pods that I have no idea what they are. The crocs can reach 20 feet and the caiman only about 4. I saw hundreds of birds, reptiles, amphibians, mammals, fish and insects. They all seemed oblivious to our presence. We went on a night hike and saw gobs of cool stuff. The lodge is set up for eco-tourism and is very primitive but nice. The food is typical "Tico" and very good. The guide stressed that we not swim in the nearby ocean or in the river — River-crocs/ocean-sharks and riptides. The beach was literally COVERED with sea-beans. I guess they may not be technically "sea-beans," but river beans. I have found so many things that are very rare in Florida and things that are so common here that I've never seen in my life. I have more Mary's beans, the odd thing that Rondall and I affectionately call a dog turd bean, royal palm seeds, West Indian locusts, starnuts (all the really big teardrop shaped kind), anchovy pears, woodrose, *Dioclea*, *Mucuna*, sea hearts, and some real funkies. Yes, you would have loved it. I'm illustrating/photographing everything.”

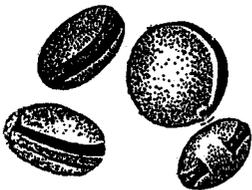
In July, Cathie Katz' latest book ***Nature a Day at a Time: An Uncommon Look at Common Wildlife*** will be available in all major bookstores and through all the internet bookstores (www.Amazon.com, etc).

ISBN# 1-57805-050-2, Hardcover \$20. Published by Sierra Club Books/Random House.

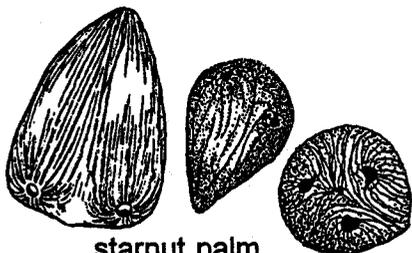
“*Nature a Day at a Time* by Cathie Katz identifies common wildlife from bacteria to weasels, with quotes from science experts and nature writers. Each of the 380 pages is illustrated, describing familiar species and their behaviors through the seasons — one page for each day of the year. Mating, communicating, deceiving, grieving, sleeping, eating, migrating are a few of the activities discussed, showing how animal behavior and human nature are related. The pages suggest that our animal past is as much a part of our biology as color, size, sex, and shape — and is as worthy of attention as our spiritual and emotional makeup. The pages of *Nature a Day at a Time* weave Native American wisdom through a fabric of science and spirit, using threads of DNA to show the foundation of our evolutionary past.”

Simple Guide to Common Drift Seeds

(Illustrations by Cathie Katz and Pamela J. Paradine)



hamburger bean
(*Mucuna* spp.)



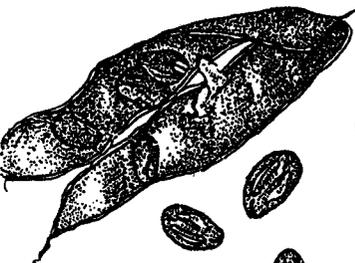
starnut palm
(*Astrocaryum* spp.)



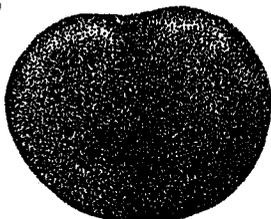
country almond
(*Terminalia catappa*)



sea pearl/pod
(*Caesalpinia bonduc*)



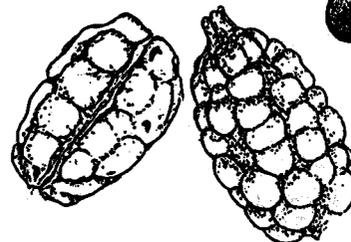
bay bean/pod
(*Canavalia rosea*)



sea heart
(*Entada gigas*)



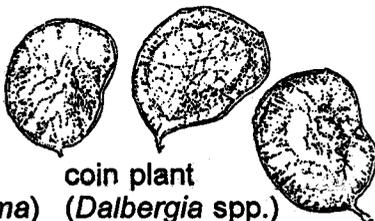
golfball/pod
(*Manicaria saccifera*)



hand grenade
(*Sacoglottis amazonica*)



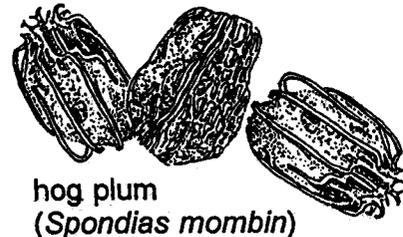
Mary's bean
(*Merremia discoidesperma*)



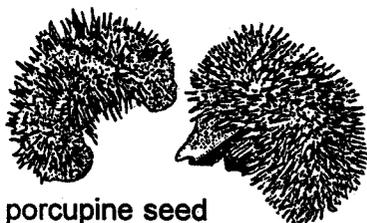
coin plant
(*Dalbergia* spp.)



sea purse
(*Dioclea reflexa*)



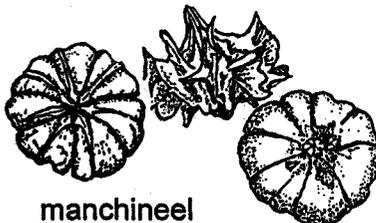
hog plum
(*Spondias mombin*)



porcupine seed
(*Caryocar microcarpum*)



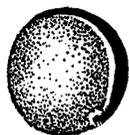
LEGO® toys
(*plasticus legoii*)



manchineel
(*Hippomane mancinella*)

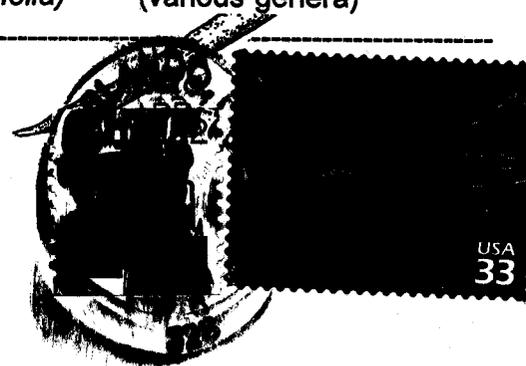
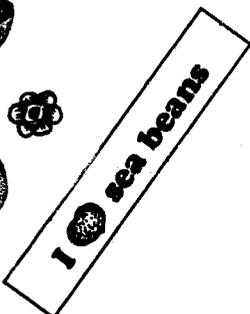


white/black/red mangrove
(various genera)



The Drifting Seed

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