

The Drifting Seed

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THE DRIFTING SEED

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

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FIFTH ANNUAL SEA-BEAN SYMPOSIUM 2000

Symposium 2000 schedule and travel information in this issue!
Friday and Saturday, October 13-14, 2000
(October 12 and 15: set-up symposium, Drifter meetings, get-togethers)

NEWSLETTER CONTENTS

page 2: From Cathie Katz
page 3: From Bob Gunn
pages 4-5: To Bean or not to Bean?
by E. C. Garvin
pages 6-7: Sea-Pea on the Dutch Coast
by Gerhard Cadée
pages 8-9: The Lucky Bean by John Dennis
pages 10-12: Ed's Beach Bytes by Ed Perry
pages 13-15: News and Notes
pages 16-17: Symposium Information

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For centuries, sea-beans have inspired artists, sailors, jewelers, botanists, crafters, and healers. I even saw a new health supplement called "Sharp Mind™" claiming to "boost your mental well-being." It contains (with six other ingredients) "DopaBean (*Mucuna puriens*) bean extract." For my mental well being, I think I'll stick to carrying a sea-bean in my pocket — or discovering them in art work. (I came across a copy of a large oil painting (22½ x 33½") from 1619 called "Cabinet d'Amateur" by F. H. Francken the Younger showing an assortment of sea-beans among shells, sharks teeth, and fossils.)



At our Sea-Bean Symposium in October we'll see more of the influence of sea-beans in art. This year we have "Queen-Beans Row," a series of displays by some of our familiar beaners such as Ruth Smith from Arlington, Virginia who will display her impressive collection of seed jewelry from around the world, and Cathy Yow from Jamaica Beach, Texas who will show and tell about the range of art made from nature ... and some newcomers to bean art — Alice Lowe, Mary Ann Bell, Alice Surrency, Pat Frazier, and Deborah Wright Trachtman — who will show a broad sweep of creativity from "sea-bean sticks" to shadowboxes. Next to these ladies will be some King Beans like Ed Perry, David Williams, Scott Boykin, and Mike Stewart displaying their creations. We're fortunate again this year to have Curt Ebbesmeyer from Seattle and his display of "all things afloat" from ship spills. Pete Zies will have the ever-popular Bean-o-Matic next to some of his world collection of sea-beans. Pete, of course, will explain the Bean-A-Thon categories and rules.

This year we continue the tradition of the Bean-A-Thon which started in the 1960s in West Palm Beach by Bob Mossman (aka Jack Beans). It was then called "The Annual Gold Coast Bean-A-Thon" and our own Bob Gunn was the "Official Observer." Bob reported that every time Ol' Jack Beans found a sea-bean, he would push the neck of a liquor bottle into the sand to appease "Saint Beano," the patron Saint of sea-bean hunters. This story was in an article written by Bob Gunn in the first issue of our newsletter in May, 1995. The following paragraph comes from that story and captures the essence of the Bean-A-Thon and participants.

Though they turned inland before they reached me I recognized Bob [Mossman], because of his bottle habit; Eleanor Miller with her plastic pail and omnipresent dog, Elvis; Bent-Over-Riley (he could not straighten up); Corinne Edwards, Clarence and Louise Jessen (whose Boynton Beach house was nearly engulfed by the sea-bean lianas he planted); and finally Diggin Duggan, who was always digging through the seaweed for sea-beans."

This year's Bean-A-Thon will celebrate the spirit of Ol' Jack Beans, Bent-Over-Riley, and Diggin Duggan. (As an aside, two *Mucuna* pods from a vine that Clarence Jessen (mentioned above) grew were given to me by Debbie Wilson and Nancy Leeds from the Gumbo Limbo Nature Center. These pods are now part of my sea-bean display which goes to libraries and nature groups through Florida ... his spirit lives on.)

Everybody is now asking if the sea-beans will arrive on our beach in time for Bean-A-Thon October 14? Storm and hurricane activity at the time of this writing (mid-August) has given us a lot of tropical tug-of-wars. Weather systems surround us right now, picking up beans from Jamaica, Cuba, and god only knows where else. I predict the armada will arrive *prior* to our symposium, so I hope the Florida beaners will leave a few beans behind for the out-of-state 'Thoners.

Both authors of *World Guide to Tropical Drift Seeds and Fruits*, Bob Gunn and John Dennis, will be at the symposium to answer your toughest sea-bean questions. I'm also very happy that Dr. E. Charles Nelson's drift seed book was released this week and we will have autographed copies at the symposium (see News and Notes, page 15).

Sea-bean Magic Continues ...

Thank you all for your questions and concerns about my health. In March I was given the gift of a calabash-sized tumor in the pelvic area which spread through my lymph system like a railroad vine stretching across the beach. The miraculous recuperative powers of the body and a skilled team of surgeons in Tampa gave me my health back. After completing two months of radiation last week, I am pleased to report that the nurses, techs, and therapists at Radiation Oncology at Holmes Regional Hospital now know enough about sea-beans to educate all future patients. Tina and Jodie will visit our beachcombers' festival so they can see what all this bean fuss is about.

See you all at the Cocoa Beach Library in October!

Everything may seem to be going wrong, when in reality, it is going right.
- Florence Scovel Shinn in *The Wisdom of Florence Scovel Shinn*

Hopkins, Helen C. Fortune. 2000. Identity and dispersal of *Aleurites erratica* (Euphorbiaceae), a Pacific drift seed synonymised with *Omphalea papuana*. *Kew Bulletin* 55:109-122.

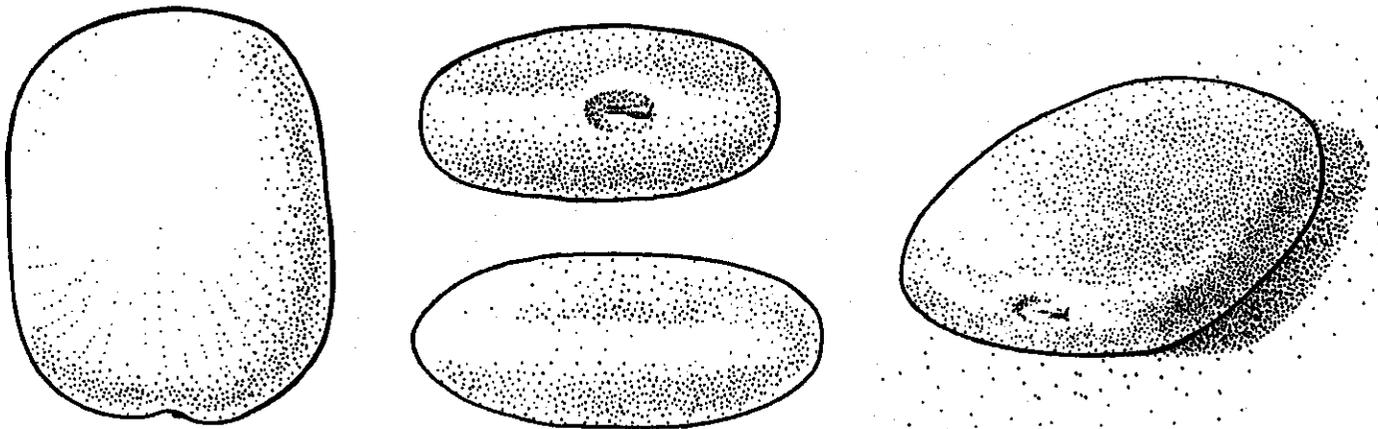
Helen has made a fine contribution to our knowledge of drift seeds collected from the beaches of the Pacific Ocean. She has solved a mystery similar to the one that surrounded the coco-de-mer. She has dug much deeper into the literature and taxonomy than I did in Gunn and Dennis (1976, reprinted 1999). Her three figures and one map brought to mind visual memories and my vain struggle concerning this puzzling drift seed collected by the Degeners. A well crafted and documented drift seed tale that is a joy to read. And El Niño (which was unknown to me at the time) is the golden thread! Thank you Helen.

Gunn, C.R. & Dennis, J.V. 1976 & reprinted 1999. World guide to tropical drift seeds and fruits. Demeter Press, Quadrangle/The New York Times, New York & reprinted by Kreiger Publishing Co., Malabar, Florida [Ed. note: In the book Kanton Atoll is referred to as Canton Island.]

Doreen Bolnick in Maputo, Mozambique wrote to Bob and Cathie in May: "The American ambassador has a bowl full of sea beans, which I think are *Entada rheedii* (formerly *E. pursaetha*), on his coffee table. He asked a local botanist from the university to identify them for him. I just received an email from the botanist saying he can't find a match for the seed and has now put the search in my hands. I'm fairly certain I've identified it correctly from Palgrave's *Trees of Southern Africa* and Beentje's *Kenya Trees, Shrubs and Lianas*, but there are no illustrations and the descriptions (size in particular) are inadequate to confirm the identification is correct. *E. rheedii* is found in the middle of Mozambique and northwards. What long pods it has — as long as 2 meters, by 15 cms!"

In July, Doreen wrote again:

"Just returned from two weeks of vacation. While at Benguerra Island, I found a photo of an *Entada Rheedei* seed in a book entitled *A Complete Field Guide to the Trees of Natal, Zululand and Transkei*, by Elsa Pooley. One page had a photo of about five common drift disseminules. This helps make my identification look very good. I collected several seeds of *E. rheedei* for you — I hear they sprout really well. I'm surprised by the spelling of the name since I have it in several books here, all ending in double i, and ei is a more unusual ending. Collected a few other seeds for you too. Not sure what they are yet, but the African staff thinks they are all from local species — found on the mainland, not far away." Below are the illustrations by Doreen of the sea heart in question.



In response to Doreen's question, Bob wrote:

"According to Lock (1989) in the LEGUMES OF AFRICA - A CHECK LIST there are 18 species of *Entada* in Africa, including *E. gigas* and *E. rheedei*. In the African literature (but not the world's literature) *E. rheedei* includes *E. pursaetha* (a synonym of *rheedei*) and *E. phaseoloides* (which in Africa only was misapplied and really referred to plants of *E. rheedei*). *E. rheedei* is widespread in Africa and also is found in Asia, Australasia, and the Pacific Ocean basin. *E. phaseoloides* is a species of China, North Vietnam, Philippines, New Guinea, Australia, and Pacific Ocean basin. Where the two species overlap in "Asia" these two field characters can be used to tell them apart: *E. rheedei* - 3-4(-5) pairs of leaflets per leaf & pod (internally) with a woody endocarp. *E. phaseoloides* - 1(-2) pairs of leaflets per leaf & pod (internally) with paper (parchment-like) endocarp. Please note that the correct spelling is rheedei not rheedii."

To Bean or Not to Bean?

By E. C. Garvin

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Life is full of surprises. One morning several years ago I was standing on the edge of the continent, holding a fishing rod, quietly raising the sun from its watery bed. A strong tug on the line. Ha! A strike. Aha! A shark. All the marks of a Lemon shark: same-sized dorsals, blunt snout, oval eyes. Now what would a beautiful Lemon shark have had for breakfast? I opened its stomach with a filet knife. Nothing but a large seed. Sharks are known for their exotic diet, but a seed? Curiosity sent me to the Merritt Island Library. With the help of the reference librarian, I was introduced to Charles R. Gunn and John V. Dennis, Sr. Enlightened by their *World Guide to Tropical Drift Seeds and Fruits*, and fascinated by such names as *Entada*, *Omphalea*, *Sacoglottis*, and *Dioclea* I became a Beaner. And I had my first sea-bean, not from the beach but from the belly of a shark, a *Mucuna fawcettii*. After that whenever I fished I stuck the rod in a sand spike, set the drag on the reel, and ranged the beach for specimens. Eventually I had a collection.

From this collection, I took my choicest find to the Fourth Annual Sea-Bean Symposium last October. This bean was the focus of a minor flurry of excitement, which resulted in a song composed in its honor. I cannot recall the when or the where but some years ago I found the shiny, bright red bean which I was unable to locate in any of my sources either botanical or the *World Guide*. At the Symposium, I carried it to one expert after another. It was probably a this or a that, but certainly not a so-and-so. On the third day, John Dennis decided that it was a *Canavalia nitida*, quite a rare find. How could a mere bean provoke so much attention? It was a genuine charmer and smiled for the photographers.



Shown above: Author John V. Dennis, Sr. (left) shaking hands with author Ed Garvin (in hat) at last year's symposium

Suddenly the question arises. Is beaning a game of finders-keepers? And which beans belong to what countries? Perhaps variety is better than numbers. A jar of mixed nuts is more interesting than 30 jars of the same species—and much less clutter. Word has come from the Caribbean that perhaps we should return all the sea-beans we find (and have found?) to their presumed sources. The *Mucuna*, specifically, is named. What are the possible ramifications of such a request? What if the idea catches on and all the Central American nations get wind of this? Is each nation going to brand its *Mucuna* seeds? Are then *Mucuna*, not to mention other seeds, going to phase out Pokemon cards as a new fad for kids? As the entrepreneurs sense the possibilities, will web sites proliferate? Then IPO's in bean stocks? *Manicaria* hawked at Sotheby's? A rare *Canavalia* makes me a millionaire! And what about the *cojones de buros* from the Amazon? Will they be banned as detrimental to the morals of the United States? *Mucuna* is only the opening wedge.

Members of the Congress of the United States sense the opportunities for displaying a united front to the world — and TV exposure. Negotiations begin to formulate rules for buying, selling and distributing hamburgers, golfballs, sea hearts, starnut palms, the famed Mary's-bean, and who knows, even the humbly ubiquitous sargassum weed.

And then the inevitable — Congress cooks up the Beanhead Commission. Threats of interdiction follow: tariffs, confiscation of beans for reasons of health. Smuggling by the Bean Division of the International Union of Terrorists. As the tension mounts TV crews storm the beaches of the Caribbean isles like pirates bent on uncovering vast amounts of gold and jewels. And every nation with a shoreline touching the Atlantic and Pacific will be knocking on our door threatening to inundate us with their exclusive brand of mosquitoes — or else. Owners of beachfront property declare riparian rights to the edge of the continental shelf. People guard their sand-space with shotguns. Sea turtles mistaken for crawling prowlers are blasted to bits.

All the while the sea-beans, through an inner drive of their own, are cannily developing fins and will undoubtedly evolve as viable creatures of minute intellectual capability, but sufficient to maintain themselves in the gyre and gimble of the waves. To bean or not to bean, that is the question. Whether 'tis nobler to lighten the litter on the littoral or leave it for the trash picker-uppers to dispose of, or to return them to the original owners, or to purloin them and nest them for ever after with similar litter in the recesses of dark and dank cabinets. When summer comes, can another be far behind? Will the floaters lie on the sizzling sands where beaners fear to go? Where sneakers melt from the heat, and the sea-beans are all catalogued as varieties of *Faba torridus* — baked beans?

Collection Notes

We thank Pat Brett for his generous donation of beach treasures to the Drifters from his personal collection including petrified crabs, toys, mermaids' purses, coquina rock, and of course a huge assortment of sea-beans. Cathie has incorporated much of Pat's collection in her display which will be on view at the symposium.

Shown below: Drifters at last year's Fourth Annual International Sea-Bean Symposium in front of Pete Zies' Bean-o-Matic
From left: Cathie Katz, Diane Campbell, Pat Brett, and Cathy Yow



It would be easy to presume that the past 100 years were the golden age of discovery. Well, you ain't seen nothing yet ... Fasten your seatbelts, it's going to be a fabulous ride.

Nancy Shute in "Inventing the Future"
in U.S. New & World Report, Jan. 2000

Seeds and plants of *Lathyrus japonicus* subsp. *maritimus* on the Dutch coast

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The sea-pea *Lathyrus japonicus* subsp. *maritimus* is a seashore plant with a circumpolar distribution in the northern hemisphere, growing along Atlantic and Pacific coasts (Brightmore & White, 1963).

The history of the sea-pea in the Netherlands is peculiar: Linnaeus (1737) was the first to report it from our country, but until 1973 it was not found again (Schendelaar, 1976). However, since 1973 it was recorded from various localities along the Dutch coast: Texel, Den Helder, N. Beveland, Terschelling (Weeda et al., 1987). These records were usually of small plants, with a few flowers if flowering at all, and the localities were often disturbed later and the plants disappeared. In Britain flowering does not normally occur before the third year (Brightmore & White, 1963). A. Flonk (pers comm. 1997) discovered an older and larger plant covering more than a square meter and richly in flowers on Terschelling, another of the Frisian islands. However, also here the dike on which it grew had to be reconstructed and although the plant was removed to another place, this was not successful (Flonk, pers. comm. 2000). In Britain it is found on well-drained soils usually on stable shingle beaches, less frequently on sandy fore dunes (Brightmore & White, 1963). In the Netherlands it occurs between stones on artificial dikes along the coast.

Lathyrus maritimus is dispersed by drifting seeds, which can remain buoyant and viable in seawater for up to 5 years (Brightmore & White, 1963). They are easily recognisable spherical brownish seeds, miniature peas of 4-5 mm diameter, with a linear hilum, occupying about $\frac{1}{4}$ of the circumference. The first seed records from UK coasts date from 1983 (Dennis in Nelson, 1990) and it is apparently not rare once searched for (150 records in 1983 - 1986, see Nelson, 1990). No written records exist of seeds found in drift on the Dutch coast, but they must have arrived here to give rise to the several plants observed in 1973 and afterwards.

The residual current along our coast runs from south to north. Obviously, seed production in coastal areas south of the Dutch coast has been poor and indeed the sea-pea has been found only once in Belgium (in 1920, see Rappé, 1984), it is reported as 'very rare' from the French coast of the Channel (Fournier, 1977), some plants were observed on this coast in 1995 by P. de Wolf (pers. comm. 2000). It is also reported from the south and east coasts of England (Brightmore & White, 1963), with a rich habitat on North Sea shingle shores near Aldeburgh, East Anglia (Hepburn, 1952). North of the Netherlands it extends from the German Bight to the Kola Peninsula in Russia, with many localities along the Scandinavian coasts including those around the Baltic (Mossberg & Stenberg, 1994). I myself observed large plants rich in seeds in the fore dunes of Skagen N. Jutland, Denmark in 1996.

Since I started looking for seeds here on the coast of Texel in 1982, I have found seeds of this species albeit always in low numbers, indicating its rarity in drift. Identification of the first seed I found in 1982 was checked by Charles E. Nelson, then at Dublin Botanical Gardens. The most recent one I found on February 4, 2000, in drift high on the asphalt dike of the southern tip of Texel. In total I have now more than 10 seeds in my collection all collected on this locality on the island Texel (where I live) and on the dike of Den Helder on the mainland, opposite Texel. These are the only places along the Dutch coast I visited for collecting seeds.

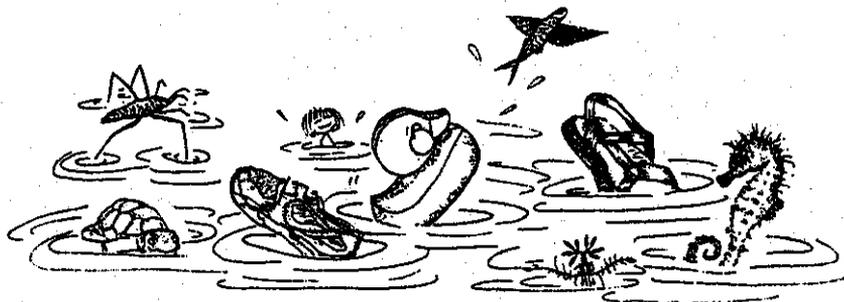
As far as I know there are no records of sea-pea seeds from elsewhere along the Dutch coast, but it must be admitted that few have looked for seeds. Those that looked for (smaller) seeds on the Dutch coast (Kuijper, 1982; Cappers, 1993) took bulk samples of 1 liter or less of beach drift rich in seeds. Such samples will be normally too small to contain the rare sea-pea seeds. In Texel and Den Helder I searched in the field among this drift high on the coast rich in seeds, enabling me to search larger volumes. It is among this material, rich in seeds of other European marine drifters such as Sea-rocket *Cakile maritima* and Sea-kale *Crambe maritima* that I collected the *Lathyrus* seeds. It is my impression that *Cakile* has become richer since I started searching in 1982, *Crambe* was rich in some years (Cadée, 1992); for *Lathyrus* the number of seeds collected is too low to indicate any trend.

As I collected mainly on one small spot on Texel, where due to trampling by tourists *Lathyrus* will have little chance to grow, this will not interfere with its dispersal but gives me the opportunity to study possible trends in numbers cast ashore. I agree with discussions on 'save the beans' in *The Drifting Seed* 5(3) that in general it is better to record but not to collect *Lathyrus* seeds on the Dutch coast as the plant is rare here.

From other coasts except the UK, *Lathyrus* seeds are not often recorded. This may partly be due to their small size (diameter 4-5 mm). Another problem is that they have the same size as plastic pellets which now abound on North Sea coasts (Denkinger et al. 1990), as well as all coasts of the world (see Ribic, 1992 for references). Pellets and drift seeds occur in exactly the same debris accumulations high on the beach, and plastic pellets sometimes have the same brownish colour as *Lathyrus* seeds. This means that many pellets have to be inspected before a real sea-pea is found!

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The present coastlines of the world are where they are because some of the water supply is tied up in the polar ice caps, mainly on Antarctica. Should the ice caps melt so that all of the water flowed into the ocean basins, the sea level would increase by several hundred feet and flood most of the low-lying coastal areas of the world.

James Trefil in *A Scientist at the Seashore*

THE LUCKY BEAN
by John V. Dennis, Sr.
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Long-distance Travellers Among the Temperate Drift Seeds

Generally taking a back seat to tropical drift seeds, those from temperate portions of the world lack the history and glamour attached to tropical ones. The reason is not hard to find. Lacking in the hard, lustrous seed coats found in such tropical species as the *Entadas*, *Diocleas*, *Mucunas*, and *Caesalpinias*, temperate drift seeds, for the most part, are dull-looking and not apt to catch the eye of a collector.

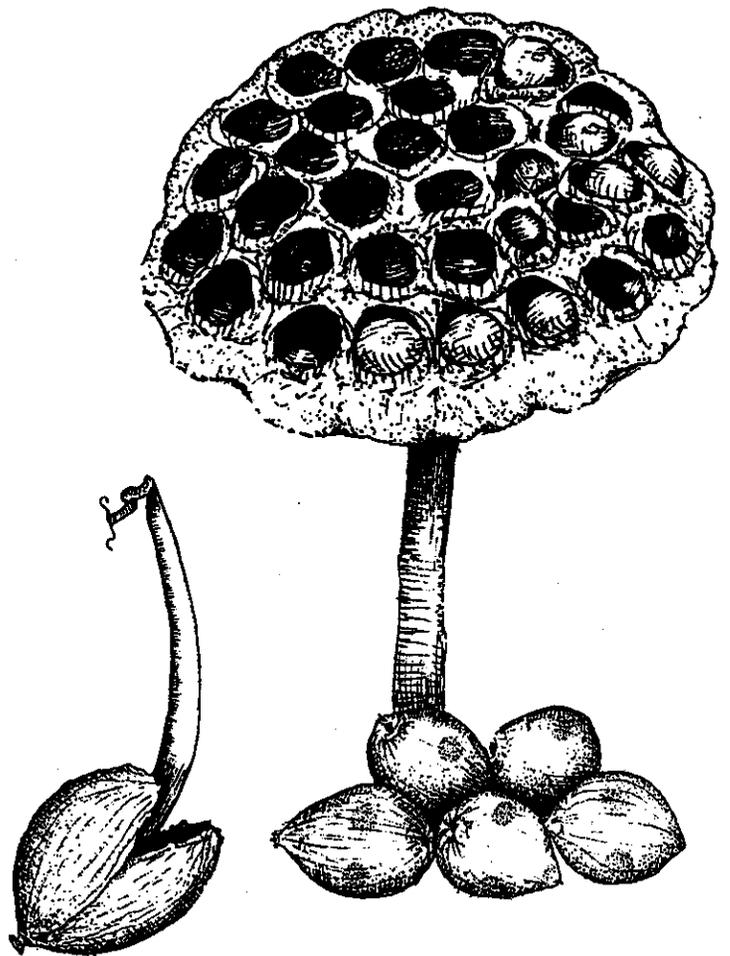
Only one of the temperate seeds belongs to the bean family (Fabaceae) which contains so many of the tropical ones. This is the sea pea (*Lathyrus japonicus*); only 5 mm long and without a hard outer seed coat. Yet the seeds, as reported by Dr. E. Charles Nelson, formerly of the National Botanic Gardens in Dublin, are found on beaches in Cornwall, England and western Ireland, and, from the research he has done, appear to have made a trans-Atlantic crossing from North America. Judging from test results I've made, using containers holding sea water, these tiny peas are more than capable of making the journey. I have had several sea peas float as long as 12 years and are still floating.

The home of the sea pea on this side of the Atlantic is the shores of the Great Lakes and along the East Coast from Labrador south to New Jersey. Shore erosion causes plants and seeds to reach the ocean. Seeds reach the Gulf Stream and many eventually reach the shores of western Europe. On the Pacific coast, the plants are found along the coast from Alaska to California.

Another long-distance floater is the American lotus (*Nelumbo lutea*). A water lily found sparingly on freshwater bodies in eastern North America, the lotus was well known to the American Indians and today, the pods that hold the seeds are used in dry arrangements. The hard-coated nutlike seeds, about 1 cm in diameter, generally sink to the bottom after being released from the pod. Only a few float. I found one on a beach on Nantucket Island off the coast of Massachusetts. My floatation tests show that the seeds are capable of floating for over 15 years. One is still floating.

More closely resembling the typical sea-beans than any other temperate drift seed, the American lotus has an exterior shell with a modest sheen. Furthermore, many of the seeds remain viable after being exposed to sea water.

All but unknown to collectors, seeds of the American lotus are overlooked partly for the reason that they resemble small acorns. Add to this the fact that this is a relatively rare plant and it can be seen why few reach beaches. The American lotus has an Old World counterpart in the sacred lotus (*Nelumba nucifera*) of Africa and Asia.

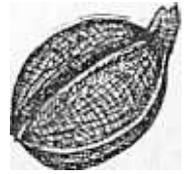


Shown right: American lotus

In a handful of wild seeds taken from any one natural community, there is hidden the distillation of millions of years of coevolution of plants and animals ... Is it not fitting that the lotus has become associated with immortality?

Gary Nabhan in "Enduring Seeds—The Sacred Lotus and the Common Bean"

THE LUCKY BEAN by John Dennis (continued)
Long-distance Travellers Among the Temperate Drift Seeds (continued)



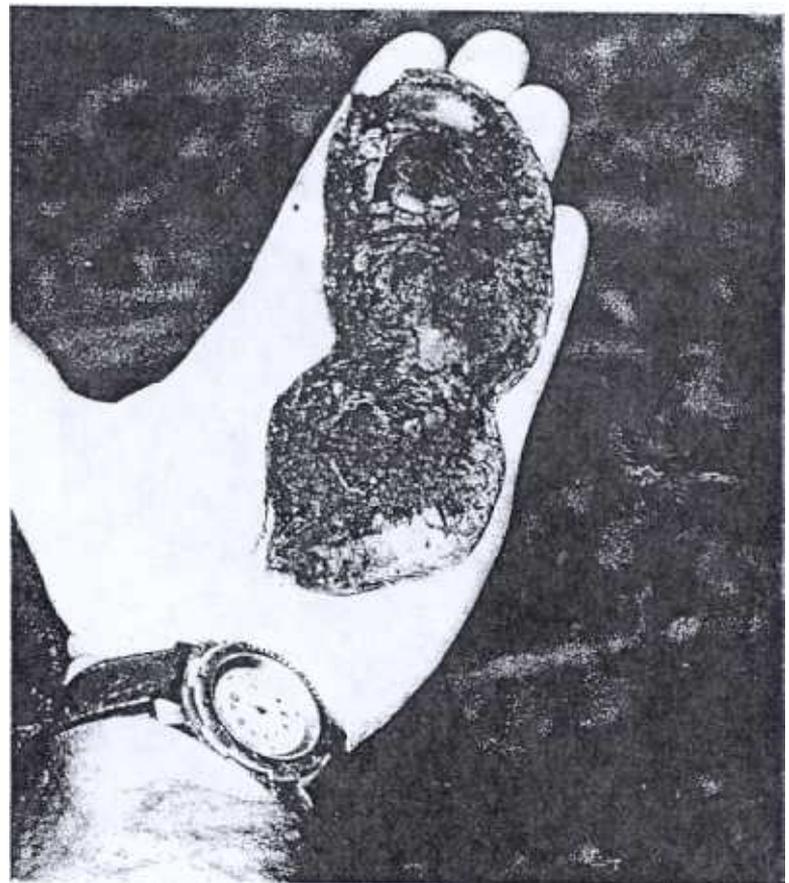
Probably a good many temperate drift seeds reach beaches of western Europe and are not recognized because collectors are unfamiliar with them. I had the good fortune to find an American drift seed, water hickory (*Carya aquatica*), on a beach in the Isles of Sicilly in October 1981. This was a first record for Europe, and, to my knowledge, there have been no others since then.

The water hickory grows along rivers in southeastern United States. Its endocarps (nuts) are found commonly on Florida beaches. Maximum flotation under test conditions is 6 months.

The black walnut (*Juglans nigra*) should also be looked for on beaches of western Europe. Heavy rains in the fall bring large numbers of this walnut down rivers that flow into the Gulf of Mexico and East Coast rivers south of New England. The black walnut has a maximum flotation under test conditions of 6½ years.

A good many other nuts, some of them picnic fare, are also found on beaches. We have no way of knowing if the pecans, filberts, hazel nuts, and English walnuts we find on beaches are long-distance drifters or are local in origin. The peanut floats only a couple of weeks.

Collectors are urged to pay attention to temperate drift seeds. Some are good collector's items and some may have drifted as far or farther than tropical drift seeds. If you don't want to place them in your collection, you can always eat the kernels of some of them.



David Williams' trip to Costa Rica in March provided a range of unusual seeds. Here, in the photo on the left is the seed (with dark center) that later exploded in Birgit Korner's home in Germany. In the photo on the right David is holding sea purses (*Dioclea* spp) in their pod. David will have his Costa Rica collection on view at the next symposium.

The Brown Nickar

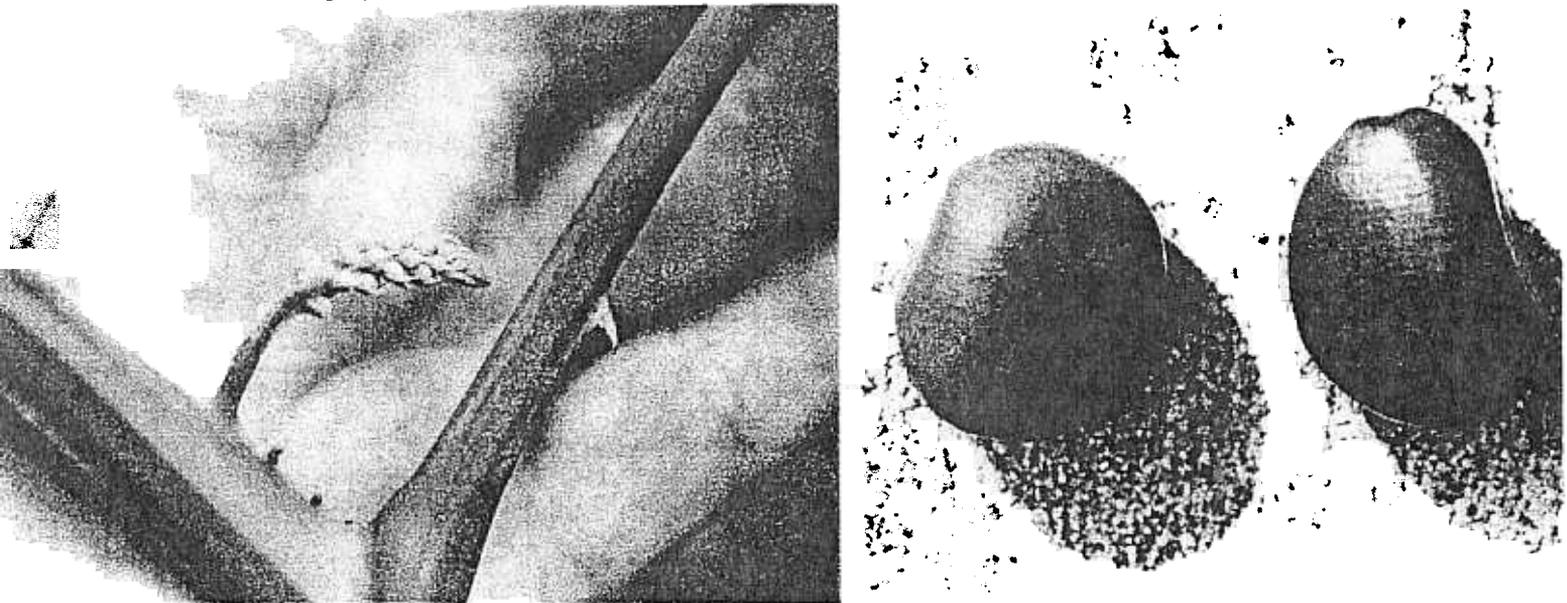
Identifying drift seeds we find on beaches can be a challenge to even the most qualified of us at times. For some unknown seeds, those that even perplex the specialists in the field of botany, it becomes necessary to germinate and grow out the seeds to mature, flowering plants to obtain identifications. In most cases, flowers will identify the plant/seed in question, and in other instances, they could even lead authorities to describe an entirely new species. For the chocolate brown-seeded nickernut that is commonly found on Gulf coast beaches, and only rarely on Florida east coast beaches, this is exactly the situation.

One of only a few seeds that could not be identified in *World Guide to Tropical Drift Seeds and Fruits*, the chocolate brown seed's identity has remained a "thirty-year mystery" according to author Charles Gunn.

Measuring 5 cm long and 4 cm wide, the chocolate-colored seed is notably larger than the more common *Caesalpinia bonduc*, or gray nickar. However, the beauty of the seed is no less than that of its apparent cousin. Chocolate brown nickars also display the lovely, faint concentric rings that encircle the seed its entire length, much like the latitude measures of a globe.

Similarities between this mystery seed and *C. bonduc* also extend to the parent plants of both seeds. I know this because I have successfully grown out the brown seed to a mature, flowering parent plant. One of four seeds I collected on the beaches of Padre Island, Texas during the 1999 Sea Turtle Symposium in March, was planted that same month at my Melbourne, Florida home. The vigorous sprawling, thorny shrub it produced has now reached about 14 feet in height and is displaying flower buds after about 16 months of growth. Compared to gray nickernut plants that grow along the east coast of Florida, the brown-seeded plant possesses larger compound leaf structures, with somewhat more pointed leaflets, and an overall larger size in general.

At the time of this writing, flower bud stalks (inflorescences) have appeared along leaf nodes and with new sprouting growth of the brown-seeded plant. Young green bud stalks first appear somewhat like tiny pine cones before they mature and elongate to expose perhaps a hundred tiny, yellowish flower buds 5-8 mm wide (see photo below left; brown nickars below right).



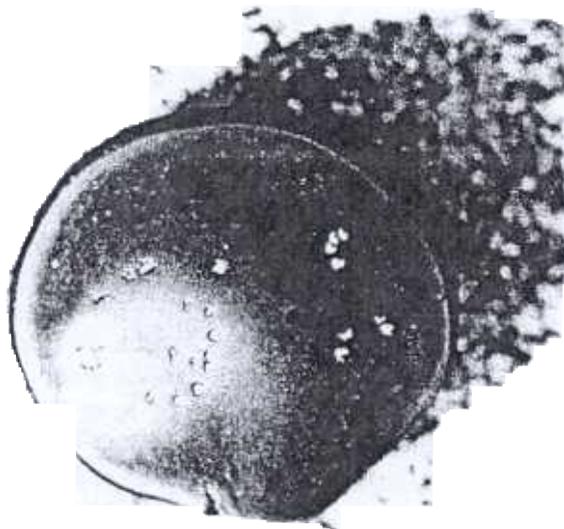
Any day now the tiny buds should open to reveal the long awaited flowers of this mystery plant. Preparation of preserved specimens of this plant have already begun.

Dried samples of leaves and flowers will be accompanied by pickled specimens of flowers. Along with comparison samples of *C. bonduc*, a package of these precious specimens will arrive in Kew, England at the Royal Botanic Gardens where Gwilym Lewis will help to unravel the mystery of this beautiful brown drift seed.

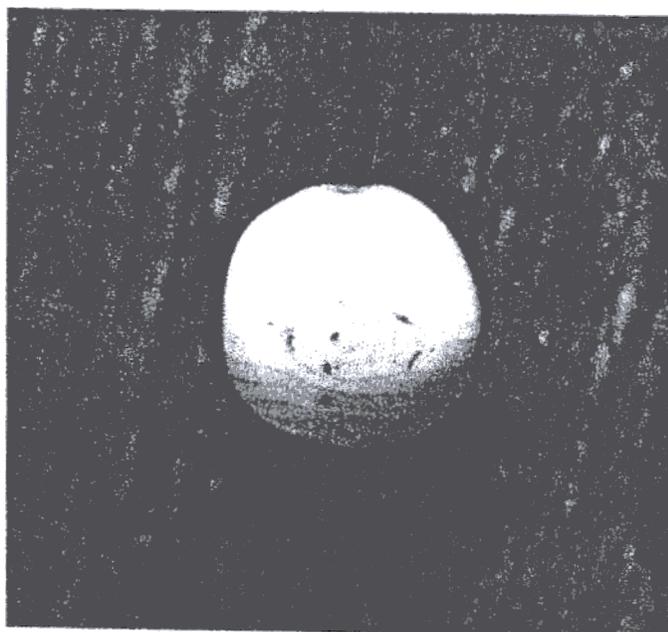
Seeds That Tell Stories

Do you have drift seeds in your collection that bear bite marks or rasping scars on them? I do. I have often wondered about the history of the different markings. Some appear to be made by larger creatures such as monkeys, while others appear quite different. Perhaps these are made by fish or ground dwelling rodents. Without witnessing the journey that each seed makes, it's hard to say how the marks were made. However, some interesting clues do exist.

First off, it is amazing that seeds such as the *Mucuna*, with their pods of protective stinging hairs, rock-hard seed coats, and distasteful toxins such as L-Dopa (*The Drifting Seed*, 1997) would even bear the scars of seed predators. But indeed they *do*. Perhaps it is due to these attributes that we do find drift seeds, miles from their places of origin, that exhibit bites and scars from encounters with creatures, who then discarded them after giving up. But do all of these bites and rasping scars come from encounters strictly in their homelands? Probably not. There are most likely as many different creatures, in both the forests, oceans, and on beaches that are apt to make teeth marks on seeds as there are species of sea-beans themselves.



The photos above were taken by Ed Perry to show the different bite marks on a *Mucuna*, front and back. The photo below shows an even row of bite marks on a gray nickar.



BEACH BYTES by Ed Perry (continued)
Seeds That Tell Stories (continued)

Many of the seeds that reach distant shores bearing bite marks and scars did sustain their injuries before ever reaching the oceans. Some of the tropical almonds (*Terminalia catappa*) that are found on Florida's east coast beaches have been split open and the kernels extracted, presumably by humans living in tropical areas.

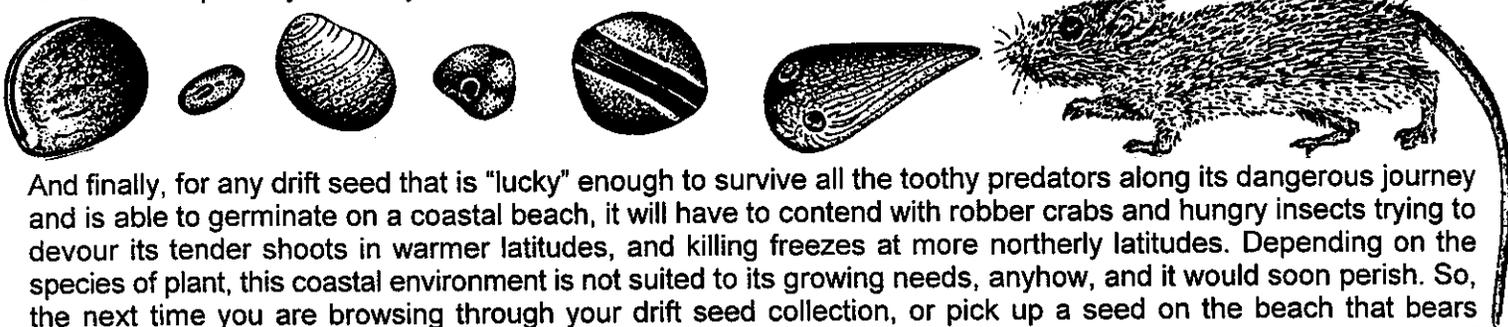
Starnut fruits (*Astrocaryum* spp.) that are relished by forest monkeys sustain damage when the sweet, fleshy fruit is eaten from around the seed. Beth Sinclair, while visiting Peru in the summer of 1997 was able to collect many of these seeds from river banks and forest floors. Her guide, Moises Chavez, who had witnessed the monkeys feasting on the palm fruits, explained to her why so many of the nuts bore teeth marks (pers comm. 1998).

During her same trip in Peru, Beth also witnessed a pacu, best described as a vegetarian piranha, feeding on a *Mucuna* seed that she saw fall into the water while she was fishing from a canoe. The vine that grew the seed hung on foliage that draped over the river bank. Even in spite of some seeds distasteful, and often poisonous toxins, some seed predators have found ways to overcome.

Once these seeds reach oceans and begin to drift, a whole new fauna could be responsible for making bites and rasping scars on them. Pelagic species of fish could certainly be responsible at times for "tasting" drift seeds as they boil around at the ocean's surface, like Ed Garvin's lemon shark (this issue, page 4). However, it is more likely that these seeds encounter marine biters when the ocean forces (winds and currents) have brought them into sargassum community (*Sargassum fluitans*)." After drifting for only weeks many of these seeds at sea become substrates for both soft and encrusting marine organisms. Marine hydroids (Hydromedusae), tube worms (*Spirorbis*), and the "sea lace," or bryozoan (*Membranipora*) are all organisms that use floating objects at sea as attaching substrates. Young, epi-pelagic marine sea turtles, especially loggerheads (*Caretta caretta*), share this same habitat with sea-beans on their journeys around the Atlantic.

According to Blair Witherington, a research scientist with the Florida Fish and Wildlife Conservation Commission, many of the marine organisms that attach themselves to almost anything that floats or lives near the surface are indeed a large part of the diet of young loggerhead sea turtles. It is possible that the rasping scars and piercing holes seen on many of our stranded sea-beans came from encounters with these young turtles and their horny, beak-like jaws. Other creatures of the sargassum community could be capable of scarring drift seeds as well. The orange filefish (*Aluterus schoepfi*) also has teeth capable of damaging the seed coat of peregrine seeds. Seeds that drift the oceans and are lucky enough to forego this type of damage may be subject to the destruction of boring marine organisms like the boring clam, or shipworm (*Teredo navalis*).

Seeds that strand on beaches unscathed and intact can still fall victim to hungry and toothy critters. Rodents that live just atop and behind the dune on Florida's beaches are suspected drift seed predators. Pete Zies has a bright orange coralbean from Florida beaches which bears the distinct marks of a toothy rodent. The native cotton rat (*Sigmodon*), the exotic black, or Norway rat (*Rattus norvegicus*), and the native southeastern beach mouse (*Peromyscus polionotus niveiventris*) are all rodents that share this habitat. I personally have found several drift seeds over the years that appear to have been partially eaten by rodents or other small creatures after stranding.



And finally, for any drift seed that is "lucky" enough to survive all the toothy predators along its dangerous journey and is able to germinate on a coastal beach, it will have to contend with robber crabs and hungry insects trying to devour its tender shoots in warmer latitudes, and killing freezes at more northerly latitudes. Depending on the species of plant, this coastal environment is not suited to its growing needs, anyhow, and it would soon perish. So, the next time you are browsing through your drift seed collection, or pick up a seed on the beach that bears characteristic bite marks or rasping scars, ponder its past. These are the hardest of drift seeds that have endured the elements. More than likely that very seed in your hand holds a world of stories about its life on this Earth.

References

Zies, P., 1997. Sea-bean self defense. *The Drifting Seed* 3(3): 7-8

Witherington, Blair, (in review). Ecology of Neonate Sea Turtles Inhabiting Debris Lines Near the Gulf Stream Front. p.15

NEWS AND NOTES

In April, **Mark Bartlett** from **Sarasota, Florida** wrote, "Ed [Perry] inspired me to drill and plant my one and only brown nickar, and it sprouted! It's about 4 inches tall, thick and growing nicely. I found it several years ago and never dreamed of actually drilling a hole into it, but I started thinking about the even more precious gift inside of it, and decided to go for it. Ed told me of the 14-foot brown nickar in his yard, and I decided to get some of my more precious seeds out and give it a try. I'm very excited about this, and I'm trying several different varieties of hamburger beans (four have sprouted)." On June 4, Mark continued: "I also planted four beautiful yellow nickars from a mancala (wari) game I got on eBay. I'm very excited to have a gray, a brown and a yellow all growing at the same time! A Mary's-bean came up a little bit, looked around, and hasn't decided if it wants to live here or not. If not, I'll try another one." On June 12, Mark continued: "My brown nickar is holding steady ... some new leaves aren't as happy as they could be. Three yellows are growing vigorously after sprouting a week ago. The Mary's-bean is trying very hard to do *something* ... I'm not sure *what* though! Six *Mucuna*, two *Dioclea*, and three *Entada* are all growing up string and lattice, trying to find a tree to go crazy in." Thanks Mark! We'll see you and Laura at the symposium.

In February, **James Bond** from the **BBC in Shropshire, England** contacted **The Drifters** to do a live radio interview. **Cathie Katz** gabbed with radio host **Jon King** about her favorite topic, sea-beans and **The Drifters**, mentioning our sea-bean festival—perhaps the show will encourage some of our U.K. friends to attend this year.

Found in Red Sea Shipwreck: Coco-de-mer!

Clair Bureson in **Houston, Texas** led us to an article written by **Cheryl Ward** in *Scientific American Discovering Archaeology* magazine (June/July 2000) which describes (and shows) a coco-de-mer from an ancient ship-wreck: "How this 25-kilogram (55-pound) monster came to be at the foot of a coral reef off the coast of Egypt is part of the story of the global economy and the complex web of trade routes in the second half of the eighteenth century."

(See this article online: www.egyptrevealed.com/052400-redsea.shtml.)

A paper (in Dutch) was published in "Het Zeepaard" [vol 60 p. 189-195] 2000 by **Gerhard Cadée** of **Texel, The Netherlands**. The title translated "Mass-stranding of *Ricinus communis* seeds (castor beans) on the beach of Texel." Gerhard wrote: "Ten thousands of seeds came ashore in early June, probably they were lost from a ship during the gale of the 28th of May. The seeds cannot drift for a long period (50% drifted less than 5 days in my drift experiment with these seeds), so they cannot be long-distance travellers. Some were still viable. I have grown some small *Ricinus* plants from these seeds. *Ricinus* does not grow normally in western Europe, but shiploads are imported for the Castor oil."

In August, Gerhard sent this update: "You might be interested to hear that a few *Ricinus communis* seeds stranded on our beaches have germinated: some 50 seedlings are growing on the beach of a sheltered embayment (Mok) on the southern part of Texel, where I found earlier thousands of castor beans stranded."

[See Gerhard Cadée's article about the beach pea is in this issue of our newsletter. An article describing seeds from the beach of Djibouti (from his recent trip on the research ship *Pelagia* to Africa) will be in the next (December) issue.]

Last month, in one of his weekly articles for "The Somerset Herald," author **John V. Dennis, Sr.** from **Princess Anne, Maryland** explained why hurricane predictions by the national hurricane organizations need to improve. "In mid-September '99, people from Florida to Virginia were bracing themselves for **Hurricane Floyd**, billed as category 4, meaning winds up to 155 mph. The Hurricane Center advised people to leave the coast and head inland. The greatest evacuation from coastal areas in history got underway. Huge traffic jams tied up highways in North Carolina and elsewhere. People moved into shelters. The only trouble was that the Hurricane Center had people fleeing in the wrong direction." [Drifters: any comments? suggestions? What are the hurricane predictions for October 12 to October 15, 2000? Write to Cathie Katz c/o *The Drifting Seed*.]

Exploding Sea-bean Update

Drifter correspondent **John V. Dennis, Sr.** also responded to **Birgit Korner** from **Germany** and her exploding sea-bean: "Regarding Birgit in Germany who had a drift seed explode, this can occur in the candlenut (*Aleurites moluccana*). See page 49 in *Australian Driftseeds* by Jeremy Smith. He states that candlenuts on beaches frequently shatter, presumably through being heated and dried by the sun, as one did, loudly on my office windowsill one summer's day. The Birgit description (mentioning vertical ridges) fits fairly well except for size."

[eds note: The photograph of Birgit's drift seed on page 9 was not available when John wrote this comment.]

Politics and Pickles

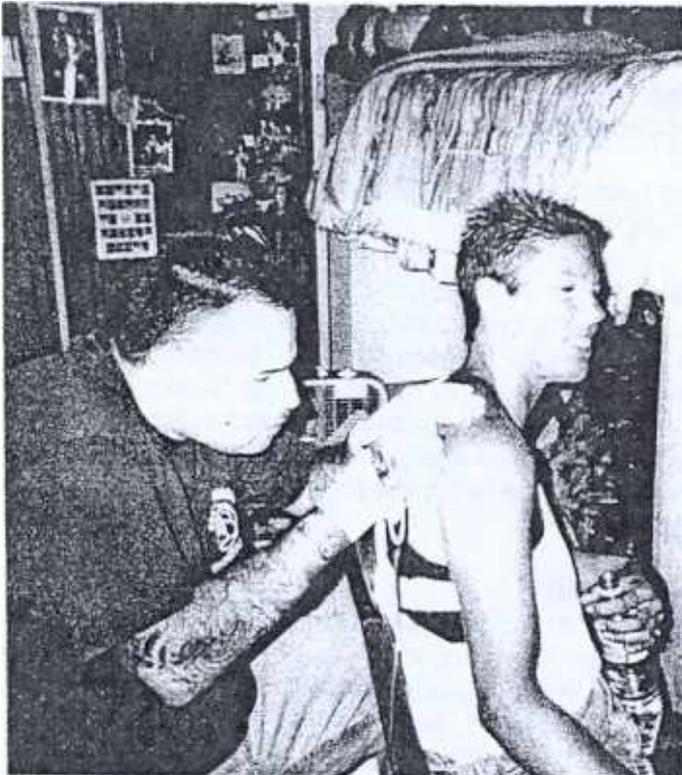
Our Seattle correspondent, oceanographer **Curt Ebbesmeyer** recently included an article in his newsletter **Beachcombers' Alert!** by our own **John V. Dennis Sr.** titled "Elian Rescued by Porpoises" in which John described one version of Elian Gonzales' encounter with dolphins. Both John and Curt will be at this year's symposium to answer questions about things drifting in the ocean. Curt is the nation's expert ship spill detective and has been tracking yellow duckies, Nike® sneakers, LEGO® toys, and most recently toys and shoes from the containership *APL China*. Also floating in the Pacific from an unidentified ship spill are **Rugrat dolls** (cartoon characters from the Nickelodeon TV Channel ... so far, **Tommy Pickles** has been the main character being found ... but just his head!) [Eds note: Our esteemed ocean scientist Dr. Curt Ebbesmeyer will be available at the symposium in October to answer questions about Tommy Pickles.]

Long-time Drifters **Jeannie and Bob Gray of Cocoa Beach** called to let us know about the travels of their son, daughter-in-law, and grandsons (**Bob, Lona, Robby, and Michael Gray**) on their 56-foot sailboat *S/V Immanuel*. The Grays have been traveling around the world since November 1997. (Robby Gray sent us the acrostic poem "Sea-Beans" in the last issue.) While crossing the Pacific this year, they stopped in the Marquesas Islands where they were fortunate to go pearl diving with the resident professionals. The Grays will be leaving Bora Bora for New Zealand where they will wait out the cyclone season in a safe harbor and will let us know about their sea-bean finds.

Helen C. Fortune Hopkins from the Department of Biological Sciences, **Lancaster University, U. K.**, sent The Drifters a copy of *Kew Bulletin 55: 109 -122 (2000)* in which she wrote "Identity and Dispersal of *Aleurites erratica*" It is now part of our reference library, and it will be available with our other material in the literature section of the symposium. Thank you Helen.

First Sea-Bean Tattoo?

Dedicated sea-beaner **Alice Lowe**, from **Indialantic, Florida** returned from a recent visit to Chicago. The photo (below left) was taken at the "Bar-B-Que and Tattoo Festival" in Chicago where Alice became the first person in history (?) to get a sea-bean tattoo. Also shown below (right) is Alice with an original "Ocean Treasure" shadowbox, one of her many creative ideas using sea-beans. Alice will be on display during the symposium with her many creations.



Dedicated Drifter **Margie Mitchell** of **Cocoa Beach, Florida** has long been a wonderful source of beach information for us. Now, Margie's wealth of sea-bean news has increased since she started her new job — everyday she rides an ATV up and down the six-mile stretch of Cocoa Beach as the city's Beach Coordinator. Tough job, Margie!

Dr. E. Charles Nelson's latest book ***Sea Beans and Nickar Nuts: A Handbook of Exotic Seeds and Fruits Stranded on Beaches in Northwestern Europe*** (published by the Botanical Society of the British Isles) was released in mid-August. His book is illustrated with beautiful Chinese ink paintings of the seeds by Mrs Wendy Walsh and sketches of the living plants by Alma Hathway. To have the seeds *and* the living plants described will help all of us with identification. Thank you Charles for making it possible for us to have autographed copies at the symposium.

When **Bill and Bess Pope**, who live in **Arkansas** and **southwest Louisiana**, discovered www.seabean.com, Bill said he was glad to learn he wasn't alone in his fondness for beach scavenging. He wrote, "We are blessed with miles of unimproved beach here in S.W. Louisiana where we search for our treasures. Sea beans have been scarce here this year but every thing is in its usual abundance. Shoes, bottles, toys, floats, plastic buckets, lumber (all kinds of lumber 4x4s, 2x4s). It seems that when the oil rigs get new machinery they just tear open the crates and jettison the lumber (it's great for building stuff around the camp grape arbor etc). We have found 4 bottles with notes, 3 from cruise ships in the Caribbean, and one from an oil research ship out in the Gulf. One time we found a near new pair of Red Wing boots not too far apart on the beach. It was about a week after a boat with 2 fishermen capsized off the Texas coast and they were never found." (Contact Bill at bkpope@earthlink.net or visit: www.billsbailwick.com.)

Live Octopus in a Beer Bottle

Correspondence from **Eileen Smith, Head Naturalist at The Marjory Stoneman Douglas Biscayne Nature Center** located in Crandon Park at 4000 Crandon Boulevard, Key Biscayne, Florida: "After 30 years in existence (some in an old hot dog stand and some in an old trailer) our Nature Center is moving into a brand new facility with a November Grand Opening. We do environmental education programs for all ages. Our Seagrass Adventure takes folks on a wading tour of the seagrass flats where we catch and release marine animals like sea hares, pipefish and sponge crabs and talk about how they relate to Florida ecology. We also do 2 1/2 mile hike to our Fossilized Reef which is a geological formation that dates back to 64 AD and is made of fossilized black mangrove roots. If any Drifters are in Miami, they can call (305) 361-6767 to arrange for a visit. We have had all sorts of interesting beach findings in my time at the center including a giant squid, an unopened soda can from Greece, a live octopus in a Budweiser bottle, a perfect large Nautilus casing, and of course, an impressive assortment of sea beans! ...This week on our seagrass trips we found a starnut palm, hamburger beans, golf ball pods and one of the most perfect sea hearts I've ever seen. Not bad beaning for July!"

Jeremy Smith, our correspondent from **Tasmania** and author of the beautiful reference book, ***Australian Driftseeds*** will be Station Leader at **Australian Antarctic Stations** for the next few years. Jeremy wrote, "Regrettably this move is likely to take me beyond the reach of drifting seeds, though not I hope beyond *The Drifting Seed* ... If I find a drift seed on those icy shores you will be the first to hear of it!"

The following is a portion of a recent news release about Jeremy's new position:

"Antarctic Leaders commence duty 10 August 2000. The recently appointed leaders of Australia's most remote workplaces have started their new jobs at the Australian Antarctic Division in Hobart. A university professor, two Army officers and an executive chef have been selected to lead teams of scientists and support staff at Australia's three continental Antarctic stations at Mawson, Davis and Casey and on subantarctic Macquarie Island. Jeremy Smith is an Associate Professor in Biogeography at the University of New England at Armidale, NSW. He was the Station Leader at Macquarie Island in 1996 and this time will go to Davis, the busiest station for Australia's antarctic scientific research program. The four Leaders will meet their teams at an intensive five day training program in Tasmania's central highlands early next month and will travel to their new posts in November. They will spend the winter of 2001, the fifty-fourth year of Australia's modern Antarctic program, in charge of between 15 and 20 men and women at Australia's isolated Antarctic outposts." Once again, Jeremy, congratulations on your new position. Stay warm with thoughts of The Drifters strolling the sunny beaches collecting sea-beans on your behalf.

Ruth Smith from **Arlington, Virginia**, currently has more than 100 of her seed necklaces hanging in an exhibit at **Delaware State University**. She also recently returned from England where she had appointments with **Kew** and the **Royal National Museum**. She had sent ahead some seeds that had been (mis)identified or needed identification. Ruth wrote that Kew received her very warmly and helped with many of the identifications which she will share with us at this year's symposium. Through the symposium weekend she will display a large part of her wonderful collection of seed jewelry from around the world. Ruth will also be one of the judges at the Sea-Bean Jewelry Contest.

INTERNATIONAL SEA-BEAN SYMPOSIUM 2000

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

Schedule of Events

Through the weekend: The Bean-O-Matic, collections, displays, experts, sea-bean polishing, seed jewelry from around the world, T-shirts, slide shows, books, authors, and 3 contests (including the new "ODD-BEAN Contest" - enter your "heartiest" sea heart, squarest hamburger, and/or smallest nickar from any of your sea-bean collections).

BOOKS BOOKS BOOKS !!!!!

We are very pleased to announce that Dr. E. Charles Nelson's latest book *Sea Beans and Nickar Nuts: A Handbook of Exotic Seeds and Fruits Stranded on Beaches in Northwestern Europe* (published by the Botanical Society of the British Isles) has just been released. A limited number of autographed copies will be available for the first time this weekend!

Also, the 1999 reprint of the *World Guide to Tropical Drift Seeds and Fruits* and both authors Charles R. Gunn and John V. Dennis will be available.

NEW FOR 2000!! Newly released *Nature a Day at a Time: An Uncommon Look at Common Wildlife* by Cathie Katz (published by Sierra Club Books/Random House).

Cathy Yow from Texas will present a slide show and talk about her popular book *Jewelry from Nature*.

Thursday October 12 (3 pm to 7 pm)

3 to 5 pm: Everyone is invited to meet in the library's small conference room for an informal get-together to introduce each other, discuss symposium plans, and exchange sea-bean news.
5 to 7 pm: Move to the symposium room to set up tables, chairs, displays, etc, for the weekend. All help accepted!
after 7 pm: Meet for dinner at Roberto's Little Havana Restaurant (about 1/2 mile south of the library at 26 N. Orlando Ave).

Friday October 13 (9 am to 5 pm) (Full Moon!)

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

Pete Zies will be available at The Bean-o-Matic to answer questions and explain Saturday's Bean-A-Thon.
Entry rules for **The Bean-A-Thon**, **The Sea-Bean Jewelry Contest** and **The Odd-Bean Contest** available at the door.
9 am: Library opens.
11 to 11:45 am: **Beginners' Beachwalking** (slide show) by Sebastian Inlet Park Ranger Ed Perry.
3 to 3:45 pm: **Sea-Bean Identification** (slide show) by Sea-Bean Expert and Pete Zies, curator of the World Collection.
5 pm : Library closes; we meet for dinner at Roberto's Little Havana Restaurant (south of the library at 26 N. Orlando Ave).

Saturday October 14 (8 am to 9 pm)

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

8 to 10 am: 2000 BEAN-A-THON: Collect sea-beans and/or toys (listed in the rules) on any beach between Canaveral National Seashore and Sebastian Inlet. **You must have your beans/toys at the library by 10:30.** Everyone who picks up a bag of trash from the beach will receive an **Official 2000 Bean-A-Thon Certificate.**
10:30 to noon: Judges will tally BEAN-A-THON entries at the library (awards at 7 pm tonight).
4 to 4:45 pm: **Creating Art from Nature** (slide show) by author Cathy Yow.
5 pm: **Sea-Bean Jewelry Contest Judging** (for entries submitted through the weekend).
5:30: **Odd-Bean Contest Judging** (for entries submitted through the weekend).
7 pm: BEAN-A-THON and contest awards and certificates presented. Raffle winners chosen.
7:45 to 8:45 pm: Dr. Curtis Ebbesmeyer from Seattle, Washington will present "What's Drifting in our Oceans Now?"

Sunday October 15

10 to noon: Take down displays, schedule dates for next year's symposium

TRAVEL and HOTEL INFORMATION for SYMPOSIUM 2000 in COCOA BEACH, FLORIDA

October 12 to 15, 2000

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

The Sea-Aire Motel has offered again to host The Drifters for the 2000 Sea-Bean Symposium with a generous discount for the weekend. Room rates vary between \$50 and \$70. For those planning to stay longer, weekly rates are also available at a discount.

The Sea-Air Motel is directly on the ocean and less than 1/2 mile from the Cocoa Beach Public Library

SEA-AIRE MOTEL 1-800-319-9637

181 N. Atlantic Avenue, Cocoa Beach, FL 32931



SEA-BEAN T-SHIRT FOR 2000

100% cotton shirt with roomy front pocket

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

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

If anyone would like to reserve a specific T-shirt size (or would like one by mail), please write or call **Sue Bradley (before Sept. 11)** to let Sue know what sizes and how many shirts you'd like.

Make checks payable to Atlantic Press, Inc.

Atlantic Press, Inc.

PO Box 510366

Melbourne Beach, FL 32951

321-723-5888

Suedonbradley@aol.com

This year's T-shirt identifies the sea-beans needed to win the **Grand Slam** in the Bean-A-Thon.

What's a **GRAND SLAM**?

☞ Find all five sea-beans shown in the T-shirt: hamburger bean, starnut palm, nickar, sea purse, and sea heart. ☜

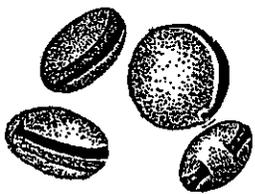
(A SUPER SLAM is when you find a Grand Slam AND a Mary's-Bean.)

The T-shirt also shows the LEGO® toys we hope to find this year.

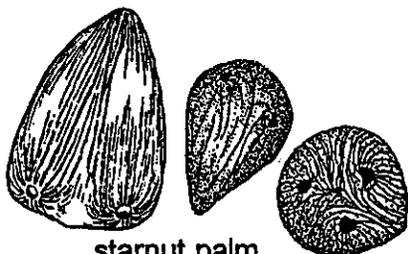
(Rules and categories for all three symposium contests will be available at the library and at the Sea-Aire Motel.)

Simple Guide to Common Drift Seeds

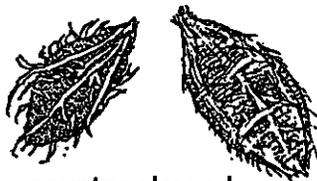
(Illustrations by Cathie Katz and Pamela J. Paradine)



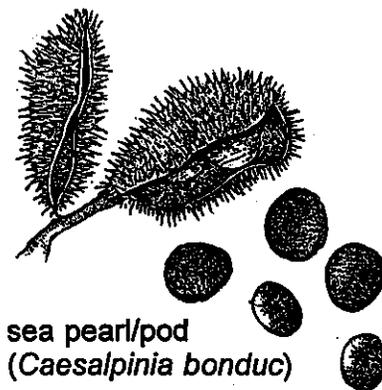
hamburger bean
(*Mucuna* spp.)



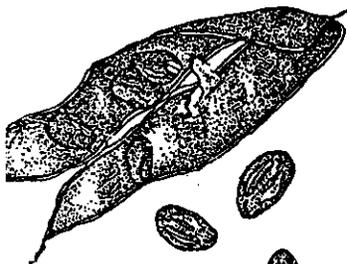
starnut palm
(*Astrocaryum* spp.)



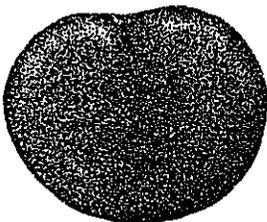
country almond
(*Terminalia catappa*)



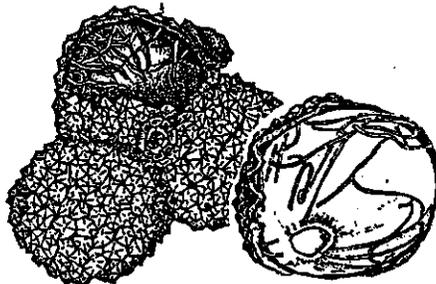
sea pearl/pod
(*Caesalpinia bonduc*)



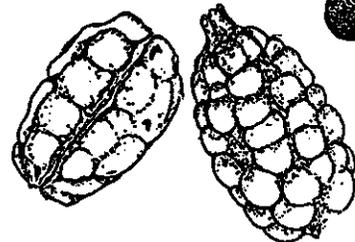
bay bean/pod
(*Canavalia rosea*)



sea heart
(*Entada gigas*)



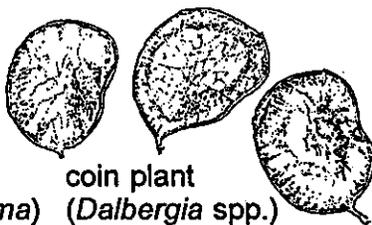
golfball/pod
(*Manicaria saccifera*)



hand grenade
(*Sacoglottis amazonica*)



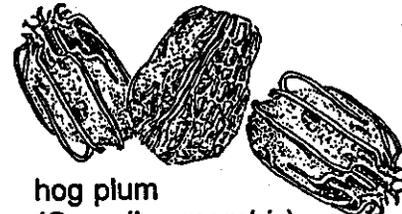
Mary's bean
(*Merremia discoidesperma*)



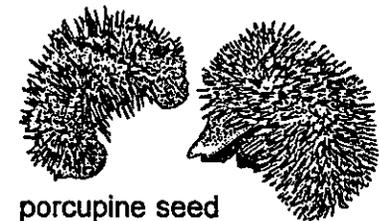
coin plant
(*Dalbergia* spp.)



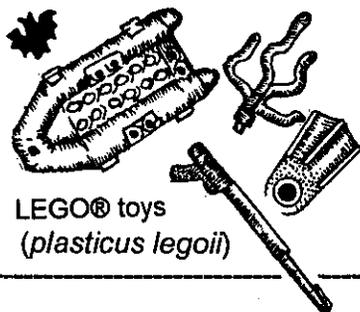
sea purse
(*Dioclea reflexa*)



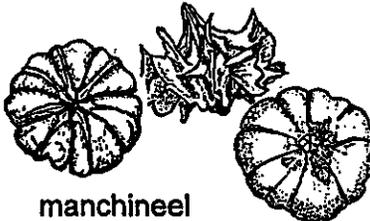
hog plum
(*Spondias mombin*)



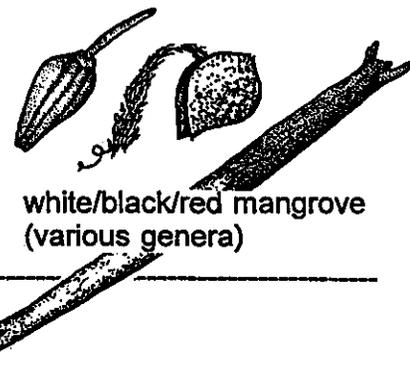
porcupine seed
(*Caryocar microcarpum*)



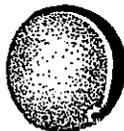
LEGO® toys
(*plasticus legoii*)



manchineel
(*Hippomane mancinella*)



white/black/red mangrove
(various genera)



The Drifting Seed

PO Box 510366
Melbourne Beach, FL 32951

stamp
here

