

The Drifting Seed

September 1, 1996

Vol. 2, No. 2

THE DRIFTING SEED

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

Dr. Charles R. (Bob) Gunn & Cathie Katz (CoEditors)

Please send us your notes and comments about drift disseminules and/or yourself for use in future issues. Please mail seeds and fruits for identification to Bob Gunn at the address below.

IMPORTANT NOTICE TO ALL READERS

All readers are invited to an open meeting December 4, 1996 in Cocoa Beach, Florida.

(See next page for details.)

The May 1996 issue of *The Drifting Seed* was mailed on time. This issue is being mailed early to let everyone know about the December 4 meeting. We appreciate your comments, suggestions, and support. If you want to continue receiving *The Drifting Seed*, you must send Bob Gunn a postcard or letter stating that you find the newsletter useful and that you'd like to continue receiving it.

We have a caveat: Because of postage charges, the *Newsletter* cannot exceed ten pages. This will keep the postage for domestic mail to \$0.32 per ounce and to \$1.00 ounce for foreign mail.

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From Your Editors: PRESENTATION AND MEETING NEWS

On December 4, 1996 at 7 pm, Dr. Bob Gunn will present a slide show and talk at:

The Cocoa Beach Public Library
55 S. Brevard Avenue, Cocoa Beach, Florida 32931
TEL: 407 868-1104

The focus of the presentation will be the legendary coco-mer. Bob will be available after his talk until the library closes at 9 pm to answer questions. Cathie Katz will also be available and will show Florida drift seed collections. Frank Seymour's sea-bean jewelry will also be on display.

Prior to the presentation, a meeting with your editors, Cathie Katz and Bob Gunn, will be held from 6 to 7 pm. All *The Drifting Seed* readers and friends are invited to attend and to contribute ideas. The distribution of *The Drifting Seed* has increased to hundreds of people worldwide since the first issue in May, 1995. This indicates a strong need for drift seed information. We've been receiving letters with interesting suggestions about topics for the newsletter, ideas for the upcoming new edition of *World Guide to Tropical Drift Seeds and Fruits*, and the possibility of forming a group. (An open letter from Wayne McAlister is included on page 8.) If we have a group, we need a name. Any ideas? We'd like to hear from all of you at the meeting on December 4, not only to meet you and to introduce ourselves, but to hear your ideas. Some of the topics we'd like to discuss are:

- 1) the future and future contents of *The Drifting Seed* Newsletter
- 2) the establishment of a reference drift disseminule collection in Florida
- 3) future meetings of our yet-unnamed group
- 4) the next edition of *World Guide to Tropical Drift Seeds and Fruits*.

Right now we have no way of knowing how many people will attend the meeting. If we need more time for discussion, Bob and Cathie will be available the following day in Cocoa Beach. The meeting place and time will be announced during the December 4 meeting.

Please drop us a post card if you'd like to attend. All attending are responsible for making their own hotel arrangements. The following hotels are just a few that are relatively close to the Cocoa Beach Library:

(Cocoa Beach is a busy, tourist town on east central Florida's barrier island about ½-hour drive south of Kennedy Space Center, 1 hour east of Disney World and Epcot, and 4 hours north of Miami.)

Holiday Inn (Beachside, very commercial (but convenient) part of Cocoa Beach. 1 mile north of library.)
1300 N. Atlantic Ave., Cocoa Beach, FL 32931
1-800-226-6587 (Prices: \$80 to \$130)

Silver Sands Motel (Small motel on the busy beach. Close to shops and food. ½ mile south of library.)
224 N. Atlantic Ave., Cocoa Beach, FL 32931
407-783-2415 (Prices: \$50 to \$70)

Surf Studios Motel (On less crowded beach. 2 miles south of library.)
783 S. Atlantic Blvd., Cocoa Beach, FL 32931
407-783-2791 (Prices: \$45 to \$80)



FEATURED ARTICLE
by
Dr. Curtis C. Ebbesmeyer
Seattle, Washington

For the past 22 years I have been an oceanographic consultant working on physical oceanographic problems including, for example, oil from the Exxon Valdez spill in 1989, icebergs drifting down iceberg alley, eddies in the Gulf of Mexico, eddies in the deep North Atlantic Ocean, long-distance waves riding the thermocline in the deep south China Sea, and floating sewage.

Since 1980 my parents have lived close by and I have lunch most Thursdays with them. You know how it is when you Mom asked what it is that you do? Well, one of those Thursdays Mom asked the question, but with a twist. She showed me a newspaper clipping describing many Nike shoes washing ashore along the beaches of Washington and Oregon. She asked if I could apply my current-tracking skills to figure out where the sneakers traveled across the sea.

That question crystallized decades of work. I finally realized that most of my professional life has been spent tracking things adrift in the sea. So for a little fun I contacted an artist-turned beachcomber, Steve McLeod, who it turned out had a list of 1,600 of the sneakers. Then I gave the date and location that the shoes had been spilled (I called Nike for that information) to my friend Jim Ingraham to run in his computer model of fish drift. He FAXed back an answer that day which agreed with the first reports from Steve. So we published that result and have been doing similar things ever since 1990.

It seems that every year or two there is a major spill of flotsam from container ships as they steam along the great circle route from the Orient to North America. In 1992 we tracked 29,000 plastic toys; this year it is 34,000 shoes again plus 34,300 hockey gloves washing ashore. All totaled I believe that more than a thousand of the 40-foot steel boxes are lost overboard each year worldwide. I'm trying to use the Mary Poppins approach to get folks concerned; with a spoonful of sugar the story becomes interesting. After a few years of reading of shoes, docks and gloves, I hope that people will begin to ask for themselves the question, "How much other stuff spills off those ships?" So far, it's turning out about half of the lost boxes contain hazardous materials.

Now I am at work on a book concerning things that drift, seeds being one of the 39 chapters. Other chapters are concerned with notes in bottles, aircraft parts lost at sea, icebergs, derelict vessels, drift logs, and floating waste (I am trying to write this chapter so someone will actually read about medical waste and other objectionable flotsam). If our Readers find something they would like traced with OSCURS, drop me a line and I will try to get Jim to make a computer run.

Seed Notes

Drifting seeds fascinate me because many float long enough for the currents to transport them between continents. Cathie Katz sent me a bag full of seeds she had combed from the beaches near her home at Melbourne Beach. From all the reading I have done, it seems the only tropical seed found north of California along the coasts of North America is one found in Oregon (an Indian almond; *Terminalia catappa*) by Gibbons and described in his *Beachcomber's Handbook*. So I took Cathie's bag of beans with me to the recent Beachcombers Funfair held 2-3 March 1996.

The idea at the Funfair was to let kids circulate for the first half day on Saturday and talk with scientists. So, in a far corner, I spread out some white paper and laid out Cathie's beans. The beans attracted a steady stream of kids and parents fascinated by the drifting beans. After explaining that none but one had been found in their neck of the woods, a number said they thought they had seen some.

Curtis Ebbesmeyer (Continued)

After three hours, I must have talked with a hundred families. As each person held the beans, many at first thought the seeds were stones. I explained that on our pebble beaches, they would find it hard to distinguish them from rocks polished by the surf. But, I said if you learn the trick to spot them you could make scientific news. I think many kids will be out there looking.

I have been going to the Beachcombers Fair for years now, each time making slide presentations about things that drift. I plan to take the sea beans each time, building a cadre of beachcombers looking for seeds. The 1996 Fair attracted more than 1,000 who each paid \$2. And each year it seems to be growing.

Beachcombers' Alert

After talking with thousands of beachcombers, I have learned of their deep fascination with objects that can be traced to their origin. Most of the flotsam you see on the beach does not carry a tag saying where it's from. But a few wear clues, such as the yellow plastic ducks with the company's logo, the sneakers with the Nike swoosh symbol, and the gloves with the Victoriaville insignia.

In the movie *Field of Dreams* starring Kevin Costner, he said "if you build it, they will come": for beachcombers it is "if you tell them, they will search". By distributing information about the shoes, ducks and gloves, I have received thousands of sightings. However, there was no media to regularly publish the stories. So I started publishing a quarterly, 4-page newsletter *Beachcombers' Alert*. The first issue deals with 34,300 hockey gloves spilled in the North Pacific Ocean and the story follows.

Ocean Surface Current Model (OSCURS) Predicts Arrival of Hockey Gloves And Other Floatable Debris From 49 Containers Lost In Mid-Pacific Fire In The Engine Room

On December 9, 1994, an engine-room fire left the 10-year-old, 798-foot containership *Hyundai Seattle* powerless and adrift at the mercy of high winds and rough seas in the mid-North Pacific Ocean at 45°N and 172°W, near the International Date Line 2,000 miles short of its destination of Seattle, Washington. The vessel had been underway from Pusan, Korea to Seattle with a load of 756 containers, when the fire broke out. Without power, the vessel broached into the high winds and seas; the resulting lurching stressed beyond the breaking point the cables holding a number of containers to the vessel.

Great profits come from strict adherence to conformity. In the container industry it means each box must be of identical height, length and width. So far they have got the system down to two standard sizes: the 20- and 40-foot long varieties. However, there are always a few misfits. It was those misfits that accounted for half of the losses from the *Hyundai Seattle*. Some shippers preferred jumbo containers measuring 45 feet long. To accommodate them, stackers placed these odd sized boxes atop some of the shorter 40-footers. To lash these monsters down, nonstandard steel cables were bent over the 5-foot difference. As the *Hyundai Seattle* lurched in the winter waves, it was mostly these odd lashings that broke.

Shortly after the fire, the crew was evacuated, leaving the vessel adrift 15 days. Between the time of the fire and the time when salvage tugs began towing her to Seattle, winds and currents transported the *Hyundai Seattle* like a huge sail boat approximately 700 miles at an average speed of 45 miles per day. Meanwhile the containers and associated debris were left to drift with the winds, waves and currents toward the west coast at a much slower drift rate on the order of 5 to 10 miles a day. All totaled, 49 containers are believed to have fallen overboard.

Flotsam Trajectory

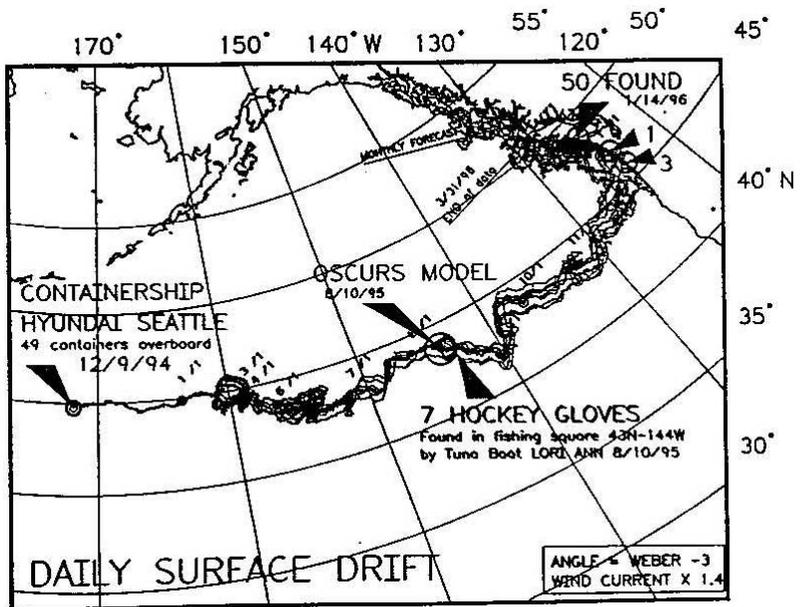
The present accident with 49 containers lost, represents one of the larger spills in the North Pacific. Therefore, beachcombers should anticipate considerable debris washing ashore. You may recall the 80,000 Nike shoes and 29,000 children's bathtub toys spilled in 1990 and 1992 in mishaps involving 21 and 12 containers, respectively. A year afterward, thousands of shoes and toys began washing ashore from Oregon northward into Alaska.

The table on page 7 lists debris, some of which may float, assuming that the containers opened during detachment from the containership or under wave-induced stresses. Because much of the shipment was destined to fill many retail orders for the holiday season, the debris includes festive items, including shoes and toys. Morphine Power Rangers and stuffed Easter bunnies may be amongst the flotsam. We are unsure if these will float, let alone remain at the sea surface for the 2000-mile, 13- to 15-month journey necessary to reach North America.

Far out to sea some of the *Hyundai Seattle's* flotsam has been spotted. On about August 10, 1995, Ron Anderson, skipper of tuna boat *Lori Ann* fished out seven hockey gloves floating in the vicinity of 43°N by 144°W, about 800 miles west of the Oregon coast. We obtained four of the gloves and found two to be right-handed and two to be left-handed. The gloves are believed to be part of the load, and the offshore finding was near the spot indicated by NOAA's computer drift model using older drift coefficients for the Nike shoes and bathtub toys (see table page 7). We were fortunate to obtain a calibration like this for the gloves prior to their arrival ashore, for it allows us to tune the model to a more precise arrival date.

This map shows the computer simulation for the drift of the gloves based on daily atmospheric sea level pressure data received through December 31, 1995. The empirical current factors (drag factor; deflection from wind direction) of the Ocean Surface Current Simulation (OSCURS) model have been adjusted so that the simulation connects the spill site with gloves spotted from the *Lori Ann*.

Previous model runs for the shoes and toys used current factors of 1.2 and 1.5, respectively, the higher the factor the faster the winds push on the drifting object. Obviously a waterlogged shoe floats with less windage than a plastic duck sitting atop the waves. A factor of 1.4 was necessary to match the drift of the gloves with the tuna fishermen's sightings. Therefore, it appears that the gloves are moving rather quickly and may have been blown ahead of other drifting objects such as shoes and women's dresses.



Shown here is the OSCURS model drift for the hockey gloves lost from the containership *Hyundai Seattle* on December 9, 1994. Small arrows along the trajectory indicate gloves' positions each day; the circles show positions on the first of each month. The daily trajectory ends March 31, 1995, because sea level pressure data beyond that date are not yet available from the U.S. Navy Fleet Numerical Oceanography Center. Projected locations of gloves farther north are based on computations using long-term average pressures (1946-1995).

When and Where to Find Flotsam

The computer simulation indicates hockey gloves washing ashore in a broad band in the vicinity of Cape Flattery, Washington in January, 1995 northward to the Queen Charlotte Islands during April, 1996, then southward to the Oregon coast through summer. The summer forecast has been derived by extending the computed winds with the long term average daily sea level pressure data through July, 1996. Because the flotsam has varying wind current factors, we interpret the forecast as showing debris for the next six months washing onto any of the shores of north California, Oregon, Washington, Vancouver Islands and southeast Alaska.

When the gloves were retrieved by the tuna fishermen, many 2- to 3-inch barnacles had grown on them during their eight months at sea. We are hopeful that much of the seagoing merchandise will be of use with a little cleaning as were the Nike shoes found several years ago. The thousands of Nikes that came ashore were spilled from just four containers (a fifth container of shoes apparently failed to open). Since the *Hyundai Seattle's* manifest also shows four containers of shoes, we expected much footwear to come ashore, but one to two months after the gloves arrived. In fact they began arriving early March, 1996.

Our list of possible floating debris is sketchy. Note that the table shows items for only 28 of the 49 missing containers. Furthermore, we do not know exactly what was in each container because we have been unable to investigate the many bills of lading detailing the materials. If you spot anything else coming ashore with the noted items, please keep a list, take photographs if possible, and jot down serial numbers. Letters accompanied with photos and maps are most appreciated. Please be as specific as possible, as that will enable us to reconstruct the debris' drift more accurately.

As we receive additional sightings we will update the OSCURS simulations. Because the drift patterns are quite sensitive to the wind current coefficients, and a wide variety of materials fell overboard, the trajectories for items other than hockey gloves will vary considerably from that shown in the attached chart. Most vital are the first sightings of drift items, because those observations determine OSCURS coefficients.

First Recoveries

Congratulations to the following beachcombers for reporting the first debris from the *Hyundai Seattle*. On January 14, 1996, **Alex Welcel** a beachcomber from Keeha, a small bay just south of Barkeley Sound on the western shores of Vancouver Island, found 50 to 60 hockey gloves along three miles of beach. Also found were chest protectors and dead birds apparently oiled from a recent spill of petroleum products (please let us know the source of the oil spill), and broken sheets of plywood, also possibly from the lost containers. Remarkably, the recovery date of January 14 closely matches the time (mid-January) and location (northern Washington-southern Vancouver Island) of landfall predicted by OSCURS. This was truly a blind test for the computer model.

The next day, **Steve McLeod** of Cannon Beach, northern Oregon, began finding chest protectors. A week later he found 23 gloves, along with three shin guards. All totaled, Steve found 33 hockey items along 11 miles of shore. **George Dalton** of Long Beach, Washington, found eight gloves on January 21, along with a jersey top with shoulder pads. **David Sommerton** returned to Seattle January 26 with several gloves found at Newport Beach, Oregon. It appears that chest protectors, gloves and shin guards are at the leading edge the *Hyundai Seattle's* debris field.

But the earliest report of all may be that of **Shery Kinnebrew**. She and friends found four items of hockey equipment last May 22, 1995 near Pachena lighthouse on the southern shores of Vancouver Island. It appears that some flotsam fell off the *Hyundai Seattle* as she was being towed back to Seattle. We speculate that Shery's finds fell off the container ship much closer in toward shore than the debris just now arriving.

Curtis Ebbesmeyer (Continued)

Because the debris field is still spreading apart, the debris cannot all come in at once. All these reports show that quantities of debris are arriving from mid-Oregon to Vancouver Island, British Columbia. As winter progresses, we anticipate the debris will move northward, reaching the Queen Charlotte Islands during the late winter, 1996. During spring when the winds come from the north, we anticipate recoveries all along the coast as far south as northern California. A year later they may begin showing up in Hawaii, and two years later in Asia. By the end of June 1996, shoes and gloves had been reported as far north as southeast Alaska. Some of these northern drifters will continue on northward into the Arctic Ocean, seven years later arriving in the North Atlantic, assuming of course they withstand the pack ice.

Possible floatable material known to have been in 28 of the 49 containers lost overboard from the containership *Hyundai Seattle*.

| Item | Number of Containers | Number of Cartons |
|---------------------------------|----------------------|-------------------|
| Stuffed toys | 1 | 4,146 |
| Plastic toys | 1 | 13,250 |
| Spiderman Asst II | 1 | 1,234 |
| Hockey Equipment (38,000 items) | 2 | 2,050 |
| Attaché case set | 1 | 305 |
| Footwear | 3 | 17,839 |
| Ladies' aerobic shoes | 1 | 1,131 |
| Girls' shorts | 1 | 86 |
| Ladies' 100% cotton pants | 1 | 2,276 |
| Ladies' knitted sweaters | 1 | 4,727 |
| Jackets | 1 | 121 |
| Dresses | 1 | 176 |
| Lamps | 1 | 2,255 |
| 75" halogen floor lamps | 1 | 1,100 |
| K. D. furniture | 2 | 984 |
| Chip boards | 1 | 7,000 sheets |
| Textiles | 1 | 297 |
| Speaker system | 2 | 2,276 |
| AC/DC adaptor | 1 | 209 |
| CD dual cassette player | 1 | 8725 |
| Audio products | 1 | 1,958 |
| Massagers | 1 | 1,103 |
| Onions | 1 | 13,600 bags |

[Please report all finds to Dr. Curtis C. Ebbesmeyer, 6306 21st Ave. NE, Seattle, WA 98115.]
 [Inquiries about the *Beachcombers' Alert!* Newsletter can also be sent to this address.]

RECENT LITERATURE

Wayne P. Armstrong contributed a wonderful article titled "SeaFaring Seeds" in the Summer 1996 issue of *Ocean Realm* Magazine about drift seeds. The article contains Wayne's beautiful photographs, showing not only the seeds, but the pods and plants from which they grow.

Clemont, E. J. & Foster, M. C. 1994. Alien plants of the British Isles: A provisional catalogue of vascular plants (excluding grasses). Botanical Society of the British Isles, London. [590 pp. ISBN 0-901158-23-2 (PB). Of special interest: "Appendix: Drift Aliens" on page 400 which lists 15 tropical drift species. Our thanks to Rudi Schmid for his sharp eyes and thoughtfulness].

NEWS AND NOTES FROM READERS

An Open Letter: A Suggestion

Wayne H. McAlister

USDI/F&WS

Aransas/Matagorda Island National Wildlife Refuge Complex

P.O. Box 100

Austwell, TX 77950 USA

Is there any interest or hope of getting active Readers together for the first-ever meeting? A get-together should stimulate the group. We might even have a brief business meeting and discuss (horror, but inevitable) dues to support *The Drifting Seed*.

My wife and I are stationed on the National Wildlife Refuge on Matagorda Island (about 40 miles North of Corpus Christi, Texas USA). I am in charge of an environmental educational center which has a small classroom, field equipment, and a dormitory that sleeps 18. I could make the facility available for a meeting. The big attraction would be 38 miles of virtually untrampled Gulf of Mexico beach and the proximity to Padre Island National Seashore with more miles if you rent a 4-wheel drive vehicle. Off the cuff, I could envision putting the word out, suggesting air travel to Corpus Christi. Then rent-a-car to nearby Fulton. From there, at \$20 per head, we have a boat to the island. We could spend the first day seeding part of the beach; the evening looking over everyone's unknowns (including a large backlog we have here) and discussing group business; the next morning back on the beach; and leaving the second afternoon. For those who care to, off the Padre Island.

Texas, like Florida, suffered few sea beans last year. However, this May we are nearly back to normal of Matagorda: *Entada*, *Mucuna*, *Caesalpinia*, *Andria*, *Astrocaryum*, *Merremia*, *Juglans*, *Cocos*, *Manicaria*, along with the occasional *Caryocar*, etc. I do not need to tell you that we may have zilch in May, but that is the month I would suggest for a meeting here.

News from the Dennises

Visits to Pacific coast beaches of Costa Rica in March, 1994 and June, 1995, by **John V. Dennis** and his son, **John, Jr.**, were highly productive in terms of tropical drift disseminules. Special interest was attached to finding Mary's-beans, *Merremia discoidesperma*. It was discovered that rivers and small streams bring substantial numbers to the coast in southwestern Costa Rica. These findings support those of Bob Gunn, who in a 1977 issue of *Economic Botany*, reported on several examples of Mary's-beans reaching islands far out in the Pacific Ocean. John, his son, and Bob have prepared an article that covers the history of this seed and its discovery on many world beaches.

John Dennis, Jr. writes, "After having had a taste of searching for tropical drift disseminules on Costa Rican beaches with my Father, I switched my attention to Belize. Working with a partner, I am trying to preserve a large tract of coastal rain forest in the Golden Stream district. So far, good progress has been made in raising the several million dollars that are needed. The money will be used both for purchasing land and helping to promote ecotourism. I have found a few tropical drift seeds, but the mangrove-lined Caribbean coast does not lend itself to beachcombing."

News and Notes From Readers

During a trip to Venezuela in June, **Kenn Arning** from Seattle, Washington, met a young man in a small Indian village holding three sea beans. When Kenn asked where he got them, the boy pointed to a man in a boat on the Orinoco River. The man, who also had sea beans in his pocket, took his boat to an undisclosed spot and returned with a dozen *Mucunas* which he gave to Kenn. (Kenn sent them to Cathie: they are *Mucuna sloanei*. Thanks Kenn!) Kenn learned that a popular ex-president of Venezuela always kept a sea bean in his pocket and the tradition continues. (Next July Kenn will visit the Comoros Islands between Madagascar and the Seychelles. We'll be eager to hear about Kenn's drift seed finds.)

Thanks to **Steve Bass**, manager of the Gumbo Limbo Nature Center (1801 N. Ocean Blvd., Boca Raton, FL 33432) for sending his beautiful "Common Drift Seeds of Southeastern Beaches" printed with photographs on waterproof and tear-proof paper. This is a wonderful guide for beachcombers.

C. Scott Boykin of Key West also keeps sea beans in his pocket for good luck and to give good luck to others. While researching loggerhead and green sea turtles in the Dry Tortugas for a scientific study this spring, Scott collected 38 sea hearts, 62 true sea beans, and 7 sea purses. On May 30, while he was on Horn Island, Mississippi, he collected 50 sea hearts, 34 true sea beans, and 3 sea purses. In August Scott will be attending Eckerd College in St. Petersburg to study marine biology. Thanks, Scott for the careful record keeping and the enthusiasm for collecting sea beans.

Thanks for **Gerhard Cadée** for the wonderful Dutch publication *Het Zeepaard* (The Seahorse) filled with shore information and book reviews.

Debbie Harper of Gulf Shores, Alabama wrote that she developed "a bad case of sea bean fever (SBF)" after finding 17 true sea beans and sea purses, 4 sea hearts, and 2 sea pearls from Gulf Shores and Fort Morgan. Her search for a SBF cure continues and we hope she never recovers.

Marianne and Indian Huston of Cape Canaveral have been living in Guam for the past 4 months, collecting all kinds of exotic shore finds. Marianne sent Cathie a box filled with shells, pottery shards, fossils, and sea beans that Cathie has never seen before and will show at the December 4 meeting.

Peter Zies of Lake Mary, Florida, revisited Keewayden (near Naples, FL) several times and collected about 36 nickernuts, some of which were irregular and discolored. Pete has some theories for the cause of this which he'll be able to discuss with us at the December meeting. Pete has also contributed several other items of interest, including more information of drift seed toys. We're looking forward to meeting Pete in December and seeing some of his unusual finds.

More From Bob:

We were pleased to receive three drift seed citations from **Professor G.G. Aymonin** (MNHM, Paris). All three were missing from our library, and thanks to **Joe Kirkbride, Jr.** (BARC, Beltsville) for obtaining copies for us. We also were pleased to hear from **Bill Rainy** (UC, Berkeley), who collected on Isla Aves, **M.G. Bingham** (Woodlands, Zambia), **G.D. Pike** (Darwin, Australia), and **David Williams** (Charlotte, NC).

More From Cathie:

If anyone has drift seed information related to East Africa, I would love to hear from you. I'm taking my first trip to Kenya next spring to discuss a long term project. I'm planning a cooperative women's art center near Nairobi. Included in the program will be crafts made with natural resources such as sea beans. My associate, Munene (Ed) Muchene from Columbia, Maryland, told me that *Mucunas* are plentiful along the Kenyan coast. This was in response to a photograph I showed Ed of a Kenyan bead reader (like a medicine man) with *Mucunas* mixed in with his beads. The information I hope to gather will be used in a book tentatively called *The Seeds of Hope*. The book will describe the project and the stories of the women with whom I'll work. In the book, I'd like to show how the seeds connect continents, culture, history, medicine, and art. Anyone who can contribute information about drift seeds (or other natural resources used in crafts) in Africa, please write to me at the address on the cover page.

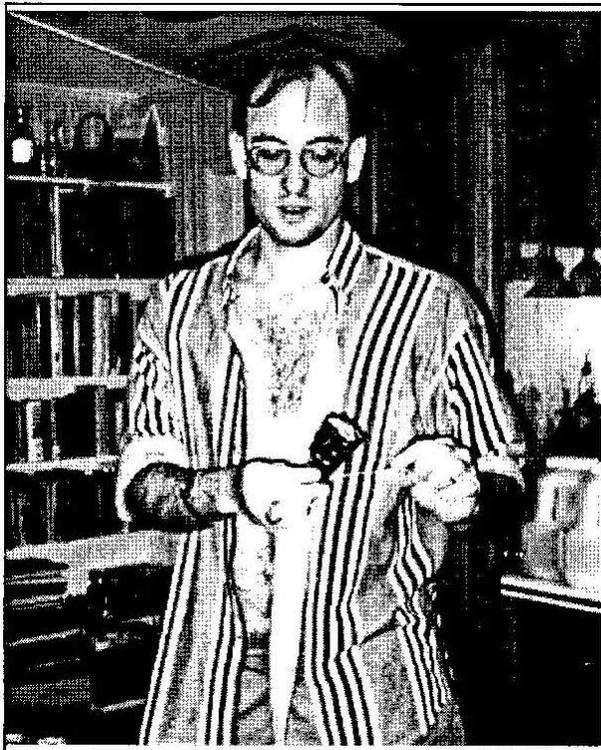
Collector's Gallery



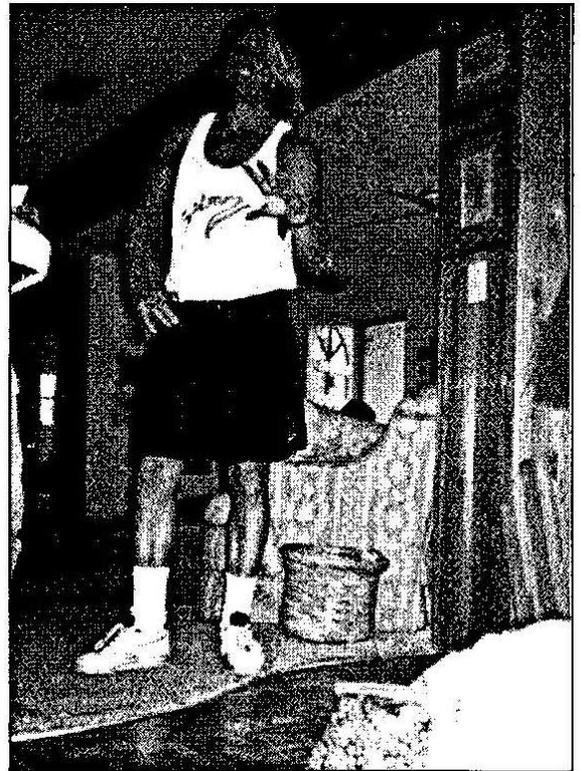
Curtis Ebbesmeyer of Seattle, WA



Cathie Katz of Melbourne Beach, FL



Peter Zies of Lake Mary, FL
with sea bean toy



Frank Seymour of Jensen Beach, FL
with bags of sea beans