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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.

From Your Editors

The November 1995 issue of *The Drifting Seed* was mailed on time, and we appreciate your subsequent comments, suggestions, and support. This *Newsletter* is the result of a fortunate meld of our talents, but its success resides in your hands. We need to fill the following columns and only you can do this: **Feature Articles** (mainly about collectors and contributors), **News and Notes from Readers, Recent Literature, Collector's Gallery** and **Unknown Disseminules** Photographs. We welcome your suggestions for other columns. If possible, please send your articles on either $5^1/_4$- or $3^1/_2$-inch diskettes using ASCII or WordPerfect for an IBM-compatible computer.

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

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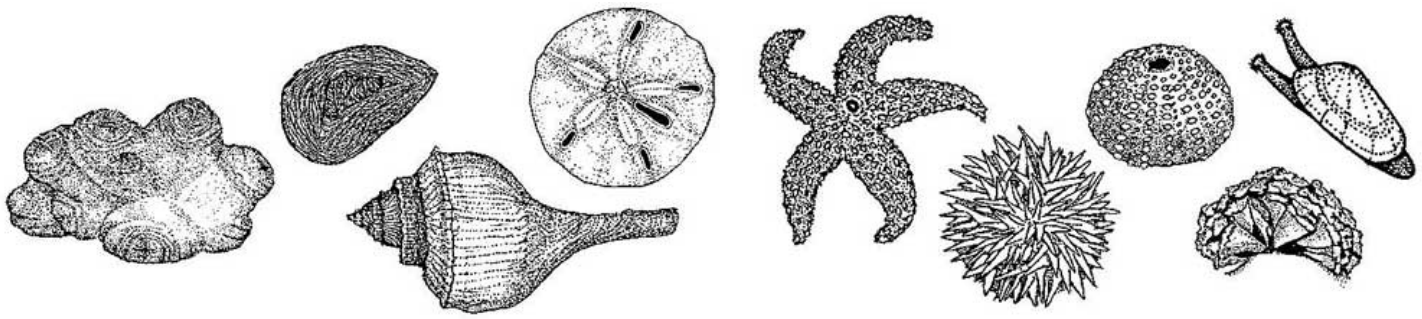
News from Bob

Last winter I organized the drift disseminules collection and related files. This winter I data banked the Catalog and Bibliography of Gunn-Dennis-Paradine book using a new computer which is much faster and has a much larger memory capacity than my old one. The Catalog has been entered into the DELTA computer system. DELTA is a taxonomic database which is designed to aid the taxonomist in handling data and preparing papers. This system produces taxonomic manuals (the Catalog for the book), information retrieval, online identification, numerical analysis, and conversion for any special requirement. The Bibliography is recorded into a PCFile. I have yet to record the introductory text and of course to add new taxa and new data. I have extensive files to consult for the new taxa and of course the actual disseminules for additional data. It is my intention to complete most of these tasks by next year at this time.

Many thanks to Joe Kirkbride, Jr. for his help with DELTA and with some of literature for the Muir article.

On the personal side: Since we moved to Brevard and have a naturalized house lot (no lawn), I decided to plant as many plant families as I can. So far I have 105 seed-bearing plant families represented in our “front yard” and along our gravel path. A big help was the addition of a waterfall in front of the house. I hope (but really doubt) to have at least 200 of the 399 plant families that I recognize planted within another year or so. I keep in track of the plants, what I have, and what I need using PCFiles.



News from Cathie

This year was the most disappointing sea-bean season I’ve known since moving to Florida. And I’m not the only one going through bean-withdrawal. At a presentation about beachcombing that I gave in March, a common question was, “Why don’t we find sea-beans on our beach anymore?” Some of the long-time Florida residents talked about the old days when hundreds of sea-beans could be collected in one afternoon. I suggested the development of the rain forests (where lots of sea-beans grow) might be a cause. But after the presentation, I met biologist Tim Kozusko of Cocoa Beach who suggested that the lack of drift seeds might have been caused by the unusual storm activity. “As sea-beans drift north from South and Central America, the hurricane activity might cause them to spin out to sea, blowing them out to the middle of the ocean before they can reach the Gulf Stream,” Tim explained.

Florida experienced the highest number of hurricanes in any one season this year. The drift material that normally washes up with the storm tides just didn’t include the expected armada of beans. And then last month, after a severe unseasonal storm, our beaches were loaded with tempting debris – hundreds of starfish, shells, sea urchins, opercula, mollusk egg cases, driftwood and sea squirts – but *no* sea beans! *NOT ONE!* And none of our Space Coast bean spotters reported any sightings either.

As if to prove Tim’s explanation, beachwalkers Marianne and Indian Huston of Cape Canaveral, found hundreds of drift seeds while visiting Antigua this winter. They found the sea-beans in the wrack with starfish, sea urchins, shells, driftwood and sea squirts. The drift seeds they found included ea hearts, true sea-beans, sea purses, nickernuts, coconuts, country almonds, West Indian locusts, and sea coconuts (all the same species that we typically find in Florida). The Hustons were pleasantly surprised at the wealth of beach treasures because they were well aware of the lack of drift seeds on their Florida beach before they left.

So what’s going on? We’d like to hear from other beaners with information that might explain this bean shortage.

Featured Articles

John Muir, M.D., D.Sc.

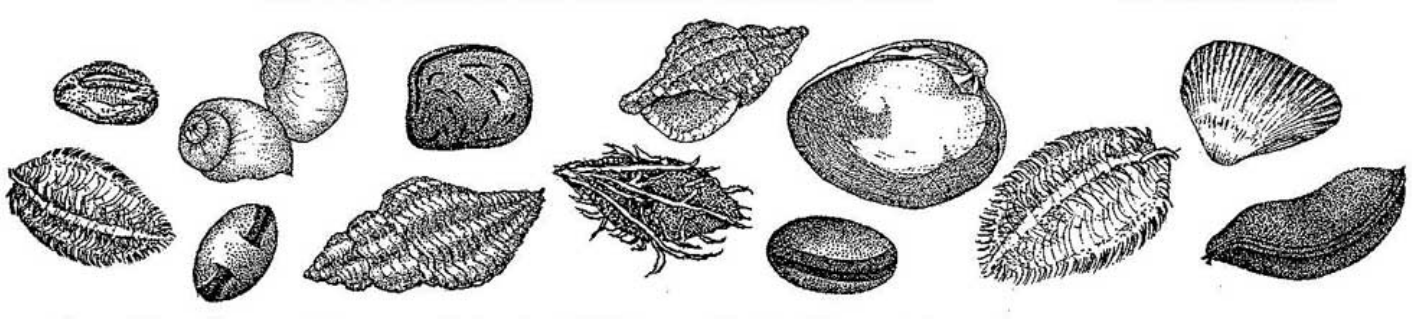
(1874-1947))

by Bob Gunn

With notes from Mrs, H.J. Stabbet (Muir's daughter), Professor P.G. Jordaan and Dr. R.D. Moffett (University of Stellenbosch), Rosemary Angel (Royal Botanic Gardens), and the cited literature.

John Muir (physician, naturalist, cultural historian, folklore expert, and antiquary) was born in Castle Douglas, Scotland, the son of John Muir and Eliza Eley. Having studied arts and literature at the University of St. Andrews, he qualified as a doctor of medicine in 1896. He then served as a ship's surgeon in the Dutch and then the British merchant fleets before going to South Africa at the age of twenty-two, where he practiced medicine in Worcester, Strydenburg, Molteno, Sterkstroom, and Albertinia. He became interested in haemophilia and studied twelve generations of patients to determine transmission and published his findings. He also solved some mysterious deaths in the Riversdale District by ascertaining that the deaths were caused by bread poisoning. The bread wheat was poisoned by a species of Senecio which was a weed in wheat fields.

He was always interested in plants, contributing to Charles Pettman's **Africanderisms** (London, 1913) a list of common plant names from Riversdale. While making a comprehensive collection of plants in the Riversdale District, Muir became interested in collecting tropical drift disseminules and sea shells.



Upon his retirement from Medicine in 1923 he settled in Riversdale and concentrated his efforts on his three collections and his study of ornithology, genealogy, folk lore as well as his collections of published vernacular names for plants, shells, and birds (Hopkins, 1972; Nelson, 1978; Gunn and Codd, 1981). He also saved many Africana memorabilia, especially the 'weekbord' (a primitive almanac) dating before 1800, which had accompanied the Great Trek (van Bleck, 1972).

Muir received his D.Sc. from Edinburgh University upon completion of his thesis on the flora of Riversdale, South Africa (Muir, 1919). During 1929 he gave his drift disseminule collection to the botanical museum of Stellenbosch University, and this University granted him an honorary D.Sc. A Carnegie Traveling Grant funded his study of drift disseminules and fruits in Africa and England. The results of his collecting and studying were published under the title *Seed-drift of South Africa* (Muir, 1937). His plant collection was donated to the National Herbarium, Pretoria; the Bolus Herbarium and the Compton Herbarium, both of Cape Town; and the Albany Museum, Grahamstown. His sea shell collection was donated to the South Africa Museum. He is remembered for his knowledge of the plants of the Little Karoo, and his contributions to South Africa botany are commemorated by the genus Muiria N.E. Brown (Aizoaceae) and by several species. Contrary to Stafleu and Cowan (1981), Muiria was not "named after a John Muir (and his daughter Hortense Muir)…" The genus was named

for the South African John Muir, and his daughter is commemorated by *Muiria hortenseae* D.E. Br. This species is the type for the genus. Volume 17 of **Flowering Plants of South Africa** (Pole Evans, 1937) has an elegant dedication to John Muir.

In Muir (1937) we learn of the relative ease of beach collecting and the difficult task of identification. However with the help of the travel grant, Muir was able to identify ninety percent of his disseminules. He was helped by visits to the Royal Botanic Gardens Herbarium, where there is a classic drift disseminule collection and a separate comprehensive carpological collection. He was also helped by collections that he made from the beaches and plants of the Ivory Coast, Gold Coast (now part of Ghana), Cameroons (now United Republic of Cameroon), and French Equatorial Africa (a former federation of French territories in central Africa). He noted that the South African beach drift was different from those of the eastern Indian Ocean, because of disseminules arising from Madagascar. His efforts to learn more about the Madagascar disseminules was made more difficult because no collections were available at the Museum National d'Historie Naturalle, Paris, France.

Muir carried out a detailed and extensive survey of exotic drift disseminules for the Riversdale District, Cape Town, South Africa. Without his collection, which I have studied and photographed, and his dogged determination to identify the disseminules, we would know very little about South Africa drift disseminules.

References by Year

Muir, J. 1929. The vegetation of the Riversdale area, Cape Province. Botanical Survey of South Africa Memoir No. 13, pp 1-82. The Government Printer, Pretoria. [Eds. Note: Muir's D.Sc. thesis.]

Muir, J. 1929. Folk-lore of some South African sea beans. Journal Medical Society of South Africa. August 24, pp. 457-458. [Eds. Note: Scottish, Scandinavian, and South African history and lore. The South African data are unique.]

Muir, J. 1931. Alien and indigenous fruits and seeds in the South Africa beach drift. Riversdale, South Africa. [Eds. Note: This typeset and privately-published paper without a source was dated 19th September. Muir annotated the copy I have, and I also have a typewritten, unedited version from Rosemary Angel. The latter copy bears two annotations: "Sent with letter Dr. John Muir with seed for determination, probably *Convolvulacaeae Ipomoea* sp. Reply sent 12.X.31." The second: "Specimen sent to Museum: *Ipomoea* sp. In drift seed case." A partial list of the "strand flora" (drift disseminules): Muir lamented about the slow and tedius task of identification.]

Muir, J. 1931. The romance of a floating seed *(Mucuna gigantea). The South Western Echo and Riversdale Advertiser.* Sat 21 November. [Eds. Note: This document taking South African drift seeds of *M. gigantea* (Willd.) DC. to Portuguese East Africa to show to the Shangian natives. .More drift *Mucuna* seeds were collected, and in Kafir pods were brought to John and his wife, the lianas were found, and the identification made. Muir also was introduced to the hairs on the pods which cause intensive itching.]

Muir, J. 1931. The romance of a floating *seed (Mucuna gigantea). Mossel Bay Advertiser.* Sat. 28 November. [Eds. Note: A reprint of the above. Both were used in a widely distributed lead-article in the *East London Despatch.]*

Muir, J. 1932. The beach drift of South Africa. Journal Botanical Society South Africa. Part 18, pp. 5-10. [Eds Note: A scientific paper with black and white disseminule photographs. Muir recognized both locally produced and exotic disseminules.]

Muir, J. 1934. The correlation of arrival sites of alien seeds with ocean currents. South Africa Geographical journal 17:13-18. [Eds. Notes: Evaluation of maximum-arrival sites for disseminules along Riversdale beaches.]

Muir J. 1934. The distribution of *Ipomoea pes-caprae* and *Calystegia soldanella* in South Africa. Bulletin Miscellaneous Information 1934:44-45. [Eds. Note: Drifting caused these two species to grow together on a Riversdale beach.]

Muir, J. 1935. A South African river as an agent in plant and animal dispersal. South Africa Geographical Journal 18:59-61. [Eds. Note: Effects of flooding by the Langebergen River on beach drift.]

Muir, J. 1936. Another romance of floating seed. The South Western Eco and Riversadle Advertiser. August 23. [Eds. Note: For eight years, Muir worked on the identification of *Mucuna myriaptera*. He received several misidentifications before the correct identification was made using a loaned herbarium sheet with a mature fruit from Madagascar.]

Muir, J. 1937. The seed–drift of South Africa and some influences of ocean currents on the strand vegetation. Department of Agriculture and Forestry Botanical Survey Memoir No. 16, pp.1-122. [Eds. Note: Opus magnifica.]

Pole Evans, I.B.P. 1937. The flowering plants of South Africa. Vol 17. L Reeve & Co., Ashfors, Kent, England.

Hopkins, H.C. 1972. Muir, John. In *Dictionary of South African Biography.* Vol. 2:500-501. Tafelberg-Uitgewers Ltd., Cape Town.

Van Bleck, N. 1972. Muir, John: In *The Standard Encyclopedia for Southern Africa.* Vol. 7:633-634. Nasou Ltd., Cape Town.

Gunn, C.R., J.V. Dennis, Sr., and P.J. Paradine. 1976. *World Guide to Tropical Drift Seeds and Fruits*. pp. 240. Quadrange/The New York Times Book Company, New York. [Eds. Notes: Pages 34-35 summarize the beaches where Muir collected, the ocean currents, and the sources of disseminules.]

Nelson, E.C. 1978. “Drift seeds” and “dear dirty Dublin”: Correspondence between John Muir and Matilda C. Knowles, 1930-1933. *Journal South Africa Botany* 44:187-200. [Eds. Note: Some of Muir’s identification problems are documented.]

Gunn, M. and L.E. Codd. 1981. “Botanical Exploration of Southern Africa”: Introduction volume in the *Flora of South Africa.* A.A. Balkema, Cape Town.

Stafleu, F.A. and R.S. Cowan. 1981. Taxonomic Literature: Volume 3: Lh-O, Second Edition. Bohn Scheltema & Holkema, Utrecht.

Drift Seeds Used in Toys and Games

by Peter Zies
(Toy illustrations by Peter Zies)

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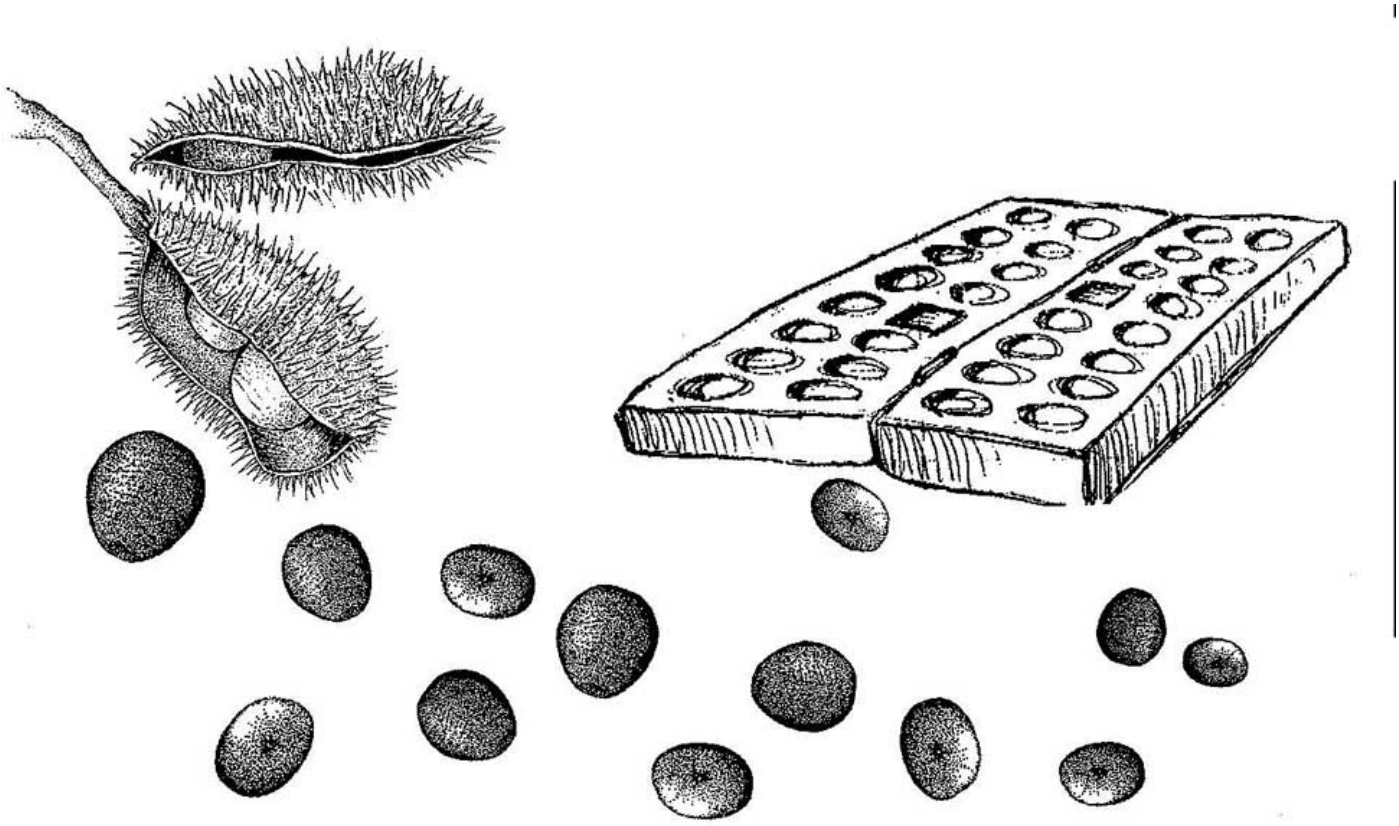
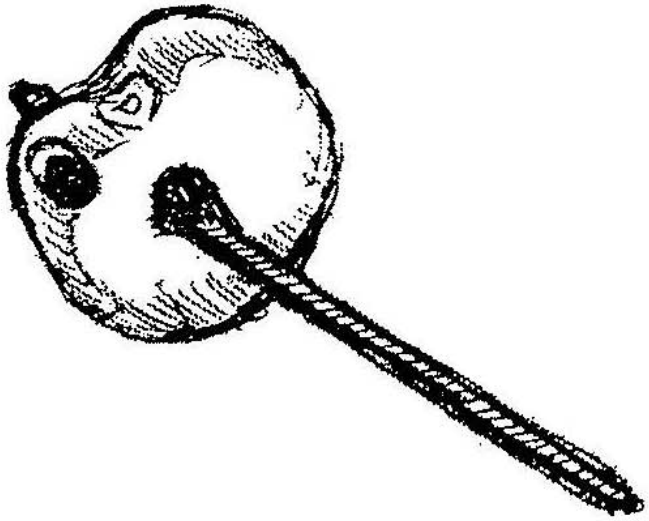
I am an amateur naturalist. As such, my interest in sea-beans arises mainly from their values as curios and their cultural uses. These uses spark my imagination. I have found references to the uses of drift seeds as good-luck charms, jewelry, folk remedies, snuff boxes, and teethers. However, I have found only brief mention of their conversion into toys or games.

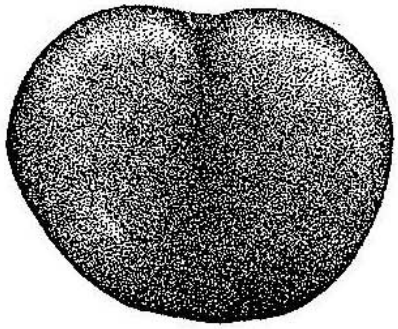
Recently, I have received drift seed toys or games from individuals familiar with my interest in drift seeds. The first is similar to the **Island Waurie** strategy game described by Wayne Armstrong in his nickernut (*Caesalpinia bonduc* (L.) Roxb.) article (*Pacific Horticulture* 51(4): 39-45, 1990). The design of my board differs slightly from the Armstrong illustration: Mine has one square and fifteen circular wells on each half of the game board. The board, probably made of teak, was bought in equatorial Africa and came with a bag of nickernuts.



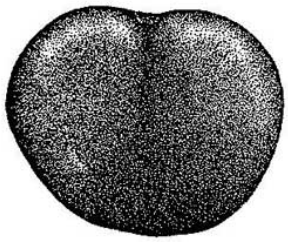
The other two toys are more unusual. Neither were acquired at their place of origin, thus their background information is limited. They are small, hand-held items utilizing one or more sea hearts (*Entada gigas* (L.) F. & R.) in the body of the toys.

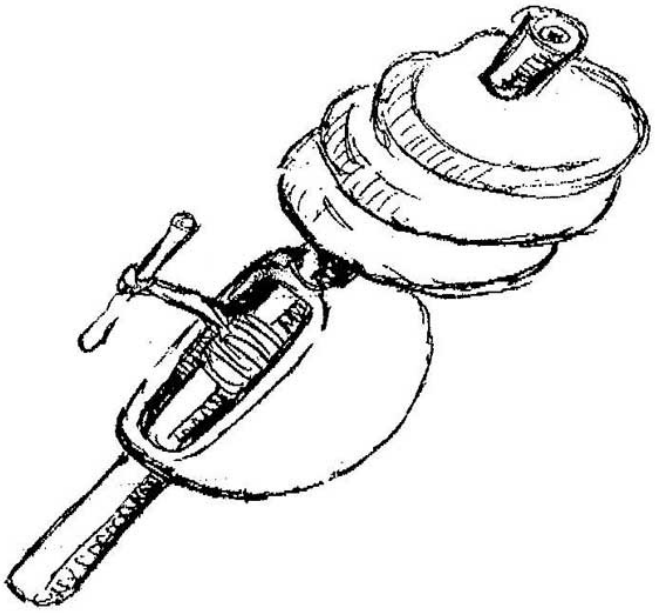
The first is a type of whistle. A medium size sea heart has been hollowed out and impaled on a $5^1/_2$-inch long skewer with ½-inch projecting out the top and the remainder out the bottom of the seed. The skewer is sealed to the sea heart with an unknown black substance. A pea-sized hole is drilled into one of the sea hearts "humps." The long end of the skewer is rolled between the fingers while blowing across the hole in the sea heart. It is played like a flute, producing short, rapid whistled notes. This whistle was found in the gift shop of the Fairchild Botanical Gardens, Miami, Florida.





The second is best described as a hand-held top. Three sea hearts of relatively equal size are stacked and impaled on a bamboo-like stick, $7^1/_2$ inches long. A fourth sea heart was cut in half, pierced through the top and bottom, and used as the handle or grip for the top. Coarse string ($21^1/_2$ inches long) has been tied, wound around the stick, fed through a hole in the grip, and tied to a small wooden toggle ($1^1/_2$ inches long). When the grip is held without touching the stick and the toggle pulled briskly to the length of the string and released, the top will spin in one direction and rewind itself in the other direction as quickly as it was unwound. The top has a painted label "Jamaica 199–" with the last number in the year scratched out.





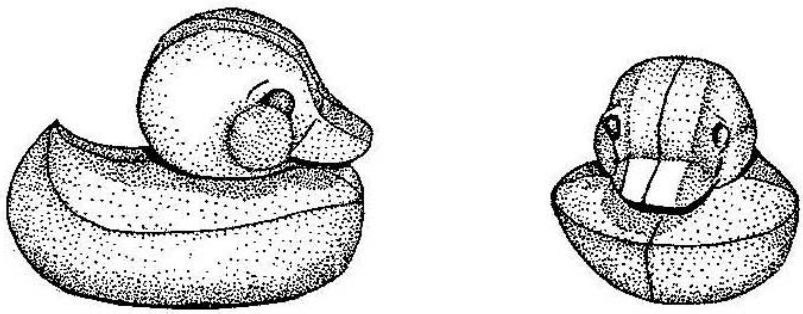
These three examples are just a small sample of the uses of drift seeds in toys and games. If anyone has other examples, please let me know.

News and Notes from Readers

Gerhard C. Cadée (Neth. Inst. Sea Res., PO Box 59, 1790 AB Den Burg, Texel, The Netherlands) gave a poster presentation on tropical drift disseminules from the Dutch coast at the Sixth International Workshop on Plant Taphonomy in Bonn, 12 November 1994. An abstract is available. A short paper will be published in **Neues Jahrbuch für Geologie und Paläontologies, Monatshefte**. He plans to publish a paper on drift seeds and fruits he collected on the Seychelles and in Djibuti.

Charles Nelson writes that he was married last July, resigned as taxonomist in the National Botanic Gardens, Glasnevin, and now they live in England, where he will continue his botanical work. Charles has written about drift seed, and I hope he will prepare a report for this *Newsletter*.

Kevin Steiger of Kaneohe, Hawaii mailed freshly found kukui nuts to Cathie Katz in Florida to compare with the shiny polished kukui nuts used to make traditional Hawaiian necklaces. Kukui *(Aleurites moluccana)* or candlenut tree is the state tree of Hawaii. Kevin noted that the kukui nuts are as common to some of the Hawaiian beaches as sea hearts are to the Florida beaches.



YELLOW DUCKIE UPDATE

John McAleenan, a columnist for Florida TODAY Newspaper wrote about the yellow duckie story that **Curtis Ebbesmeyer** from Seattle sent to us last year. In his December 11, 1996 column in *Florida TODAY*, John McAleenan wrote, "…there is nothing about the ocean that does not amaze me or intrigue me …I am out there these days searching the ocean horizon for a flotilla of yellow plastic ducks – bathtub toys. Thousands upon thousands of bright yellow duckies." John continued to write about Curtis Ebbesmeyer's and **James Ingraham's** research on ocean currents and their worldwide search to locate these plastic ducks: "On Jan. 10, 1992, a cargo ship was plowing through heavy storms on its way across the Pacific to Tacoma, Wash. Along the way, it lost several containers, each carrying plastic bathtub toys. How many toys? About 30,000. And not only yellow duckies. Also adrift in the sea are bobbing green frogs, bright red beavers and blue turtles… Almost a year later, 400 of the duckies were found beached near Sitka, Alaska. Having penetrated the Bering Strait between Alaska and Siberia, they may now be temporarily frozen in the Arctic Sea, but something called the Transpolar Drift may eventually move this plastic armada into the North Atlantic… And from there? Maybe a ride to Great Britain's shores, then perhaps the tradewinds to Spain, Portugal and off the coast of Africa, then maybe a hurricane ride over to the Gulf Stream, and then maybe to 13th Street South on Cocoa Beach, where I go every morning." [Eds. Note: John McAleenan may have written that last part as his tongue was stuck in his cheek, but who knows? Maybe a beachwalker somewhere else in the world will find a duckie on the beach and contact us.]

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