

ALEURITES ERRATICA DEG., DEG. & HUMMEL SP. NOV., (EUPHORBIACEAE)
DES STILLEN OZEANS

Otto & Isa Degener und K. Hummel

History repeats itself, but this time in a minor way. The double-coconut or Lodoicea maldivica (Gmel.) Pers., is known from time immemorial as jetsam along the coasts of India and the Maldive Islands. As commonly found, it is a drupe up to 3 dm. long and 8 dm. in circumference, and has a two-lobed apex and base. Whence such propagules had come and from what plant was long a mystery. None could grow to produce a seedling for identification as, to become light enough to float from their place of growth, their fruits had been freed of their heavy seed by decay. Though imperfectly known, F. Pyrard described the fruit or perhaps the endocarp in 1611 in his "Discours du Voyage des Francais aux Indes Orientalis." Only after the Seychelles had been discovered in 1743 by Mahé de la Bourdonnais was the mystery surrounding it solved. This large disseminule came from a palm growing on the Islands of Praslin and Curieuse of that archipelago. The drupe is certainly not the largest fruit in the Plant Kingdom - a common pumpkin (Curcubita pepo L.) may exceed it in size - but its seed is certainly the largest.

As botanical consultants for the Federal Aviation Administration in the winter of 1957-58, we Degeners spent some time on Canton Atoll, Phoenix Group, in the Pacific Ocean just north of the Equator. During our spare time we amassed a representative collection of the hundreds of thousands of propagules that winter storms had piled up on its twelve mile long, porkchop-shaped beach. Of the hundred or so species collected, Deg. & Deg. No. 24,627 intrigued us particularly.

This rather uniform seed was abundant along the beach - probably tons of them. All were black like the seeds of the kukui or Aleurites moluccana Willd., after the latter have been exposed to the elements and particularly to the mud of a taro patch. Our novelty has the general shape of the common kukui, yet is conspicuously different in superficially resembling a husked walnut in its longitudinally furrowed "shell" or testa. Though sets of the Canton Atoll collection for a few decades have been on deposit at the New York Botanical Garden and have been widely distributed to botanical institutions throughout the World, no one has been able to identify No. 24,627. This find was listed first in *1974, and again listed and figured in **1976. As in the case of the wandering double-coconut, we have the temerity of describing this wandering kukui as a new species.

*Degener, O., & I. Flotsam and Jetsam of Canton Atoll, South Pacific. Phytologia 28(4):405-418. 1974.

**Gunn, C.R., & Dennis, J.V. World Guide Trop. Drift Seeds and Fruits. Pp. 100, 101. 1976.

Not properly equipped for microscopic work, we turned to *Prof. Dr. Dr. Karl Hummel of the Institut fuer Biologie, Tuebingen, (W.) Germany for help. The present bilingual, coauthored paper is the result. The reader should note that the seed was first listed (Deg., O., & I., ibid., p. 408) as "Aleurites sp. nov. ? with walnut-marked seed, D. & D. 24,627." One particular seed thus numbered, deposited in the above institute, is the holotype; while, with a "loooong" stretch of the imagination, similar seeds that had wandered from some unknown region, had been cast on the atoll's shore and been gathered at the same time, are "pseudoisotypes."

Seeds of **Aleurites moluccana (L.) Willd., and of ***A. moluccana var. remyi (Sherff) B.C. Stone, both collected in the Hawaiian Islands; and those of the unknown taxon, collected as jetsam on Canton atoll, are compared. Differences induce us to describe the latter as:

ALEURITES ERRATICA Deg., Deg. & Hummel, sp. nov. Semen irregulariter plus minus profunde infossus aut numerosis parallelis costiformibus sive incurvis et raniformibus acclivitatibus signatum. Testa perspicue (Circiter tertia parte) tenuior quam testa A. moluccanae et A. m. var. remyi. Quad ad testae cellas pertinent, palisado-sclereidum parietes minus incrassati et canalibus conspicue visilibus praediti sunt.

Die Oberflaeche des Samens von Aleurites erratica hat regelmaessige parallele rippenartige Erhebungen, zwischen denen deutlich abgesetzte Rinnen verlaufen (Abb. 1); oder die Erhebungen sind gekruemmt und verzwaigt oder die Samenschale weist starke unregelmaessige Vertiefungen auf. Die Samen von A. moluccana und A. m. var. remyi sind mehr oder weniger glatt bis leicht gefurcht (Abb. 2 & 3). Die Hartschicht der Samenschale, die den weitaus groessten Teil der Samenschale bildet, ist bei A. erratica in zweifacher Hinsicht deutlich schwaecher ausgebildet als bei A. moluccana und A. m. var. remyi. Die Zellenwaende der Palisadensklereiden, welche die Hartschicht bilden, sind bei A. moluccana und der Varietaet remyi staerker verdickt und ihre Tuepfelung ist oft nur unvollstaendig sichtbar (Abb. 4 & 5), waehrend die Palisadensklereiden von A. erratica ein etwas weiteres Lumen besitzen und die Waende von breiteren Tuepfelkanaelen durchsetzt sind (Abb. 6).

Frau Deml danken wir bestens fuer die Anfertigung mikroskopischer Schnitte, Herrn Dr. Deml und Frau Thumm fuer mikrophotographische und photographische Aunahmen.

*"Prof, Dr. Dr.", is the proper title.

**Degener, O. Plants Haw. Nat. Park, 193-199. 1930.

***Sherff, E.E. Field Mus., Bot. Ser. 17:558. 1939; Deg. & Deg. Fl. Haw. 190; Aleurites; Remyi 12/27/57; Stone, B.C. Pac. Sc. 21 (4):553. 1967; Deg. & Deg. Some Aleurites Taxa in Haw. - - -. Phytologia 21(5):316. 1971.

Should the reader not like our considering this errant kukui a distinct species, he can lump it. This study, resembling one based on a fossil find, should alert botanists and foresters in the South Pacific to watch for the mysterious tree that is responsible for these ornamental seeds wandering about on ocean currents. Precisely what is the tree Aleurites erratica like, and where is it native? We are so curious!

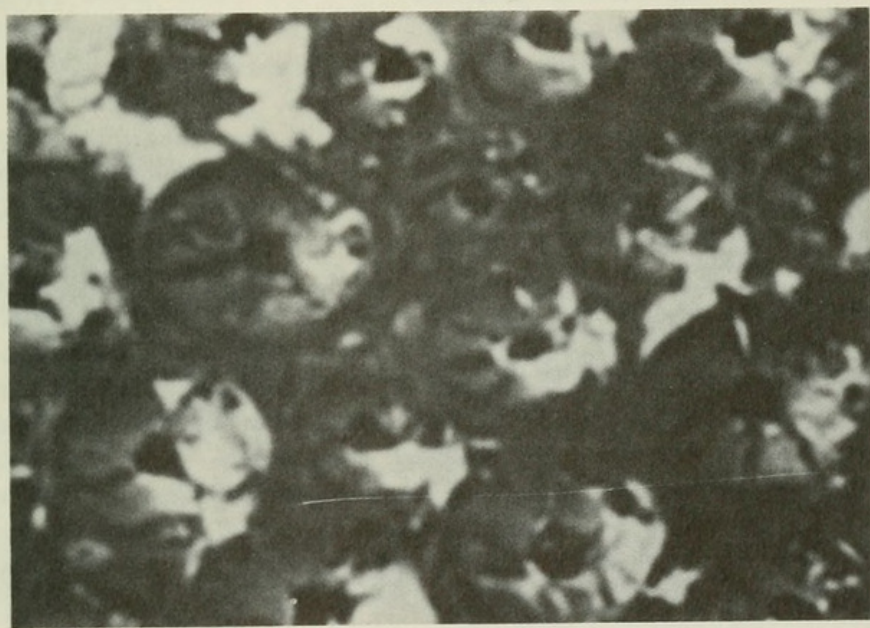


Abb. 1. A. erratica X 1.2; Abb. 6, Palisadenskleriden der Samenschale X 3,000.

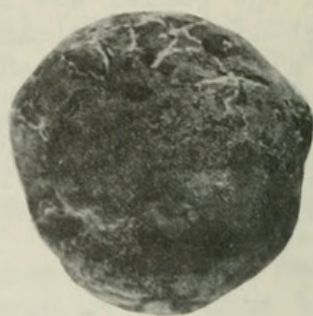
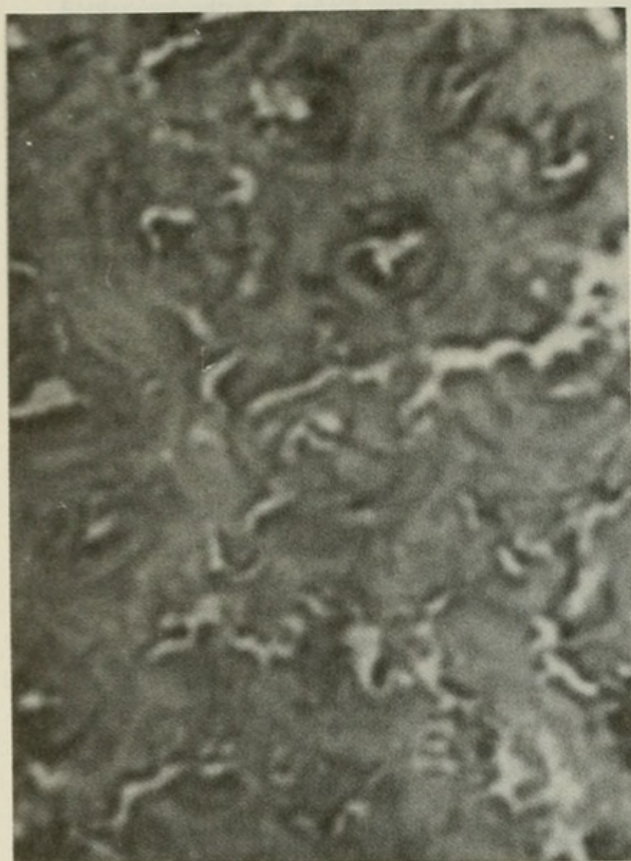
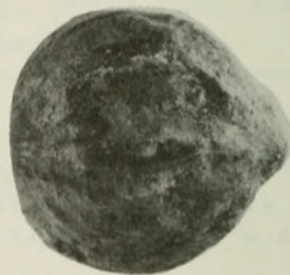


Abb. 2. A. moluccana s. s.,
X 1.3; Abb. 4. Palisaden-
sleriden X 3,000.



Abb. 3. A. m., var. remyi X 1;
Abb. 5. Palisadenskerliden X
3,000.





Degener, Otto, Degener, Isa, and Hummel, K . 1978. "Aleurites erratica Deg., Deg. & Hummel sp. nov., (Euphorbiaceae) des stillen Ozeans." *Phytologia* 38(5), 361–364.

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