

- (10) BENTHAM et HOOKER, Gen. PL, I, p. 580 (1865).  
 (11) O. KUNTZE, Rev. Gen. PL, I, p. 191 (1891).  
 (12) TAUBERT in Engler et Prantl, Nat. Pflanzenfam., ed. 1, III, 3, p. 140 (1894).  
 (13) HARMS in Engler et Prantl, Nat. Pflanzenfam., ed. 1, Nachtr. I zu 111, 8, p. 197 (1897).  
 (14) PRAIN, SC, Mem. Med. Off. Ind. Army, XII, p. 1-17 (1901).  
 (15) MEYER DREES, Bull. Jard. Bot. Buit., Ser. III XVI., 1, p. 8W02 (1988).  
 (16) DE WIT, Bull. Bot. Gard. Buit., Ser. III, XVII, 1, p. 139-154 (1941).  
 (17) MERRILL, Philipp. Journ. Sc. Bot., V, p. 41 (1910).  
 (18) CHALK, BURTT-DAVY, DESCH et HOYLE in Chalk et Burtt-Davy Forest Trees and Timbers of Brit. Emp., Twenty West Afr. Timb. Trees, II, p. 14 (1933).  
 (19) SPRAGUE, Kew Bull., p. 104 (1940).

(Received for publication October 31, 1950)

Published by Herbarium Bogoriense., Kebun Raya Indonesia  
 Volume 1, Part 2, pp. 67-73 (1951)

CONTRIBUTIONS TO THE HISTORY OF BOTANY AND  
 EXPLORATION IN MALAYSIA—7

H. C. D. DE WIT \*

Report on the botany of Leti and the southern Moluccas  
 (1712-1720) by E. C. Barchewitz<sup>1</sup>

Barchewitz reached the islet of Leti, in the southwestern Moluccas, on September 2, 1714; he returned to Europe in September 1720, having represented the East India Company on Leti for six years. Like so many of his contemporaries he wrote a book on his life's adventures. This work appeared in 1730 and proved a success. A second, slightly enlarged, edition followed in 1751, entitled "Neu-vermehrte Ost-Indianische Reise-Beschreibung." Barchewitz is the earliest author on the natural history of Leti and he paid attention to a number of plants. The present note is mainly a survey of the botany contained in his book.

Ernst Christoph Barchewitz was born at the close of the 17th century at Grosz-Sommerda near Erfurt. He was bound apprentice to a tawer at Erfurt but soon preferred to travel ("Wanderschaft") with his brother to Holland. He visited the larger towns, learned at the Hague the art of dressing and the barber's craft, and became the valet de chambre of the Imperial Ambassador, Baron von Heems, whom he accompanied to Austria and the southern Netherlands. He ended his service at Delft where he enlisted with the East India Company.

As a soldier he embarked at Hellevoetsluis on the "Voorburg," sailing April 1, 1711. The treatment on board he judged to be fair; his only objection was that he had to drink water whereas wine would have seemed very suitable.

After a stay at Batavia (December 20, 1711 till January 29, 1712), he was garrisoned on Banda, where he remained till August 15, 1714. He left when he was appointed Corporal of Leti.

The following pertains to the second edition of Barchewitz's book, the pages referred to are cited between brackets. All quotations have been translated.

\* Botanist, Flora Malesiana Office, Leiden.

<sup>1</sup>The first paper of this series, containing nos. 1-6, appeared in the Bulletin of the Botanic Gardens, Buitenzorg III 18: 463-472. 1950.

In the preface he states: "I have given an account of my own observations, and also of what I heard from other trustworthy persons; I do not care whether my facts seem possible or impossible to some of my readers." He stuck to this intention. His work is first of all a report; nowhere there is any attempt at a critical discussion or research. He simply noted what he saw and what he was told.

Barchewitz was by no means a botanist or a naturalist. Having a lively style, an observant eye, and a liking for Natural History and life in the open, he described in a charming manner the southwestern Moluccas as they were in the first decades of the 18th century. He added appreciably to our knowledge of the ethnography, mythology, and the manner of administration of the Company in that period; as regards Natural History he devoted a good deal of space to the birds, reptiles, fishes, insects, molluscs, and plants of the region.

After his return to Europe, Barchewitz studied some authors, (*e.g.* Speelman's paper on *Antiaris*, the travel accounts of Dampier, Vogel, Worm, and Wurffbain) but inserted these supplementary data without comparing them to his own observations; they merely served to give his book a semblance of erudition.

The data supplied by Barchewitz relating to botanical science have some interest, both to ethnobotany and to historical botany in general. Phytographically his work is without value though he supplied as a rule sufficient distinctive characters to identify his plants with reasonable certainty. In the following alphabetical list I have not repeated facts which may be found in the usual recent reference works. If not stated differently, the records refer to Leti. The list is preceded by some general notes arranged according to the various islands.

**BANDA ARCHIPELAGO.**—The popular beverages in Banda are "sury" and "zachewehr," the first tapped from *Cocos nucifera*, the second from *Arenga pinnata*. In the "zachewehr" roots are hung to improve the wine, this may be a reference to *Garcinia picrorhiza* Miq. No further particulars are given (526). On Banda is a high mountain, the "Pfaffenberg," up to the summit covered with forests. At the foot of Gunung Api, a very high mountain, there are many trees and gardens, but nearer to the top it is entirely bare and covered with ash and brimstone (141). On Pulu Pisang was the kitchen garden of the Governor of Banda (149-150).

The main vegetable imports into Banda were

from Ceram: sago and atap (153);

from Damar: coco-nuts, sago, ubi, mustard, ginger, *Curcuma*, canari, bananas, betel-nuts, betel-leaves, beans, cossos (*Costus*), bamboos (153);

from Nila: coco-nuts, bananas, pine-apple, "Kurbisse" (*Benincasa?*), beans (various kinds), mustard, ginger (153);

from Babar and Wettar: beans, ginger, *Pachyrhizus erosus* Urb., coco-nuts, bananas, sago, betel-nuts, betel-leaves, canari, sugar-cane (153);

from Aru and Kai: coco-nut oil, canari-oil, sugar-cane, sago, atap, coco-nuts, canari, ginger (153);

from Tanimber ("Dennemer"): beans (*Glycine soya* Sieb. & Zucc), canari, ginger, *Pachyrhizus*, and "Calmus" (154).

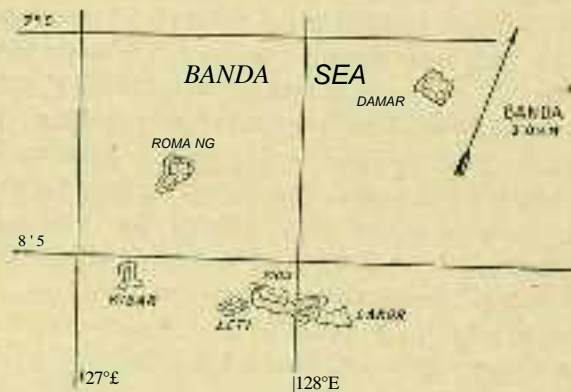


FIG. 1.

It is to be noted that the imports from Leti do not include a single vegetable item. The sketchy indications scattered through the book regarding crops in the various islands confirm the lists of imported products reproduced here. Nutmeg cultivation in Banda is described, a close portrait of the tree, fruit, aril, and seed added (175). He refers also to the male nutmegs (*cf. Myristica fatua*).

**DAMAR.**—The island was particularly rich in sagopalms (527, 531). It produced also a large amount of rattan which, judging from the meagre description, was a species of *Calamus* (406, 529). There were also many very tall and thick trees which Barchewitz believed to be genuine nutmeg trees as the fruits resembled nutmegs. These were, however, without taste or scent (531-532). This may be a reference to *Myristica fatua*.

**KISAR.**—Onions and garlic were cultivated successfully and exported to Leti but it was impossible to grow them on that island.

**LAKOR.**—The islet of Lakor, east of Leti, is described as rocky and without springs. The water supply of the inhabitants is rain water stored in caves inside the rocks. These cavities are natural. In other caves ("patulupans" or batu lupang), which have large holes in the ceiling connecting them with the surface, *Cocos* palms, *Areca* palms, and bananas-

are grown. The stems of the trees pass through these holes and beautiful fruit could be harvested conveniently by a man standing on the surface of the earth (284).

*Indigofera* and the usual crops are cultivated.

LETI.—The road on Leti passes through groves of *Cocos* palm, *Borassus*, *Tamarindus*, and other trees (216). North of the central mountains, Leti has grassy plains, here and there with a cluster of trees (*Cocos*, *Borassus*). In this plain rice, beans, "katjang," batates, "ubi," and "com-bily" are planted. Rice is planted (dry cultivation) on fields where *Dioscorea* or *Ipomoea* had been grown the year before. After a rice crop, the land is allowed to rest for several years (303). Rice is one of the most important crops (402). One month before planting, the grass is set on fire (218), after that the soil is turned by hacking or digging by means of pointed iron-wood poles. The ashes serve as fertilizer (124).

South of the central mountains, nothing but forest is found. Bees are particularly common here and have their nests along the thick branches of the large "canari" trees, always near springs. They fly away when the rainy monsoon sets in, nobody knows where to. After they have left the Letinese collect the wax. When the rains cease, the bees return (218).

Sago making was uncommon on Leti, if it was done at all. The occurrence of the sagopalm is not certain from Barchewitz's data. Onions and garlic did not thrive on Leti (432).

In the (densely forested) interior (286, 287) occurs a large tree, probably a species of *Eucalyptus*. The extraction of the oil (reputed to be a panacea) on boiling water is described (353-354).

The cotton of Leti was renowned and better than that of all the other islets.

MOA.—Maize is planted on sites where many low bushes grow. These are chopped, left to dry and set on fire. When the rainy season starts, the maize is planted. The next year a new site is selected and the fallow land is gradually covered again by shrubs (302). Moa is an important producer of maize and grows but little rice (402).

ROMANG.—The "kaju putih" oil is also (*c/. sub Leti*) distilled here (353, 354). *Arenga* and *Metroxylon* are plentiful.

#### Alphabetical list of species

*Ananas comosus* (L.) Merr. (239, 240). Grown in Leti; description added. \* *Annona muricata* L. (218). Repeatedly referred to; not described and confused with *Artocarpus integra*. \* *Annona reticulata* L. (opp. 230).

Referred to; not described. \* *Antiaris toxicaria* (Pers.) Lesch. (118). Referred to; not described. Celebes is believed to be its true home. \* *Areca catechu* L. (432). Repeatedly referred to; not described. \* *Arenga pinnata* (Wurmb) Merr. (312, 525, 526). Repeatedly referred to; descriptions both of the plant, its flowering, and the preparing of palm wine. \* *Artocarpus communis* Forst. (218). A good description accompanied by various recipes, Barchewitz called it "succun" tree but the Letinese "urna." He also stated that inside the fruit is a "seed of two fingers thick and equally long as the fruit." These seeds do not germinate and the tree is propagated by suckers from the roots. Heyne (Nutt. PI. Nederl. Indië 556. 1927, "Oerhoe") records the vernacular name "uru" from Kisar for the seeded form, which agrees with Barchewitz's record. The seeded form is easily propagated by its seeds, whereas the seedless form must be propagated by root suckers, even if it produces some seeded fruits, because those seeds do not germinate. It would seem, therefore, that both the seeded and the seedless form occurred on Leti. \* *Artocarpus integra* (Thunb.) Merr. (237). A description of the fruit. \* *Averrhoa bilimbi* L. (237). Tree, flower, and fruit described, also the use. \* *Averrhoa carambola* L. (238). Fruit and its use described. \* *Borassus flabellifer* L. (223). The "eyer butty" tree. Sailing between Banda and Leti, the first *Borassus* was sighted on Kisar (192). Tree described, also the making of palm wine and palm sugar. \* *Bryophyllum pinnatum* (Lam.) Kurz (245). A poor description but sufficient to identify the plant. It is a powerful antidote against all poisons. \* *Cajanus indicus* Spreng. (242). The "dursi." Heyne (Nutt. PL Nederl. Indië 831. 1927) refers to the Timor vernacular name "turis." \* *Calamus sp.* (406, 529). See Damar. \* *Canarium ?decumanum* Gaertn. (222). The summarily described tree and fruits cannot be identified with certainty but the size of the fruits is suggestive of *C. decumanum*. \* *Carica papaya* L. (240). The "papaye" or "udy maleye" has a wholesome fruit, the milky juice is harmful, the leaves may serve as tobacco. Some descriptive notes. \* *Cassia fistula* L. (221). Repeatedly referred to, but not described. Common in Leti and in Damar. \* *Ceiba pentandra* (L.) Gaertn. (221). Common in the Timor Archipelago. \* *?Celtis sp.* (295, 296). A new house proved to be inhabitable on account of the stench of "sibi dey," a stinking wood the carpenter used by mistake(?). Barchewitz took a piece with him and knew of its use in the preparation of balsams. There are other stinking woods, which cannot be excluded here, but I found only for *Celtis* recorded that it was used in perfumes. \* *Cerbera manghas* L. (246). A descriptive note and specially its medicinal use. \* *Citrullus vulgaris* Schrad. (241). No description. \* *Citrus maxima* (Burm.) Merr.

(230). The "pompelmusz" tree. The Rutaceous leaf is well described. \* *Citrus spp.* (247, 248). At least two more species of *Citrus* referred to. \* *Cyperus rotundus* L. (168). The apparently obsolete vernacular name "siree" is given. Some description and the destination of a famous oil from the tubers. \* *Dioscorea ? alata* L. (241). The "ubi" is often referred to but scantily described. \* *Dioscorea esculenta* (Lour.) Burkill (241). The "combily"; identification mainly on account of the vernacular name. \* *Durio zibethinus* Murr. (25). A good description. \* *?Eucalyptus sp.* (253, 354). It is probable that a species of *Eucalyptus* is referred to but the scant details do not make definite interpretation possible (*Melaleuca?*). \* *Eugenia aromatica* (L.) O.K. (558). Description from hearsay of the cultivation in Amboina. \* *Eugenia jambos* L. (235). A short description. \* *Eugenia malaccensis* L. (234). A brief note. \* *Garcinia mangostana* L. (239). The "manges tanges"; a description. \* *Gossypium sp.* Common in the entire Timor Archipelago but not described. \* *flntsia bijuga* (Colebr.) O. K. The pointed poles of iron wood used for digging were probably supplied by this species but no description is given. \* *Ipomoea batatas* (L.) Lam. (241). A brief note which proves that the red- and the white-skinned varieties were present. \* *Lagenaria leucantha* (Duh.) Rusby (242). No description; only the use of a Cucurbitaceous fruit as bottles and containers. \* *Mangifera indica* L. (238). A short description. \* *Metroxylon sp.* (525, 527, 528). Rare on Let! (*cf. sub* Damar); no description. \* *Moringa oleifera* Lam. (220). The "sayer-kehlar" tree; rather a satisfactory description. \* *Musa sapientum* L. (230). A good description, particularly the structure and development of the stem were closely observed. "Pisang radja" and "pisang bollefanger" (a triangular, drier kind) are mentioned. As regards the latter kind, the vernacular name "pisang tongkat langit" is probably identical with "pisang bollefanger" because the sequence of the vowels and the number of syllables are alike and the consonants related. This implies a record of *Musa troglodytarum* L., which has, in accordance with Barchewitz's data, a triangular shape and drier pulp (*cf. Cheesman in Kew Bull.* 1949: 449). \* *Myristica fragrans* L. (173,175). Closely described (*cf. sub* Banda). \* *Myristica fatua* Houtt. (531, 537). Repeatedly referred to (*cf. sub* Damar and *sub* Banda). \* *Nicotiana tabacum* L. (123, 288). Regularly cultivated; not described (*cf. sub* Leti). \* *Oryza sativa* L. Not described. In dry cultivation a staple food in Leti. \* Species of *Papilionaceae*. Various "katjang" are mentioned, probably belonging to various genera. \* *Physalis sp.* (168, 488). The vernacular name "margosy" is apparently obsolete. The descriptive note points clearly to *Physalis* but the species cannot be determined. It is used

as hops in beer, a use not recently recorded. \* *Pisonia alba* Span. (220). The "sayer.buty" tree is briefly described. "As often as I wished to eat white cabbage, which is not to be had here, I ordered these leaves and had them boiled; I then imagined to eat white cabbage." \*? *Portulaca sp.* (242). Only description: "The Portulac grows plentifully and was our commonest vegetable." \* *Psidium guajava* L. (235). The "guabes" or "coyaba." Both the pink- and the white-fleshed varieties occurred; both well described. \* *Saccharum officinarum* L. (241). Commonly grown; not described. \* *Sandoricum koetjape* (Burm. f.) Merr. (221). A general description and a recipe. \* *Santalum album* L. (221). Not described; said to be not rare on Leti. \* *Sesamum sp.* (121, 122). A powerful antidote against the poison of *Antiaris*. The fruits are pounded with cotton in order to make "candles." Poor descriptive note of the "waduck." \* *Strychnos ligustrina* Bl. (221, 241). A brief description of "Schlangenholtz"; no medicinal use mentioned. \* *Tamarindus indica* L. Repeatedly referred to as a common wayside tree or growing wild. \* *Terminalis catappa* L. (222). Some descriptive notes. \* *Vitis vinifera* L. (400). Had developed into a bower; recently imported. \* *Vitis sp.* (384). Description of a wild littoral species. \* *Zea mays* L. Mostly imported from Moa but "tiirkisches Korn" was also cultivated on Leti.