

NOTES ON DURIAN (*DURIO*) SPECIES OF EAST BORNEO

by

A. J. G. H. Kostermans

As a lover of durians and with a general interest in trees, the present author was tickled during his explorations in the forests of East Borneo by exaggerated stories about delicious and puer kinds of durian to be found plentifully at certain periods.

The last proved to be not true. The wild durians come into fruit during a short period and yield only a moderate quantity of fruit, of which — moreover — the greater part is lost from damage by squirrels, monkey's, tupais and hornbills.

Scarcity of edible fruit, however, induces local tribes to tell those stories about abundance of durians.

Curiously enough even good "tree-finders" were often unable to identify durian trees, when not in fruit.

It seems that almost every botanist exploring these regions has been intrigued and baffled by durians. Quite recently Mr. Wyatt Smith completed an article on *Durio* species (in the press), in which he stresses the difficulties to identify durians from dried herbarium material.

The Bornean durians have been elaborately dealt with by O. Beccari (Malesia 3 :230-280. 1887) and later by R. C. Bakhuizen v. d. Brink (in Bull. Jard. bot. Buitenzorg, ser. 3, 6 :224 & 248. 1924). As Beccari studied the species in the field, his work is more reliable than that of Bakhuizen, who only studied herbarium material; Wyatt Smith and I myself know from experience, that it is hardly possible to identify durians without adequate field-notes.

The following notes should not be considered conclusive, but may perhaps stimulate others to collect data on this interesting group. The common durian (*Durio zibethinus* L.) is nowhere wild in eastern Borneo, as far as I know. Cultivated, however, they may be met everywhere, especially on the elevated riverbanks (so-called: tanah sala-sala), where they are planted together with the bindjai (called kemang in Java = *Mangifera caesia*). These banks are usually the only places along the big rivers which are not liable to periodical inundation. The fruit of this durian is, compared with those from Java or Sumatra, rather poor: big stones and a thin arillus (e.g. the enlargement of the hilus, the attachment of the seed to the fruitwall); the reason being obviously the poor soil.

In the vicinity of Samarinda, and practically nowhere else on such a large scale, another kind, the "lai" (rhymes with why) is cultivated (*Durio kutejensis* Becc.). This kind, like the common durian

is not known in wild condition. Superficially the fruit resembles that of the true durian, but for its dirty yellow colour, whereas the former one may turn brownyellow at most. Closer observation reveals that the spines are much narrower and are so soft and pliable towards their tips, that we may grasp the fruit without endangering our finger-tips. The meat is yellowish, rarely orange and tastes slightly more acid than that of the common durian. Its fragrantcy is also less. Nevertheless they are very palatable. The tree is quite different in habit; it is 8 to 20 meters high with spreading branches and dense foliage of very large, up to 30 cm long leaves, which are glossy darkgreen above and coppery on their lower surface. The conspicuous flowers are up to 10 cm long and their petals bright red, contrasting with the silvery or coppery calyx lobes. The tree produces in a much earlier state than the common durian, unluckily, the yield is usually mediocre. Nobody knows where this cultigen comes from. Of the wild species, the best known is the *Lahong* (*Durio dulcis* Becc.), the red durian.

The gigantic trees, attaining a height of 40 meters with heavy buttresses and a rough redbrown bark, are scattered in several types of forests; on sandy or on clay soil; wet places, however, are avoided, hence perhaps the impossibility to grow them on the aforementioned riverbanks (I do not know, whether they are cultivated at all). The flowers are white and slightly smaller than those of the common durian. The fruit is darkred, the size of a medium durian and densely covered with long, somewhat flattened, darkred, pointed spines. Like the common durian, the mature fruit

drops unopened from the branches, to burst open on the ground. There is however, little change, for the latter process, as everything alive in the forest, seems to like it. Already hanging on the tree the fruit dissipates a penetrating, sickly sweet smell, discernable from a considerable distance and under the tree we find hundreds of imprints of wild boar, who are investigating the ripening.

Squirrels and tupai already start to attack the halfripe fruit, resulting in the greater part of the fruit already being destroyed before ripening.



Fig. 1 Bole of *Durio griffithii*, partly cut.

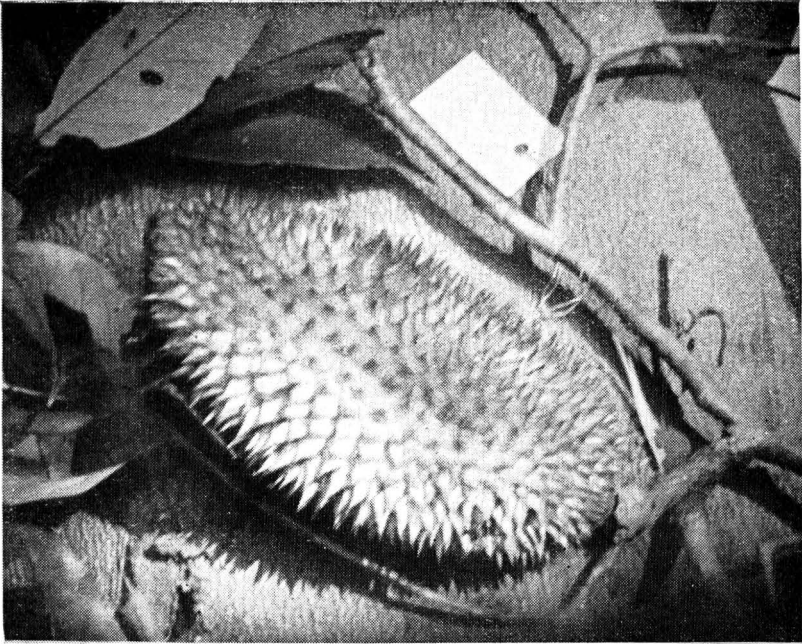


Fig. 2 Fruit of *Durio griffithii*.

The arillus is yellowish with the taste of the common durian, less sweet but more smelly. The leaf is hardly to be distinguished from that of *Durio zibethinus*; usually it is a shade more coppery on its lower surface. Saplings of both kinds are completely undistinguishable.

The second edible and highly estimated wild durian is the kerantongan (*Durio oxleyanus* Griff), a species, which is more rare and may also grow in wetter places. It does not grow the size of the lahong and may be easily recognised by its grey-green lower leaf surface which is covered with a layer of hairs. The flowers are grey-white, shorter and smaller than those of the common durian. The fruit are usually small — 15 cm in diameter, although occasionally a variety with bigger fruit may be found. They have the same short, pyramidal, stiff spines of the common durian and almost the same taste.

The four other wild species, found in East Borneo are all edible, but the drawback is, that (at least in three species) it is impossible to get at the fruit. Contrary to the above mentioned species, the fruit does not drop, but stays on the branch where it opens at maturity, the seeds dropping from the valves. One is thus dependent on the generosity of the squirrels and tupais, when they drop a half-eaten fruit, and to get an idea how difficult it was to get a ripe fruit may elucidate from the fact, that I had to offer a heavy

reward for a fruit, containing some undamaged seeds and the result of two days searching was one single fruit!

The largest species is the *durian anggong* (Kutei-language) or *taula tongau* (Benoa-Dyak language). Anggang and tongau are two names for a certain kind of hornbill, taula means durian. They belong to the heaviest forest trees. A good sized one had a diameter of 90 cm at breastheight and was above 45 meter high. It is a fantastic view to observe this kind, which may be found scattered in the forest type, which stretches from Samarinda southward to Balikpapan along the coast with a depth of several miles on very sandy, acid soil, in full bloom. The branches are thickly covered with clumps of dirty yellow, fleshy, rather large flowers, which dissipate an unbelievable strong and sweet durian-smell. Usually the numerous stamens are yellowish, but I discovered another variety with red filaments. Such trees look reddish at a distance. The smell is so deceiving, that our Dyaks often went after it, thinking to get ripe lahong, just to return rather disappointed.

The ripe fruit are rarely bigger than a man's fist, densely covered with slender, long dirty yellowish spines and yellow or orange yellow arillus, which is faintly sweetish, but has hardly any smell at all — contrary to the flowers. The leaves are the smallest of the genus, narrow and rarely more than 5 cm long, coppery on their lower surface. The timber is used for indoor construction. The *taula* is a less known species (perhaps undescribed). It prefers as a rule places, which are flooded periodically. They rarely exceed 20 m and their bark is greyish. The leaves resemble those of the *lai* in size, but are thicker and more leathery. I have never been able to collect living flowers; the halfdried ones were about the size of those of the common durian. The fruit are not globose, but — like those of the *lai kuju*, conical; they are yellow to orange outside and beset with thin thorns; the meat is yellow to orange.

Young trees of *lai* and *taula* are impossible to distinguish from each other.

The *Kelintjing* (*Dudio griffithii* (Mast.) Bakh.) does not grow bigger than 20 m and was rather rare here. It occurs also in Malaya and Sumatra. The leaves have a green lower surface; when dried they look grey, which is due to a very dense cover of microscopical starlike hairs with few, scattered, coppercoloured scales. I have not seen the flowers. The fruit are elongated, conical, orange-coloured with short spines. The meat is a beautiful dark red.

The last one, the *lai kuju* (*Dario acutifolia* (Mast.) comb. nov. = *Boschia acutifolia* Mast. in J. Linn. Soc. Bot. 14: 503. 1875), is the smallest one, sometimes more or less shrublike. The lower leafsurface and the flowers are coppercoloured; the flowers are in the leaf-axils, not on the older branches. The fruit are difficult to get, as they are attached, even when still very young, by



Fig. 3 Mr. Nedi with fruiting branches of *Durio griffithii*.

squirrels and other animals. The mature ones are conical with a beautiful orange or wine red colour. I have never been able to see the seed and arillus; it had always been eaten already by animals. The shrub comes already in bloom at a height of a couple of meters; hence it is quite common, although many seeds are lost.

Bakhuizen combined this species with the kelintjing, which is, however, quite different.

Of the four above mentioned wild durians, only the lahong occurs also on the more loamy soils outside the forestbelt of the acid, sandy soils along the coast from Samarinda to Balikpapan. *Durio testidunarum* Becc., a species with its fruit at the base of the trunk, does not occur on the sandy soils, mentioned above and I have not been able thus far to trace it in Eastern Borneo.

It is perhaps this kind, which gave rise to the story about durians growing in the soil, and which had to be collected by digging them up.

Lahong and lai are worth while to cultivate; the others have only botanical interest or may yield a rather inferior timber.