III. SCANDENT BURSERACEAE (Dacryodes and Canarium)

by

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(Issued 1. IX. 1952)

So far as we know, all Burseraceae have been described as shrubs or trees, ranging from small and slender to very lofty.

Some recently discovered material, however, pointed at the possibility that scandent representatives, if perhaps not true lianes, are not entirely lacking in the family. The first specimen intimating this habit to have come to our knowledge was collected by J. & M. S. Clemens on Mt. Kinabalu in British North Borneo, with the emphatic addition "surely scandent". This specimen is almost certainly a Dacryodes in the relationship of *D. rugosa* (Bl.) H. J. Lam, var. *virgata* (Bl.) H. J. Lam. It appeared to deserve specific rank and it has been described by the junior writer underneath as *D. scandens*. Full particulars are give there.

It is probable that some more *Dacryodes* species have a scandent habit, perhaps as a constant, perhaps as an occasional character. It seems well possible that the species in question are, phylogenetically speaking, on their way to become lianes but it is, of course, impossible to predict whether they possess the potentiality to fully acquire the habit of a climber. They certainly have not, thusfar, developed special organs enabling them to climb or facilitating such a function. As far as our present knowledge goes they seem, at least as far as *Dacryodes* is concerned, to be comparatively small woody plants with slender stems, which may keep themselves erect through the support the surrounding vegetation renders them.

Quite the same condition seems to be found in some species of *Canarium*. We owe this knowledge to the scrutiny of Mr P. W. Leenhouts,

assistant at the Rijksherbarium who, during his investigation of Pacific Canariums found two examples of this type and who kindly consented, in expectation of his publication, to mention them here. For this we beg to tender him our best thanks.

One of the specimens in question is a representative of *Canarium acutifolium* (DC.) Merr. from Misool (West of New Guinea), coll. *Pleyte 1020*. The field label mentions: common liane, 30 m, 4 cm diam.. Another specimen, collected in the same locality (*Pleyte 1018*) was marked: common tree, 30 m, 30 cm diam.

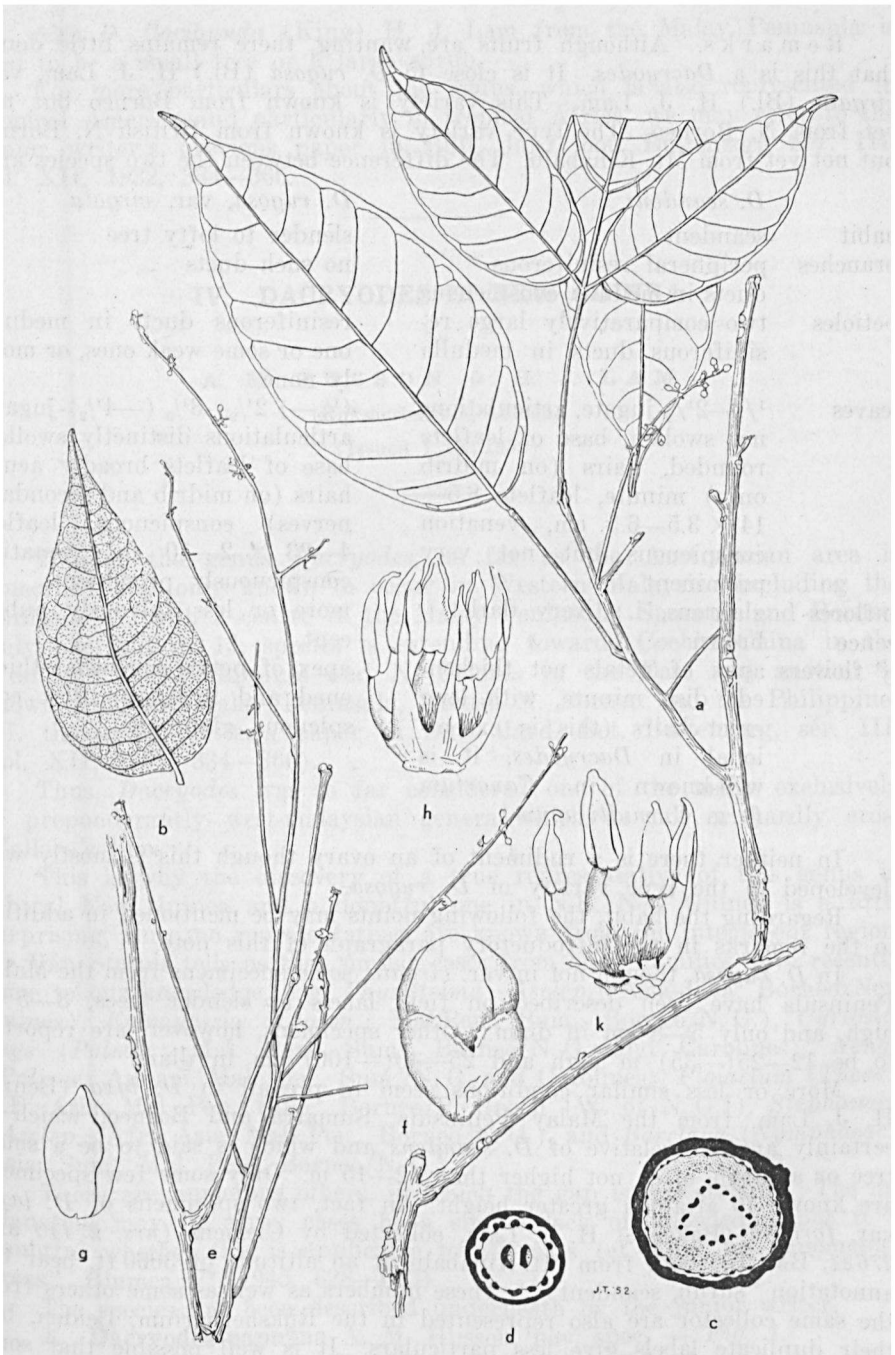
Two other specimens are from Fiji (Viti Levu) and have been discovered by Mr O. Degener (*nrs. 15159* and *15196*). These have been described (and will be published) as *Canarium harveyi* Seem., var. *scandens* Leenh. Both have emphatically been marked 'liane'. Of a third specimen of *C. harveyi*, var. *scandens* from Fiji (*J. W. Gillespie 2320*) the habit has not been mentioned.

It seems quite probable that this scandent or semi-scandent habit in Burseraceae is more frequent than is indicated by these few examples. Field labels are all too often little detailed and a collector who knows little of the flora he is working in — which certainly does n o t apply to the three collectors just mentioned — is likely to overlook the imporance of a character in a group he is not familiar with. This is why we should like to draw the attention of collectors, also in other tropical areas, to this exceptional habit in Burseraceae.

Dacryodes scandens A. M. Husson, nov. spec. — *Fig. 1.*

Teste Clemente vere scandens; *ramuli* subgraciles, circiter 0.3—0.4 cm diam., lenticellati, medulla peripheralis multis fasciculis vasorum resiniferorum percursa. *Folia* estipulata, $^1/_2$—$2^1/_2$-jugata, petiolis teretibus glabris, basi et in nodis rachidis distincte sed haud vel vix incrassate articulatis, 5.9—6.3 cm longis, medulla fasciculis vasorum resiniferorum duobus magnis percursa; *foliola* ovato-oblonga, basi rotundata, longiuscule obtuse sensim vel subabrupte acuminata, acumine 1—1.2 cm longo, 0.4—0.5 cm lato, subcoriacea, supra glabra, subtus in nervis minutissime scabridula, in sicco supra fusca, subtus brunnea, integra, 8.5—14 cm longa, 3.5—6.5 cm lata, petiolulis lateralibus 0.5—0.6 cm longis, partibus interjugalibus 2.5—3 cm, terminalibus circa 3 cm longis; costa media utrinque prominens, nervis secundariis 10—13, sub angulo 60°—70° curvato-adscendentibus, utrinque in nervum intramarginalem arcuatim confluentibus, reticulatione utrinque conspicua. *Inflorescentia* (♀ ignota) ♂ glabra terminalis, tota 33 cm longa, ramuli graciles 8—15 cm longi, cymulis ultimis 4-floris brevissimis, bracteae minutissimae squamiformes. *Flores* (♀ ignoti) ♂ glabri, minuti, 0.3 cm diam., pedicelli 2—5 mm longi graciles, ebracteolati. *Calyx* supra medium 3-fidus, circ. 2 mm altus, lobis deltoideis. *Petala* 3, paulo imbricata, oblongo-ovoidea, 3 mm longa, 1.8 mm lata, apice haud incrassata. *Stamina* 6, libera, meta-obdiplostemona subdidynamia, glabra, extra discum minutum pilosum canali centrali suffultum inserta; ovarii rudimentum nullum.

Borneo — Brit. N. Borneo, Mount Kinabalu, Penibukan, 1200—1500 m: *Clemens 31095*, by trail above camp, on ridge, s u r e l y s c a n d e n t. January 16, 1933, *type specimen* (L).



F.g. 1 — *Dacryodes scandens* Husson; a. ♂ flowering branch; b. leaflet with venation; c. cross-section of branchlet; d. ditto of petiole; e. ♂ inflorescences; f. flower bud; g. petal inside; h. androecium; k. ditto, longitudinal section. — from *type specimen.*

Remarks. Although fruits are wanting, there remains little doubt that this is a *Dacryodes*. It is close to *D. rugosa* (Bl.) H. J. Lam, var. *virgata* (Bl.) H. J. Lam. This variety is known from Borneo but not yet from N. Borneo. The type variety is known from British N. Borneo but not yet from Mt. Kinabalu. The difference between the two species are:

	D. scandens	*D. rugosa*, var. *virgata*
habit	scandent	slender to lofty tree
branches	peripheral resiniferous ducts in medulla conspicuous	no such ducts
petioles	two comparatively large resiniferous ducts in medulla	resiniferous ducts in medulla one or some weak ones, or mostly none
leaves	$^1/_2$—$2^1/_2$-jugate, articulations not swollen, base of leaflets rounded, hairs (on midrib only) minute, leaflets 8.5—14 × 3.5—6.5 cm, venation conspicuous but not very prominent	($^1/_2$—) $2^1/_2$—$3^1/_2$ (—$4^1/_2$)-jugate, articulations distinctly swollen, base of leaflets broadly acute, hairs (on midrib and secondary nerves) conspicuous, leaflets 4—23 × 2—10 cm, venation conspicuously prominent.
inflorescence	glabrous, i. s. very dark brown	more or less fulvously pubescent.
♂ flowers	apex of petals not thickened; disk minute, with long erect hairs (this is exceptional in *Dacryodes*, it is well-known in *Canarium* (e. g. *C. multijugum)*	apex of petals somewhat thickened and inflexed; disk conspicuous, glabrous.

In neither there is a rudiment of an ovary though this is mostly well developed in the type variety of *D. rugosa*.

Regarding the habit, the following points may be mentioned in addition to the remarks in the introductory paragraph of this note.

In *D. rugosa*, though not in var. *virgata*, some specimens from the Malay Peninsula have been described on field labels as slender trees, 3—5 m high, and only 5—8 cm in diam.. Other specimens, however, are reported to be 12—25(—35) m high and 25—40(—100) cm in diam.

More or less similar conditions seem to prevail in *D. laxa* (Benn.) H. J. Lam, from the Malay Peninsula, Sumatra and Borneo, which is certainly another relative of *D. scandens* and which is said to be a small tree or a shrub, often not higher than 12—15 m. Only some few specimens are known to attain a greater height. In fact, two specimens of *D. laxa*, var. *forbesii* (Baker f.) H. J. Lam, collected by Clemens (*nrs. 27440* and *27621*, BM, L), both from Mt. Kinabalu at an altitude of 3000 ft, bear the annotation "shrub, scandent?"! These numbers as well as some others from the same collector are also represented in the Rijksherbarium, Leiden, but their duplicate labels give less particulars. It is well possible that some other specimens bear a similar annotation. This may be regarded as an admonition to give full particulars also on duplicate labels, instead of merely abstracting them!

Also *D. floribunda* (King) H. J. Lam from the Malay Peninsula is said to be a small tree or a large shrub.

For more particulars about the genus, which is also represented in tropical America and particularly in tropical Africa, we may refer to the senior writer's previous paper in Bull. Jard. bot. Buitenzorg Sér. III, vol. XII, 1932, 334—366.