

STUDIES IN THEACEAE, V
THE THEACEAE OF NEW GUINEA*

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THESE STUDIES have been possible only because of the superb collections made by L. J. Brass on his four trips to New Guinea. His first collection (October 1925–June 1926) was made under the auspices of the Arnold Arboretum. Since that time, as a member of the Richard Archbold Expeditions to New Guinea, he has made three more collections (1933–34, 1936–37, 1938–39). The 1933–34 and 1936–37 collections were made in British New Guinea, while the 1938–39 expedition was to Netherlands New Guinea.

Supplementing this material of Mr. Brass are some specimens collected by Mrs. M. S. Clemens (1935–37) in Northeastern New Guinea and photographs and fragments of type specimens of *Eurya* from various European herbaria.

The literature dealing with New Guinean Theaceae is quite sparse and is briefly given here:

1891. F. v. Mueller in Jour. Bot. **29**: 176. 1891. Here, to my knowledge, was described the first species of Theaceae from New Guinea. The species: *Ternstroemia Britteniana* is from British New Guinea.
1901. Schumann & Lauterbach, Fl. Deutsch. Schutzgeb. Südsee, 447. 1901. In this flora of the South Sea Islands, a second species, first of the genus *Eurya* was described. The species: *Eurya Tigang*, is from Northeastern New Guinea.
1912. Lauterbach in Nova Guinea, **8**⁴: 841–842. 1912. Three species, *Ternstroemia papuana*, *Eurya Hellwigii* and *E. Roemerii* were added as a result of expeditions to Netherlands New Guinea.
1922. Diels in Bot. Jahrb. **57**: 431–435. 1922. This is the first comprehensive treatment of the family. Three new species, *Adinandra calosericea*, *Eurya leptantha* and *E. oxysepala*, besides two new varieties of *E. Tigang* (var. *meizophylla* and *phyllopoda*) were described.
1923. Baker, f. in Jour. Bot. **61**: Suppl. 4. 1923. Here, in a treatment of the H. O. Forbes plants collected in New Guinea, two new species (*Ternstroemia sogerensis* and *Adinandra Forbesii*) were added.

*Botanical Results of the Richard Archbold Expeditions.

1925. Melchior in Engler & Prantl, Nat. Pflanzenfam. ed. 2, **21**: 148. 1925. A general compilation of material to date.
1928. White in Proc. Roy. Soc. Queensland, **39**: 66, pl. 4, fig. 2. 1928. *Eurya albiflora* was described. An enumeration of the plants collected by C. E. Lane-Poole.
1929. Diels in Bot. Jahrb. **62**: 483. 1929. A single species *Eurya oreogena* is here described in an enumeration of plants collected generally by Herrn Missionar Chr. Keysser in the Sarawaket Forests, Northeastern New Guinea.
- Diels in Jour. Arnold Arb. **10**: 241. 1929. Here Diels contributing to White's "Ligneous plants collected in the Territory of Papua (British New Guinea) in 1925-26 by L. J. Brass," lists *Ternstroemia megacarpa* Merrill.
1937. Kobuski in Ann. Missouri Bot. Garden, **25**: 344-351. 1937. In a general treatment of the genus *Eurya*, eleven species are enumerated of which five (*E. Greenmaniana*, *E. Merrilliana*, *E. meizophylla*, *E. Rehderiana* and *E. phyllopoda*) are new.
1939. Kobuski in Jour. Arnold Arb. **20**: 362. 1939. In a supplementary study of *Eurya*, the species *E. Brassii* is added.

GORDONIA ELLIS

Gordonia Brassii, spec. nov.

Arbor 12 m. alta. Folia coriacea, nitida, glabra, oblongo-obovata, 6-12 cm. longa et 3.5-6 cm. lata, apice obtusa, basi cuneata, supra venis manifestis margine subintegerrime vel sparse undulato-serrata, petiolis glabris 3-7 mm. longis. Flores solitarii, axillares, albi 3-3.5 cm. diam., pedicellis ca. 4 mm. longis bracteolis cito caducis; sepala 5, inaequalia obovata imbricata, pergamenacea, extus pubescentia, margine scariosa, 4-12 mm. longa et 7-17 mm. lata; petala 5 subrotundata imbricata extus pubescentia, 20-22 mm. longa et 17-21 mm. lata, margine membranaceo 5-7 mm. lato, fimbriata, venis manifestis; stamina ca. 60-65, basi petalis adnata, filamentis ca. 9 mm. longis et 1 mm. diam., eis seriei interioris pubescentibus, basi in cupulam 3 mm. altam connatis, antheris sagittatis apice obtusis ca. 4 mm. longis et basi 2 mm. latis; ovarium dense pubescens, conicum, lobulatum, ca. 6-7 mm. longum, basi 4 mm. apice 1.5 mm. diam., 5-loculare, stylis 5 liberis 2.5-3 mm. longis. Fructus ligneus leviter pubescens dehiscens ca. 2.5-3.0 cm. longus, obovatus, apice 5-carinatus, seminibus ca. 20, ca. 2 cm. longis, alatis.

NETHERLANDS NEW GUINEA: Balim River, on slope of old secondary forest, alt. 1750 m., *L. J. Brass & Chr. Versteegh 11170*, December 10, 1938 (tree 12 m. high with crown not wide spreading; diam. 81 cm.; flowers white and fruit green; bark 10 mm. thick, rough, scaly, brown).

The stamens and styles seem to be the outstanding characters in this

species. A careful count reveals ± 60 stamens. In appearance the number does not seem so different from the number in *G. papuana* (120) and its varieties (140 & 160) because of the size of both anthers and filaments. The latter, 9 mm. long, are approximately 1 mm. thick near the base and taper toward the apex. The inner row is pubescent on the inner surface. The anthers are large (4 mm. long), sagittate and obtuse at the apex. The styles are free for 2.5–3.0 mm. as compared with the connate or subconnate styles of *G. papuana*. The transition from bracteoles through sepals to petals is very apparent in this species. The bracteoles are quickly caducous. The three outer sepals measure 4–5 mm. long and 7–8 mm. wide and are pergamentaceous. The two inner sepals are quite petaloid measuring 7–12 mm. long and 11–17 mm. wide. Although these are thickened at the center and base, their margins are thin, membranaceous and veined like the petals. The outer petals on the other hand, are hairy on the back and thickened like the calyx.

Previous authors have attributed the Papuan material of *Gordonia* to *G. fragrans* Merrill. Evidently these authors have had no opportunity to compare their material with true representatives of the Philippine species. In its larger flowers (5 cm. diam.) and fruit (3.0–3.5 cm. long), Merrill's species is more closely related to *G. Brassii* than to *G. papuana* and its varieties. The veining of the leaves in the Philippine species, "nerves obscure, scarcely more prominent than the lax reticulations," as Merrill stated, together with the undulate-serrate margin, the acuminate apex and the finely tapering base are distinct marks of difference. In *G. Brassii*, the prominent veins of the leaves, along with the obtuse apex and abruptly cuneate base are a few of its notable features. Even the margin, although occasionally subcrenate, bears no close resemblance to that of *G. fragrans*. The fruit of the Philippine species differs in that the diameter is larger at the base while in *G. Brassii* the greatest diameter is in the swelling near the apex.

***Gordonia papuana*, spec. nov.**

Arbor parva fruticosa. Folia coriacea, utrinque opaca, glabra, oblongo-obovata, 7–10 cm. longa et 3.0–4.5 cm. lata, apice obtusa, basi cuneata, subintegerrima vel sparse undulato-serrata, venis supra obscuris; petiolis glabris ca. 5 mm. longis. Flores solitarii, axillares, ca. 2 cm. diam., pedicellis ca. 3–5 mm. longis pubescentibus, bracteolis parvis, obovatis ca. 3 mm. longis cito caducis; sepala 5, imbricata inaequalia concava obovata, subrotundata, pergamenacea, pubescentia 5–7 mm. longa et 7–9 mm. lata; petala 5, imbricata extus pubescentia, rotundata, 15–16 mm. longa et 15–16 mm. lata, margine membranacea; stamina ca.

160 in seriebus pluribus, basi petalis adnata, filamentis 4.5–7.0 mm. longis, basi in cupulam 3 mm. connatis, antheris 1–3 mm. longis; ovarium dense pubescens, conicum, lobulatum, ca. 5 mm. longum, stylis 5 connatis vel subconnatis ca. 3 mm. longis. Fructus parvus ligneus leviter pubescens, dehiscens ca. 1.5 cm. longus, 7–8 mm. diam. seminibus ca. 20, ca. 12 mm. longis alatis alis ca. 6 mm. longis.

NETHERLANDS NEW GUINEA: Hollandia and vicinity, forest clumps in secondary savannahs, alt. 20–100 m., *L. J. Brass 8884*, TYPE, June 29, 1938 (bushy tree 6–7 m.). — Hollandia and vicinity, primary rain-forest, alt. 100 m., *L. J. Brass 8992*, July 8, 1938 (trunk cylindrical; bark hard, flaky, pale brown). — Hollandia and vicinity, open slopes of grass and fern, alt. 20–100 m., *L. J. Brass 8811*, June 14, 1938 (bushy tree 6–7 m. high).

Clearly distinguished from the former species because of larger number of stamens (160), the more or less connate styles, smaller flowers and fruit and leaves dull on both surfaces.

Described below are two varieties of this species. These varieties, in themselves are near-specific entities. However, after deliberation, it seems wiser to treat them as variations — at least until further material is available.

***Gordonia papuana* var. *acuminata*, var. nov.**

A typo differt foliis oblongo-ellipticis, acuminatis, 9–16 cm. longis et 3.5 cm. latis; staminibus 140 plus minusve, filamentis seriei interioris pubescentibus, antheris hastatis 1.0–1.5 mm. longis.

Canopy tree 25 m., spur-buttressed stem, pubescent when very young, bark pale gray-brown. Leaves coriaceous, somewhat shiny, occasionally pubescent, generally glabrous on petiole, oblong-elliptic, 9–16 cm. long and 3–5 cm. wide, long-acuminate at the apex, tapering cuneate at the base, veins on some leaves obscure on others distinct, margin somewhat crenulate-serrate, petiole 0.7–1.0 cm. long. Flowers axillary solitary, greenish white; pedicel 8–10 mm. long, bracteoles sepaloid early caducous; sepals 6, imbricate, pergamentaceous, pubescent, somewhat concave, broadly ovate 9–11 cm. long, 9–11 cm. wide, the outer sepals 9×9 cm., inner sepals 11×11 cm.; petals 6, the two outer ones fleshy 13–14 cm. long, 13–15 cm. wide, three inner petals with broader membranaceous margin 15–18 mm. long, 15–16 mm. wide, the sixth petal intermediate between the two groups; stamens ± 140 in four or five series, adnate to base of corolla, filaments of varying length 4–6 mm. fused at base into a collar 2.5–3 mm. long, pubescent on the inner side of inner series, anthers hastate, 1.0–1.5 mm. long, ca. 2.0 mm. wide at

base, nearly truncate at base; ovary and style 6 mm. over all, densely pubescent, ovary ca. 3 mm. long, lobed at base, 5-loculate; styles 5, ca. 3 mm. long, connate for most of their length. Fruit woody, dehiscent finely pubescent, obovate, 5-ridged, 5-celled, 1.7–2.5 cm. long, ca. 1.2 cm. wide at upper part. Seeds winged, ca. 12 mm. long, wings ca. 9 mm. long.

BRITISH NEW GUINEA: Fly River, 528 Mile Camp, common canopy tree on ridges, alt. 80 m., *L. J. Brass 6694*, TYPE, May 1936 (tree 25 m., stem spur-buttressed, covered with pale gray-brown bark; flowers greenish white). — Wuroi, Oriomo River, Western Division, in light rain-forest, alt. 10–20 m., *L. J. Brass 5721* (AA & N. Y. Bot. Gard.) January 20, 1934 (rather slender tree, 20–25 m., thick shining leaves; flowers white).

Characterized by acuminate leaves, pubescent on petiole and lower midrib of young leaves and young stem, otherwise glabrous, $\pm$ 140 stamens with filaments of varying length (4–6 mm.), and hastate anthers. As mentioned above, under the species, this may, when supplemented by further material, be worthy of specific rank. Although six petals and six sepals are present in the flower, little significance has been attributed to this variation. The ample description was drawn completely from *Brass 6694*, the type.

***Gordonia papuana* var. *montana*, var. nov.**

A typo differt foliis nitidis ellipticis obtuse acuminatis, 7–10 cm. longis et 3.0–3.5 cm. latis, staminibus 120 plus minusve, antheris oblongis 2.0–3.0 mm. longis et 1.0–1.5 mm. latis.

Tree up to 27 m., glabrous except very young growth. Leaves coriaceous, shiny, occasionally pubescent on petiole and midrib of very young leaves, otherwise glabrous, elliptic, obtuse at apex, cuneate at base, 7–10 cm. long, 3.0–3.5 cm. wide, margin quite entire, petiole 5–10 mm. long. Flowers axillary, solitary, white; pedicel short 4–5 mm. long, pubescent, bracteoles early caducous; sepals 5 imbricate, unequal, pergamentaceous, pubescent spot on external surface, scarious-margined, 6–7 mm. long, 7–10 mm. wide; petals 5 imbricate, pubescent spot on external surface, slightly pubescent at base on internal surface, 15–17 mm. long, 10–14 mm. wide, scarious margin 1–2 mm. wide, easily becoming fimbriate; stamens about 120, adnate to the base of the corolla, filaments varying in length 4–9 mm., fused at base in collar about 1 mm. high, anthers oblong, 2–3 mm. long, 1.0–1.5 mm. wide; ovary and styles together 5 mm. long, densely pubescent, conical, 5 mm. diam. at base, 1.5–2.0 mm. diam. at stigma, ovary 5-lobed, 5-celled, almost star-shaped in cross section, styles 5, connate or nearly so. Fruit woody, dehiscent, finely pubescent, 2.5 cm. long, seeds winged.

NETHERLANDS NEW GUINEA: Six kilometers southwest of Bernhard Camp, on the Idenburg River, slope of ridge in primary forest, alt. 1150 m., *L. J. Brass & Chr. Versteegh 12550*, TYPE, February 20, 1939 (common tree, 27 m., diameter 50 cm.; crown not wide-spreading; bark 11 mm. thick, gray, scaly; sap-wood red, heart-wood violet; flowers white). BRITISH NEW GUINEA: Bella Vista, Central Division, in forest, alt. 1450 m., *L. J. Brass 5447* (AA & N. Y. Bot. Gard.), November 8, 1933 (medium sized tree with thick smooth leaves, white flowers and 5-angled fruit). — Lake Daviumbu, Middle Fly River, in canopy layer, rain-forest, *L. J. Brass 7616*, August 1936 (common tree with white flowers).

Characterized by elliptic, obtuse leaves, $\pm$ 120 stamens with anthers oblong, not hastate, filaments varying in length 4–9 mm., glabrous. This variety has 5 petals and 5 sepals. Whereas var. *acuminata* is confined to very low altitudes (10–80 m.), var. *montana* abounds in the somewhat higher montane regions (1150–1450 m.).

Gordonia spec.

NETHERLANDS NEW GUINEA: Two kilometers southwest of Bernhard Camp, Idenburg River, on ridge slope in primary rain-forest, alt. 900 m., *L. J. Brass & Chr. Versteegh 13169*, March 18, 1939 (tree 31 m. high, diam. 43 cm., with small crown; bark 9 mm. thick, brown, scaly; sap-wood red-brown, heart-wood violet-brown).

Although a fine specimen of *Gordonia*, no. 13169 collected by Brass and Versteegh in Netherlands New Guinea lacks sufficient characters to place it definitely under any described species. It is merely mentioned here as part of the material collected under the direction of Mr. L. J. Brass in New Guinea.

ARCHBOLDIODENDRON KOBUSKI

A critical study of herbarium material of the Papuan Theaceae has revealed a small number of specimens which possess sufficient morphological characters differing from those of other genera in the family to merit generic recognition. This new genus, *Archboldiodendron*, is named in honor of Mr. Richard Archbold, leader of three expeditions to New Guinea for the primary purpose of collecting zoological specimens.

Outstanding among the characters of this new genus are the five free styles. Rarely, six or even seven styles may be found. These styles, free to the base, are, in the fresh stage, sulcate and are topped by bilobulate stigmas. This character of free styles is found in *Eurya*, where the number is usually three, rarely (and these usually in New Guinea) five.

In the Papuan species of *Gordonia*, the styles are occasionally free to the base. In *Adinandra*, one of its nearest relatives, the styles are connate.

Another interesting character is the occurrence of ten petals in two alternate rows of five each. Occasionally nine, eight or even six petals have been found instead of the usual number of ten. When lacking, the missing petals are always from the inner row of smaller petals. This discrepancy, when occurring, is usually in *Archboldiodendron Merrillianum*. In *Arch. calosericeum*, the only variation noted was in a single case where nine regular petals were found with one rather dwarf-like petal appearing as a fragment torn in dissection.

In *Adinandra* the stamens, although numerous, are generally pentandrous. In this new genus, the stamens are arranged in a single cycle attached to each other by the filaments and adnate in turn to the corolla near the base. In the Papuan species of *Gordonia*, the stamens are more numerous (120 – 140 – 160) and are arranged in a series of several close cycles. In wood structure, Dr. I. W. Bailey, of the Arnold Arboretum, finds the new genus to be more closely related to *Adinandra*.

In both *Archboldiodendron* and *Gordonia* the ovary is quinquelocular, conical, subglobulate and covered with the same dense pubescence. Yet the ovary is multiovulate and the placentae are bifid like in *Adinandra Brassii*, described in this paper.

Although no fruit is available at present, one may assume from the general form and similarity of the ovary to that of *Gordonia* that the fruit probably will be dehiscent, rather than indehiscent as in *Adinandra*.

Archboldiodendron, gen. nov.

Arbores. Folia alterna simplicia coriacea penninervia. Flores hermaphroditi in axillis solitarii, pedicellis satis longis bibracteolatis suffulti; bracteolae duae cito caducae sepalis exterioribus simillimae et calyci arcte approximatae vel persistentes et a calyce remotae; sepala 5, inaequalia imbricata concava pergamenacea; petala 10 (8 vel 6) in seriebus duobus alternatis disposita basi connata; stamina numerosa (50–60) vulgo petalis 5-plo plura, omnia vel tantum exteriora petalis basi adnata; antherae oblongae basifixae; ovarium 5-loculare, placenta in quoque loculo bifida multiovulata; styli 5, (vel 6–7) breves liberi. Fructus ignotus.

TYPE SPECIES: *Archboldiodendron calosericeum* Kobuski.

Archboldiodendron calosericeum, spec. nov.

Arbor (ad 20 m. ex collectore) ramulis junioribus nitide sericeis. Folia oblongo-lanceolata, 11–13 cm. longa et 3–4 cm. lata, apice acuminate, basi angustata, decurrentia, coriacea, striis compluribus longitudi-

nalibus notatis, supra demum glabra, subtus densissime pulcherrime micanter sericea, costa nonnihil elevata rubescente, subtus prominente, nervis sub angulo fere recto divergentibus, margine glanduloso-serratula, minute revoluta. Flores in axillis solitarii, in medio 1–1.5 mm. diam., pedicello dense sericeo 1–2 cm. longo, bracteolae duae, dense sericeae, cito caducae, sepalis exterioribus simillimae et calyci arcte approximatae; sepala 5, inaequalia, concava, subrotundata, pergamenacea, 6–7 mm. longa et ca. 6 mm. lata, extus dense sericea, intus glabra, margine scariosa; petala 10 in seriebus alternatis duobus disposita, 9–13 mm. longa et 8–11 mm. lata, basi connata, undique glabra in serie exteriori medio dorso excepto; stamina ca. 50, antheris oblongis basifixis, 4–5 mm. longis, acutis, filamentis ca. 3 mm. longis, petalis basi adnatis; styli 5 (rare 6) breves (ca. 1 mm.) liberi, stigmata bilobata; ovarium dense sericeum conicum ca. 7 mm. longum diam. basi 4–5 mm., sublobatum, quinqueloculare placenta in quoque loculo bifida. Fructus ignotus.

NETHERLANDS NEW GUINEA: Fifteen kilometers southwest of Bernhard camp, Idenburg River, in mossy forest at 1800 m. alt., *L. J. Brass 12310*, TYPE, January 1939 (large tree of 20 m.; 0.5 m. diam.; leaves silky, pale pubescent underneath; flowers white).— Same locality, alt. 1800 m., *L. J. Brass & Chr. Versteegh, 11966*, January 22, 1939.

This superb tree, outstanding above all other species of Theaceae in Papua, is characterized by the deep olive-buff silky pubescence found on the leaves, flowers and young branchlets. Another salient character is the occurrence of horizontal striation on the leaves, presumably caused by the close folds of the leaves in bud and still very distinct in the mature leaves. One thinks immediately of the Melastomaceae, so striking are the striations.

In this species the pedicels are usually 1–2 cm. long with a diameter of 1.0–1.5 mm. at the middle. Two sepaloid, densely pubescent bracteoles are found immediately below the calyx. These bracteoles are quickly deciduous and can be found only on the very youngest flower buds. The pedicels of *Arch. Merrillianum*, on the other hand, are more stocky, 1 cm. long and usually about 2 mm. diameter at the middle. The two bracts in this latter species are persistent, the lower bract being found near the middle of the pedicel while the second is situated midway between the lower bract and the calyx. They measure approximately 7–10 mm. $\times$ 4 mm. and are quite acuminate at the apex.

The petals in *Arch. calosericeum* are consistently ten in number and are 9–13 mm. long. In *Arch. Merrillianum* the petals may vary from ten to eight or even six and measure 13–18 mm. in length.

The styles as mentioned before, are five and are free. In *Arch. calo-*

sericeum, the styles like most other floral characters, are consistent in number and are unequal in length, the largest measuring about 2 mm. In *Arch. Merrillianum* the styles are 5–6–7 in number with the longest measuring about 2 mm.

In the leaves of these two species, we find a distinct and interesting difference in the color of the pubescence. The unfolding leaves show the distinction best. The color in *Arch. Merrillianum* is a fine amber-brown at first, becoming darker as the leaves mature. In *Arch. calosericeum* the color of the pubescence can best be described as deep olive-buff. Here again the color darkens in the mature leaves. The midrib, more noticeable on the upper surface, is red in color in both species. However, in *Arch. calosericeum* the midrib is elevated while in *Arch. Merrillianum* the midrib is distinctly canaliculate. The veins in *Arch. calosericeum* extend from the midrib at an approximate angle of 45° while in *Arch. Merrillianum* this angle approximates nearly 90° .

In 1922, Diels (Bot. Jahrb. **57**: 433. 1922) described a new species *Adinandra calosericea* from Northeast New Guinea. In his description he said, "Foliorum petiolus sericeus, lamina coriacea, striis compluribus longitudinalis notata, supra demum glabra subtus densissime sericea splendissima . . . Flores . . . polygami vel subdioica ? . . . Petala 5–6 . . . Stamina . . . circ. 25. Styli 5 liberi extus sericeo-pilosi. Ovarium . . . placentae bifidae multiovulatae." From his description it is very clear that Diels probably had a poor specimen of *Archboldiodendron*. At first I felt certain that Diels' *Adinandra calosericea* was conspecific with my *Archboldiodendron calosericeum* as here described. Later, when more material of *Arch. Merrillianum* became available, I felt less sure of this relationship since the discrepancy in the number of petals presented the possibility that Diels might have had material of *Arch. Merrillianum*. In this latter species considerable petal variation is to be found. However, it seems likely that Diels would have mentioned the persistent bracts which are so evident.

Since international conditions are so turbulent at this time, it is quite impossible to borrow the Berlin material for examination. Hence, I am giving my type species the name *Arch. calosericeum*, regardless of the fact that the Berlin *Adinandra calosericea* may be conspecific with either species here described. It will in no way affect the validity of the two species.

In Engler & Prantl's Nat. Pflanzenfam. (ed. 2, **21**: 145. 1925), Melchior introduced under *Adinandra*, a new section ELEUTHEROSTYLA for the species *Adinandra calosericea* Diels. This sectional name would have been raised to generic status were it not for the fact that the name

Eleutherostylis has since been used by Burret, (Notizbl. Bot. Gard. Berlin, 9: 629, 1926) for a new genus in the *Tiliaceae*.

Archboldiodendron Merrillianum, spec. nov.

Arbor (?) ramulis junioribus nitide sericeis; folia oblongo-elliptica vel oblongo-oblancoolata, 13–17 cm. longa et 4–6 cm. lata, apice acuta, basi cuneata, coriacea, striis compluribus longitudinalibus notatis, supra demum glabra subtus densissime pulcherrime micanter fulvescenti-sericea costa supra impressa rubescente subtus prominente, nervis sub angulo circa 45° divergentibus, margine glanduloso-serratula minute revoluta. Flores in axillis solitarii pedicello dense sericeo ca. 1 cm. longo, diam. ad mediam ca. 2 mm.; bracteolae duae, sericeae persistentes et a calyce remotae, subtriangulares, ca. $7-10 \times 4$ mm., apice acuminatae; sepala 5, inaequalia, concava, pergamenacea, subrotundata, 8–11 mm. longa et 5–8 mm. lata, extus dense sericea, intus glabra, margine scariosa; petala 10 (subinde 8 vel 6) in seriebus alternatis duobus disposita, 13–18 mm. longa et 8–14 mm. lata, basi connata, utrinque glabra in serie exteriori medio dorso excepta; stamina ca. 52–57, antheris oblongis basifixis, ca. 5–6 mm. longis, apice acutis, filamentis 5–7 mm. longis basi petalis adnatis; styli 5(–7), 2–3 mm. longi, liberi, stigmata 5(–7), bilobata pulvinata ca. 1 mm. longa; ovarium dense sericeum conicum ca. 5 mm. longum, diam. basi ca. 7 mm., sublobatum, quinqueloculare, placenta in quoque loculo bifida. Fructus ignotus.

BRITISH NEW GUINEA: Mt. Tafa, Central Division, landslip regrowths, alt. 2400 m., *L. J. Brass* 4863, TYPE AA, also in Herb. N. Y. Bot. Gard., August 26, 1933.

It is indeed surprising to find two species of such a distinctive genus resembling each other so much in gross characters. This reference is to the pubescence and the longitudinal striations on the leaves. The unfolding leaves, as mentioned earlier, are a rich amber-brown in color. The general discussion of this species has been made in a comparison under *Arch. calosericeum*.

It is a pleasure to name this species in honor of Dr. E. D. Merrill of the Arnold Arboretum. For the past few years Dr. Merrill has concentrated part of his efforts in producing an up-to-date knowledge of the New Guinean flora of which the present contribution is only a small part.

TERNSTROEMIA MUTIS EX LINN. F.

Ternstroemia Britteniana F. v. Mueller in Jour. Bot. 29: 176. 1891.—Diels in Bot. Jahrb. 57: 432. 1922.

Unfortunately, there is no material available to me at this time, for

study of this species described so fully by F. v. Mueller. Later, Diels (1922) cited eight more specimens collected in Northeast New Guinea. To my mind this species is most closely related to *T. habbemensis* Kobuski under the discussion of which can be found a comparison with the present species. For further consideration see F. v. Mueller, l.c. and Diels, l.c.

***Ternstroemia carinata*, spec. nov.**

Arbor ca. 20 m. alta, ramulis glabris cinereis cicatricibus notatis. Folia oblongo-elliptica, glabra, crasse coriacea, integerrima, 7.5–13 cm. longa et 3.0–4.7 cm. lata, subtus brunneo-rubra, apice acuta, basi cuneata, petiolis glabris 1.0–1.5 cm. longis. Flores solitarii laterales, pedicellis glabris bi-angulatis, 1.5–2.0 cm. longis; bracteolae duae, deltoideae, 4.0–4.5 mm. longae et 4.0–4.5 mm. latae, calyci arcte approximatae, glabrae, glanduloso-serrulatae, in medio dorso carina crassa ca. 1 mm. alta instructae, ca. 0.75 mm. longe apiculatae; sepala 5, inaequalia, glabra, imbricata, pergamenacea, obtusa, apice rotundata, ca. 7 mm. longa et 6–7 mm. lata, margine scariosa; petala 5, alba membranacea, inaequalia, ca. 10 mm. longa et 6–7 mm. lata, basi connata; stamina ca. 70, basi petalis adnata, antheris inaequalibus 1.0–2 mm. longis, filamentis inaequalibus 1.0–2.5 mm. longis; ovarium conicum, glabrum, ca. 4 mm. longum, basi 4 mm. diam., apice 2 mm. diam., bi-loculare, ovulis pluribus, stylo sessili, stigmatibus duobus planis pulvinatis bi-lobis, ca. 1.2 mm. latis. Fructus ovoideus, ca. 1.2 cm. longus, ca. 1.2 cm. diam. seminibus 3 (vel plus?), cochleariformibus rubro-maculatis, ca. 7 mm. longis et 5 mm. latis.

NETHERLANDS NEW GUINEA: Eighteen kilometers southwest of Bernhard Camp, Idenburg River, secondary forest, on ridge, alt. 2200 m., *L. J. Brass & Chr. Versteegh* 12000, Feb. 3, 1939 (rare tree 19 m. high; diam. 33 cm.; flowers white; fruit dark red; bark 10 mm. thick, brown, fairly rough; wood red-yellow).

This species receives its name from the heavy keel extending the length of the bracteole and projecting at the apex into an apicule nearly 0.75 mm. long. The keel is sometimes nearly 1 mm. high. The stigmas are flat, projecting horizontally from sessile styles. The fruit is not more than one cm. long. These characters separate it from *T. Merrilliana* which it resembles in gross structure.

***Ternstroemia* spec. aff. *carinata*.**

BRITISH NEW GUINEA: Mt. Tafa, Central Division, ridge crest forest, alt. 2400 m., *L. J. Brass* 4952, (AA, NY), Sept. 1, 1933 (small tree; leaves dull, obscurely nerved; flowers white).

Only staminate flowers were present in the rather poor specimen which matches no other species. Its nearest relative seems to be *T. carinata* from Netherlands New Guinea. A brief description of the material at hand follows: Leaves coriaceous, glabrous, entire, 6.0–7.5 cm. long and 2.0–3.5 cm. wide, obtuse at apex, cuneate at base with a petiole 3–4 mm. long. Staminate flowers solitary, lateral, white; pedicel 2 angled, ca. 1.3 mm. long; bracteoles 2, terminating the angles of the pedicel just below sepals, somewhat keeled, apiculate, deltoid, 2–4 mm. long, 2 mm. wide; sepals 5, unequal, glabrous imbricate pergamentaceous obtuse, rounded at apex, ca. 5 mm. long, 4.5–6.0 mm. wide, scariously margined; petals 5 obovate, quite rounded at apex, 7–8.5 mm. long, 5–7 mm. wide, adnate at base; stamens 27–30, with varying lengths and points of adnation, filaments 1.0–2.5 mm. long, anthers 2–3 mm. long; pistillode quite vestigial.

***Ternstroemia habbemensis*, spec. nov.**

Frutex 1.5 m. altus; folia elliptico-obovata vel obovata, glabra, brunneo-rubrescentia, coriacea, 3.5–5 cm. longa et 1–2 cm. lata, apice obtusa vel subrotundata, basi cuneata, subrevoluta, petiolis ca. 4 mm. longis. Flores solitarii; pedicelli ca. 9–10 mm. longi, glabri, bracteolis duobus deltoideis ca. 1.0–1.5 mm. longis calyci arcte approximatis; sepala 5, inaequalia, imbricata, glabra, obtuso-flabelliforma, 3–5 mm. longa et 3–6 mm. lata, pergamenacea, concava, margine scariosa; petala 5, sepaloidea glabra ca. 5 mm. longa et 3.5 mm. lata, pergamenacea, concava, margine scariosa; stamina $\pm$ 16, glabra, antheris 1 mm. longis, filamentis 2 mm. longis petalis adnatis; ovarium conicum, glabrum, 3 mm. longum et 2 mm. latum, biloculare; stigmata pulvinata sessilia crassa medio depressa margine reflexa. Fructus ovoideus glaber, ruber 2 cm. longus et ca. 1.5 cm. diam.; semina 3–4, obliqua, ca. 10 mm. longa et 7 mm. lata, arcte compressa.

NETHERLANDS NEW GUINEA: Nine kilometers northeast of Lake Habbema, 2800 Meter Camp, mossy forest, on shrubby edge of landslide, alt. 2800 m., *L. J. Brass 11030*, October 1938 (shrub 1.5 m. high with red fruit).

This species is characterized by its reddish elliptic-obovate leaves, its short-pedicellate flowers and the pulvinate, sessile stigma. Its closest relative, *T. Britteniana* F. v. M., differs in its longer (3.5–6.0 cm.) ovate-lanceolate leaves, longer pedicels (1.5–2.5 cm.), stamens 20–25, its “stout, rather short” style. From *T. papuana* Lauterbach it can be separated by its 3–4-seeded fruit and its pulvinate 2-lobed sessile stigma. In Lauterbach’s species the stigma is 3-lobed and the fruit, according to the author, is 2-seeded.

***Ternstroemia meiocarpa*, spec. nov.**

Arbor magna. Folia glabra, coriacea, elliptica, integerrima, concava (ex collectore), 7–10 cm. longa et 2.5 cm. lata, apice acuminata, basi cuneata, petiolis 1.0–1.5 cm. longis. Flores ignoti. Fructus globosus, ca. 5–6 mm. longus et 6 mm. latus, bi-locularis, pedicello glabro 6–8 mm. longo; sepala 5, glabra, inaequalia, subrotundata, pergamenacea, ca. 3 mm. longa et 2.0–3.0 mm. lata; bracteolae 2, deltoideae, glabrae, ca. 1.5 mm. longae et 1.0 mm. latae, margine glandulosae; semina 2, anomala, ca. 4 mm. longa et 4 mm. lata.

NETHERLANDS NEW GUINEA: Six kilometers southwest of Bernhard Camp, Idenburg River, rain-forest, alt. 1200 m., *L. J. Brass* 12762, February 1939 (large canopy tree; leaves concave).

The outstanding feature of this species is its small fruit, occasionally found with the broken style attached. In this respect it resembles *Eurya*. However, the fruit is 2-seeded which separates it from *Eurya* as well as most species of *Ternstroemia* especially those from New Guinea. Unfortunately, there are no flowers present. Still, I do not hesitate to describe it as new since the features mentioned above are so outstandingly distinct.

***Ternstroemia Merrilliana*, spec. nov.**

Arbor 15–20 m. alta, ramulis robustis glabris. Folia coriacea, elliptica vel oblongo-obovata, glabra, subintegerrima acuminata, cuneata, supra rubra, subtus brunnea, 15–21 cm. longa et 4–8 cm. lata, venis utrinsecus 15, petiolis glabris ca. 2 cm. longis. Flores dioeci, 2–8 in axillis foliorum, pedicellis scabris glabris 1.5–2.0 cm. longis et 3–4 mm. crassis, bracteolis 2 parvis calyci approximatis flabelliformibus; flores ♀ (*Brass* 13168): sepala 5, imbricata, inaequalia glabra, concava, subrotundata obtusa, 9–10 mm. longa lataque, margine scariosa; petala 5 rosea, crassa, subconcava imbricata apice rotundata, 17–20 mm. longa et ca. 15 mm. lata, margine scariosa; ovarium subrotundatum subrubrum glabrum, ca. 6 × 6 mm., bi-loculare, basi staminodiis parvis numerosis ca. 1 mm. longis circumcinctum; styli 2, liberi, ovario arctissime incumbentes, dichotome partiti, parte styli integra 1–2 mm. longa, sub apice flabellatim expansa, stigmatibus crispule papillosis coronata, stylus totus, stigmatibus inclusis, 6–7 mm. longus. Fructus ovoideus, aurantiacus, 4.5–5.0 cm. longus, seminibus ca. 2 cm. longis roseis rubro-maculatis, sepalis in fructu ad 5 mm. incrassatis, lignescentibus coalescentibusque; flores ♂ (*Brass* 13289): sepala 5, imbricata, inaequalia, concava, crassa, glabra, scariosa, obtusa vel subrotundata, exterioribus tribus ca. 7 × 7 mm., interioribus duobus 7–8 mm. longis et ca. 13 mm. latis; petala 5, imbr-

cata concava, crassa, subrotundata, scariosa, 21–24 mm. longa et 20–25 mm. lata; stamina $\pm$ 160 in seriebus 5 vel 6, filamentis 1 mm. longis basi connatis, antheris ca. 7 mm. longis et 1.5 mm. latis; pistillodium conicum, glabrum, basi $\pm$ 3 mm. diam., 3 mm. longum, stylis 5–6 liberis inaequalibus, 0.5–3.0 mm. longis.

NETHERLANDS NEW GUINEA: Four kilometers southwest of Bernhard Camp, Idenburg River, common in wet lands of rain-forest, river plains at 850 m. alt., *L. J. Brass & Chr. Versteegh 13168*, TYPE, ♀, March 17, 1939 (tree with small crown, 20 m. high; diameter 39 cm.; bark 20 mm. thick, dark brown, fairly rough; wood red-brown; flowers rose; fruits dark orange).— Same locality, *L. J. Brass 13681*, ♀.— Bernhard Camp on the Idenburg River, on ridge, alt. 550 m., *L. J. Brass & Chr. Versteegh 13574*, ♀, April 16, 1939 (rare tree of primary rain-forest, 21 m. high, 64 cm. diam., bark brown, 18 mm. thick; wood red; flowers rose).— Four kilometers southwest of Bernhard Camp, Idenburg River, common subsidiary tree in Agathis forest, alt. 900 m.; *L. J. Brass 13289*, ♂, March 1939 (tree up to 30 m. high, 30 cm. diameter; leaves fleshy convex; flowers cream colored). BRITISH NEW GUINEA: Bisiatabu, foothill forest, alt. 450 m., *L. J. Brass 627*, ♀, November 13, 1925 (tree 12 m.; bark rather rough, peeling in small flakes, inner bark stains brown; leaves reddish; fruit orange colored). NORTHEASTERN NEW GUINEA: Morobe District, alt. 750 m., *Clemens 1242*, ♂, December 11, 1935.

This species usually has been interpreted as belonging to *Ternstroemia megacarpa* Merrill. Both have fruit and leaves which are exceptionally large for the genus and are very similar in this respect. However, in *T. megacarpa* the fruiting calyx, though coriaceous, is of the same texture as the flowering calyx and not adnate to the base of the fruit. In *T. Merrilliana* the fruiting calyx has grown to a thickness of nearly 5 mm., the calyx lobes appear adnate, as a heavy disk attached to the base of the fruit and can be separated from the fruit only by cutting. The pedicels of the Philippine material are from 4–10 cm. long and the surface, although wrinkled when dried, is not scurfy. In *T. Merrilliana* the pedicels in both the staminate and pistillate flowers are only 1.5–2.0 cm. long and the entire surface is scurfy.

Unfortunately, as is evident from his description, Dr. Merrill had no pistillate flowers and poor staminate flowers. In this species are found characters, especially in the pistillate flower, which are very striking. My reference is to the style and stigma.

The styles are 2, free and lie horizontal on the ovary for 1–2 mm. at which point they branch dichotomously with the ultimate branches swell-

ing fan-like, edged with a crisp stigmatic surface at the terminus. The entire spread of an individual style and stigma is 6–7 mm.

Both this species and *T. Rehderiana* possess horizontal styles. However, in *T. Rehderiana* the styles are unbranched and shortly swell fan-like. At the edge of this structure is found the stigmatic surface.

In *T. Merrilliana*, the staminodia (♀ flower) are many and form a collar-like ring (1 mm. high) around the base of the ovary. These staminodia have not coalesced their entire distance and can be “teased out” or separated with dissecting instruments. On the other hand, in *T. Rehderiana* the staminodia equally as many in number as in *T. Merrilliana*, have coalesced completely and cannot be separated into their individual parts.

These two species are probably the outstanding species of *Ternstroemia* in Papua. There is a great resemblance between the two, yet they are too different ever to be confused. With this in mind, I find pleasure in naming them for Professors Merrill and Rehder, two outstanding botanists at the Arnold Arboretum, both of whom have helped considerably in the preparation of this paper.

Ternstroemia papuana Lauterbach in Nova Guinea, 8⁴: 841. 1812.—
Diels in Bot. Jahrb. 57: 432. 1922.

NETHERLANDS NEW GUINEA: Eight kilometers southwest of Bernhard Camp, Idenburg River, mossy forest, alt. 1600 m., *L. J. Brass* 12741, February 1939 (canopy tree 20 m. high; leaves concave; flowers cream colored).

In his description of this species, Lauterbach refers to it as a shrub, stating also that the stigma is three-lobed and the fruit two-seeded. According to the collector, *L. J. Brass*, the specimen cited above is a canopy tree 20 m. high. The stigma is distinctly two-lobed and the mature entire fruit examined is three-seeded. Otherwise the specimen agrees sufficiently with *T. papuana*. Since I have not seen the type of *T. papuana*, I place the specimen here with reservation.

Ternstroemia Rehderiana, spec. nov.

Arbor ca. 25 m. alta, ramulis glabris. Folia oblongo-obovata, asymmetrica, coriacea, glabra, integerrima, apice obtuse acuminata, basi cuneata, 8–13 cm. longa et 3–5 cm. lata, petiolis 1.0–1.5 cm. longis. Flores solitarii, odorati, eburnei, laterales, pedicellis glabris 2.0–2.5 cm. longis; bracteolae 2, non visae, cito caducae; sepala 5, inaequalia, imbricata, glabra, concava, pergamenacea, 3.5–4.0 mm. longa et 3.5–4.0 mm.

lata, apice rotundata, margine scariosa; petala 5, obovata rotundata, 9–10 mm. longa et 6–8 mm. lata, basi connata; staminodia in coronam conspicuam crassam margine digitato-fimbriatam firme connata; ovarium glabrum, compresso-globulare, ca. 2.0–2.5 mm. longum et 4 mm. diam., biloculare; styli 2, horizontaliter patentes, quisque e duobus ramis connatis compositus, 0.5 mm. longus, stigmatibus uno flabelliformi 2.0 mm. longo margine digitato-fimbriato coronatus. Fructus ovatus, luteus vel aurantius, 2.5–4.5 cm. longus et 2.2–3.5 cm. latus, seminibus 4, carneis ca. 13 mm. longis et 7 mm. latis.

BRITISH NEW GUINEA: Palmer River, two miles below the Black River Junction, sub-canopy layer in ridge forest, alt. 100 m., *L. J. Brass* 7182, TYPE, July 1936 (slender tree attaining 25 m. height; flowers cream colored, fragrant; fruit soft yellow, ovate 4.5 cm. long $\times$ 3.5 cm. diameter).—Lake Daviumbu, Middle Fly River, Western Division, rain-forest substage, *L. J. Brass* 7752, September 1936 (bark hard, brown, suberose, exfoliating in small scales; fruit orange colored, smooth, ovate, $\pm$ 2.8 cm. long $\times$ 2.5 cm. diameter; seeds pink).—Same locality, *L. J. Brass* 7456, August 1936 (bark brown, hard, slightly fissured; fruit orange colored, $\pm$ 2.5 cm. long $\times$ 2.2–2.3 cm. diameter).

Outstanding features of this species are the horizontal styles and the solid corona formed by the fused staminodes. Most closely allied is *T. Merrilliana*, also of New Guinea. Both are large fruited with woody calyces firmly adnate to the fruit. Also they both possess the unusual and conspicuous horizontal styles with flabelliform stigmas. In *T. Merrilliana* the styles are dichotomously branched, the staminodes form a similar corona of staminodes which are merely joined at the filaments and can be separated in dissection, the leaves are 15–21 cm. long with approximately 15 pairs of veins and the pedicels are always distinctly scurfy. In this species the styles are unbranched, the individual staminodes are fused together their entire length presenting a solid corona with minute fringe-like processes on the top, similar to but smaller than those found on the stigma. The leaves are 8–13 cm. long with only 5–6 pairs of veins. The pedicels are smooth. In all features of the flower the measurements are considerably smaller in this species than in those of *T. Merrilliana*. The petals are fleshy and concave.

It is a pleasure to name this distinctive species in honor of Professor Alfred Rehder, Curator of the herbarium at the Arnold Arboretum. Although more of a specialist in the Chinese flora, his interest in the Theaceae of New Guinea has been most helpful in the preparation of this paper.

Ternstroemia sogerensis Baker f. in Jour. Bot. 61: Suppl. 4. 1923.

No material was available for the study of this species, the description of which is rather meager in itself. Evidently no pistillate flowers or fruit were available to the author. The only measurements given are those of the leaves. For description and discussion of this species see Baker f., l.c.

Ternstroemia sphondylophora, spec. nov.

Frutex vel arbor parva ca. 2–3 m. alta, ramulis glabris verticillatis angulatis. Folia obovato-spathulata, verticillata, glabra, rubra, coriacea, 1.0–2.7 cm. longa et 0.5–1.2 cm. lata, apice rotundata, emarginata, basi cuneata in petiolum 1–2 mm. longum decurrentia. Flores dioeci, pauci; pedicelli ca. 3 mm. longi glabri, bracteolis duobus deltoideis sepaloideis apiculatis, nonnihil puberulentis, ca. 1.5 mm. longis latisque; sepala 5 imbricata, inaequalia, obtusa, rotundata, concava, pergamenacea, nonnihil puberulenta, 2–3 mm. longa et 3–4 mm. lata, margine scariosa; petala 5, subcrassa obtusa, ca. 4 mm. longa et 3 mm. lata, basi connata; ♂ flores: stamina $\pm$ 20, glabra, antheris 2 mm. longis, filamentis 1.0–1.5 mm. longis basi petalis adnatis, pistillodio parvo inconspicuo; ♀ flores: ovarium oblongum ca. 3 mm. longum et 1 mm. latum, biloculare, stylo sessili, stigmatibus duobus planis reniformis, basi staminodiis vel staminibus circumcinctum. Fructus ovoideus, glaber, ruber, crassus ca. 1.5–2.0 cm. longus et 1.5 cm. latus, seminibus ca. 6, luteis, funiculo ad 5 mm. longo.

A very distinct species characterized by its verticillate angled branchlets and verticillate spathulate leaves which, for the genus, are quite small measuring in the ♀ plants only 1–2 cm. long and in the ♂ plants 1.5–2.7 cm. long. The flowers, inconspicuous in both plants, are quite rare, found only occasionally and then singly on the terminal branchlets. At first, they appear as if they might belong to *Eurya*. However, closer examination shows the sessile style and reniform stigma. Also the fruits possess fewer and larger seeds than any species of *Eurya*.

NETHERLANDS NEW GUINEA: Eighteen kilometers southwest of Bernhard Camp, Idenburg River, mossy forest, abundant in low scrub on exposed peak, alt. 2150 m., *L. J. Brass* 12448, TYPE ♂, February 1939 (tree or shrub 2–3 m. high; flowers white).— Same locality, *L. J. Brass* 12449 ♀, February 1939 (fruit red, fleshy).

ADINANDRA JACK

Adinandra Brassii, spec. nov.

Arbor alta, ramulis glabris cinereis, cortice lamellosa (ex collectore), gemmis puberulentis. Folia glabra vel glabrescentia, coriacea, obo-

vata, 4–7 cm. longa et 2.5–4 cm. lata, apice subrotundata subemarginataque, basi cuneata, margine subrevoluta glandulis inconspicuis paucis, petiolis glabris 5–7 mm. longis. Flores in axillis foliorum solitarii, pedicellis glabris ca. 3 cm. longis basi 2 mm. et apice 4 mm. diam.; bracteolae duae, puberulae, coriaceae suboppositae flabelliformes, calycem proximae sepala exteriora simulantes, ca. 1.5 mm. longae et 2.5 mm. latae; sepala 5, inaequalia imbricata, concava, pergamenacea, pubescentia, obtusa, 5–6 mm. longa et 5–6 mm. lata, (5×6 mm. vel 6×5 mm.); petala 5, purpurea, subcrassa, subtiliter pubescentia, 15–20 mm. longa et 14–16 mm. lata, margine scariosa; stamina pentadelfa 55–60, filamentis 6–11 mm. longis, dorso dense hirsuta, antheris basifixis ca. 3–4 mm. longis; ovarium globoso-conicum, glabrum, 6 mm. longum et 7 mm. latum in stylum gracile elongatum gradatim attenuatum, 5-loculare, placentis prominentibus bifidis recurvis interdum ab axi subsecendentibus multiovulata; stylus integerrimus. Fructus globosus, ruber, ca. 2.7 cm. longus et 3.0 cm. latus.

BRITISH NEW GUINEA: Lake Daviumbu, Middle Fly River, rain-forest, *L. J. Brass* 7856, TYPE, Septembér 1936 (very large tree with thick scaly bark; flowers purple).—Wuroi, Oriomo River, Western Division, riverine rain-forest, alt. 5–10 m., *L. J. Brass* 5874, February 2, 1934 (large, heavy boled, spreading tree with flaky-scaly brown bark and tough brown wood; leaf apex down-turned and margin much recurved near base; flowers purple, pendent beneath leaves) (AA & N. Y. Bot. Gard.). NETHERLANDS NEW GUINEA: Two kilometers southwest of Bernhard Camp, Idenburg River, frequent on slopes of primary rain-forest, alt. 850 m., *L. J. Brass & Chr. Versteegh* 13176, March 19, 1939 (tree 29 m. high; diameter 43 cm.; crown not wide-spreading; bark 13 mm. thick, black scaly, fairly rough; sap-wood red-brown, heart-wood violet).—Six kilometers southwest of Bernhard Camp, Idenburg River, frequent tree of primary forest, on slope of ridge, alt. 1200 m., *L. J. Brass & Chr. Versteegh* 12519, Feb. 15, 1939, (tree 28 m. high, diameter 55 cm., crown not wide-spreading; bark 8 mm. thick, brown, fairly smooth; sap-wood light brown, heart-wood violet; flowers dark red; fruit green when young, red when mature).

A distinctive species characterized by thick, scaly bark, pubescent stamens, which are quite hirsute on the dorsal surface and upper portion of ventral surface. The basal portion of the filaments on the ventral surface is glabrous. The leaves are obovate. The only other known *Adinandra* from Papua, *A. Forbesii* Baker f., differs from the present species by having ovate-oblong leaves and glabrous stamens. I have not had the opportunity to examine Baker's species.

Variation can be found among the other specimens cited. In Brass 5874 and 13176 the leaves are more subrotund and larger (9 cm. $\times$ 5 cm.). Of No. 5874, Brass states "one of the largest forest trees in the district attaining a trunk diameter of $\pm$ 1 meter." Attached to specimen No. 13176 is an immature green fruit. This fruit is globose, ca. 1.8 cm. long and 2.0 cm. wide. Although there are no flowers present on the specimen, I feel that it belongs to *A. Brassii* because attached near the base of the immature fruit are found fragments of pubescent anthers, characteristic of the flowers of this species.

In his field notes, Brass refers to the bark of No. 12519 as "fairly smooth" from which it may be inferred that the bark is somewhat rough. Otherwise it agrees with the type specimen.

Adinandra Forbesii Baker f. in Jour. Bot. **61**: Suppl. 4. 1923.

This is the only species of *Adinandra* recorded before from New Guinea. No material is available for study at present and the species is listed here merely to complete the records of New Guinean Theaceae. For a discussion, see the comparison under *A. Brassii* Kobuski, above and the original description. Baker in his reference to *A. holosericea* Diels undoubtedly means *A. calosericea* Diels which, in this paper, is treated under the new genus, *Archboldiodendron*.

EURYA THUNBERG

Eurya albiflora White in Proc. Roy. Soc. Queensland **39**: 66, pl. 4, fig. 2. 1928.—Kobuski in Ann. Missouri Bot. Garden **25**: 346. 1937.

Eurya oreogena Diels in Bot. Jahrb. **62**: 483. 1929.

NORTHEAST NEW GUINEA: Morobe District, Sarawaket, *M. S. Clemens* 6093, March 1937.

I was indeed pleased to find this species represented among the Clemens' collection. Formerly,¹ I found it necessary to list and discuss the species without material, dependent entirely on White's very fine and detailed description. The leaves are coriaceous, deeply veined and glabrous on the upper surface. Below they are covered with a dense, grayish tomentose pubescence. This pubescence is found also on the young branchlets, especially near the terminals. For these reasons, as well as the cordate base of the leaf, it can easily be separated from its closest relative, *E. Brassii*.

Eurya Brassii Kobuski in Jour. Arnold Arb. **20**: 362. 1939.

BRITISH NEW GUINEA: Central Division, Wharton Range, Murray

¹Kobuski in Ann. Missouri Bot. Garden **25**: 346. 1937.

Pass, grassland ridge crests, alt. 2840 m., *L. J. Brass* 4185 ♀ TYPE, June 12, 1933 (common prostrate or ascending shrub, often rooting from branches; corolla white; fruit dark blue).— Central Division, Mt. Albert Edward, in low thickets on summits of low ridges on grasslands, alt. 3680 m., *L. J. Brass* 4499 ♂, July 11, 1933 (common, low dense-foliaged shrub with white flowers). NETHERLANDS NEW GUINEA: Lake Habbema, 3225 Meter Camp, plentiful in low shrubberies on open grassland, alt. 3225 m., *L. J. Brass* 9189 ♂, August 1938 (low shrub with thick stiff leaves and small cream-colored flowers).— Mt. Wilhelmina, 11 kilometers northeast of Wilhelmina-top in rather dry open place on edge of subalpine forest, alt. 3400 m. *L. J. Brass & E. Myer-Drees* 9685 ♂, September 9, 1938 (very small shrub; corolla white, soon turning brown).

Characterized by its small (1–2 cm. long), coriaceous leaves with nerves deeply impressed on the upper surface. In this respect, it resembles its var. *erecta* and *E. albiflora*. The variety is discussed below. *Eurya albiflora* differs in having the branchlets and under-surface of the leaves covered with a dense pubescence of long brown hairs. In *E. Brassii* the branchlets, except for the very young growth, are quite glabrous and the leaves are always glabrous.

Also closely related is *E. Hellwigii* Lauterbach. In Lauterbach's species the leaves are usually 3 cm. or over in length and about 2 cm. wide and possess up to nine pairs of veins. The habit is that of a tree (3–5 m.). In *E. Brassii*, the leaves are not only distinctly smaller but rarely have more than five or six pairs of veins.

***Eurya Brassii* var. *erecta*, var. nov.**

A typo differt habito erecto, ramulis glabris alatis albidis, foliis magis cuneatis atrovirentibus.

NETHERLANDS NEW GUINEA: Seven kilometers northeast of Mt. Wilhelmina summit, plentiful in subalpine forest borders, alt. 3560 m., *L. J. Brass & E. Myer-Drees* 9909, ♀, TYPE, September 1938 (tree or shrub 5 m.; fruit ovoid).— Same locality, on edge of forest, *L. J. Brass & E. Myer-Drees* 9906, ♀, September 1938 (tree or tall shrub; fruit globose).— Two kilometers east of Mt. Wilhelmina summit, common on creviced faces of sandstone, alt. 3800 m., *L. J. Brass & E. Myer-Drees* 10124, ♀, September 1938 (shrub one m. high).— Same locality, subalpine forest, alt. 3800 m., *L. J. Brass & E. Myer-Drees* 10330, ♀, September 21, 1938 (shrub $\pm$ 2.5 m. high; ripe fruits black, glossy).

"Trees or tall shrubs" is the description of the habit of this variety, as stated by the two collectors. The branchlets in all four numbers cited

above, are very erect and close and appear fastigate, although the collectors do not mention this feature. Also, these branchlets, whose surface is white and glossy, are distinctly winged, sometimes continuously so. This winged feature is found in most glabrous specimens of the genus, yet is not as pronounced as in this variety. The leaves are a much deeper green in color and decidedly more cuneate than those of the species.

In the species the collectors mentioned the habit as prostrate or as a small ascending shrub often rooting from the branches. The branchlets appear spreading, hardly fastigate and although grayish in color, lack the whitish surface of this variety. The leaves may be decurrent, thus giving an angled appearance to the stem which, however, is not as noticeable a character as the winged stems of the variety.

***Eurya Dielsiana*, spec. nov.**

Frutex erectus, 2 m. altus, ramulis teretibus pubescentibus. Folia subcoriacea, glabra, gemmis puberulentis, oblongo-elliptica, 2.5–3.5 cm. longa et 0.8–1.5 cm. lata, apice acuminata, basi cuneata, serrata, petiolis 2–3 mm. longis. Flores axillares, 1–2, pedicellis $\pm$ 2.5 mm. longis curvatis; bracteolae minutae, $\pm$ 0.5 mm. longae, obtusae; sepala 5, obtusa, inaequalia, imbricata, $\pm$ 1.25 mm. longa; petala 5, imbricata, inaequalia, apice obtusa $\pm$ 2.5 mm. longa et 1.5 mm. lata; stamina (flos δ) 5, filamentis crassis $\pm$ 1.5 mm. longis, antheris $\pm$ 0.75 mm. longis, pistillodio conico quam 1 mm. brevior; ovarium (flos η) globosum glabrum, $\pm$ 1 mm. longum; styli 3 liberi brevissimi, recurvi. Fructus immaturus ut videtur, glaber, $\pm$ 3 mm. longus et 2–2.5 mm. latus tri-locularis.

NETHERLANDS NEW GUINEA: Balim River, common in sparse second growth on deforested slopes, alt. 1600 m., *L. J. Brass 11646*, December 1938 (erect shrub 2 m. high; flowers white; fruit purple).

This erect shrub with its small (2.5–3.5 cm. long) oblong-elliptic leaves resembles no New Guinean species of *Eurya* closely. The stems are terete and the young branchlets and leaves are puberulent. The flowers are quite small for the genus, in fact, not more than 2–3 mm. long over all. Likewise, the styles (three in number) are very minute, measuring hardly more than 0.25 mm.

It is a pleasure to name this species after Professor L. Diels of the Berlin Botanical Garden and Museum. Professor Diels, in 1922, published the last comprehensive study of Theaceae in New Guinea.

***Eurya gracilipes*, spec. nov.**

Arbor gracilis vel frutex ad 3 m. altus, ramulis foliisque juvenilibus

pubescentibus. Folia submembranacea opaca glabra oblongo-lanceolata, 6.0–8.5 cm. longa et 1.5–2.0 cm. lata, apice tenuiter acuminata, basi asymmetrica, cuneata, serrata, petiolis 3–5 mm. longis. Flores ♀ axillares 1–3, pedicellis ca. 2–3 mm. longis sparse hirsutis; bracteolae inaequales, apiculatae sparse hirsutae, $\pm$ 1 mm. longae; sepala 5, inaequalia, imbricata, obtusa, apiculata, ca. 1.5 mm. longa, exteriora sparse hirsuta; petala 5, inaequalia, imbricata, alba, oblongo-ovata vel oblongo-obovata, ca. 2 mm. longa et 1 mm. lata; ovarium globosum, glabrum, ca. 1.25 mm. diametro, stylis 3 brevissimis. Fructus immaturus, ca. 4 mm. longus et 3 mm. latus, pedicello gracili 5–6 mm. longo.

NETHERLANDS NEW GUINEA: Fifteen kilometers southwest of Bernhard Camp, Idenburg River, common in seral mossy forest, alt. 1700 m., *L. J. Brass* 12323, ♀ TYPE, January 1939 (very slender tree, 3 m. high with white flowers.— Same locality, alt. 1800 m., *L. J. Brass* 12260, January 1939 (slender shrub or near tree 1.5–3 m., high with white flowers and black fleshy fruit).

Characterized by slender-acuminate and asymmetrically cuneate leaves. The styles are three in number and very short. This last character is the most significant in separating the species from *E. leptantha* Diels which according to the author is five-styled. Also, Diels' species is a tree to 10 m. high and has leaves which are dark green in color and measure 4.5–5.0 cm. long and 1.0–1.5 cm. wide. *Eurya gracilipes* is a slender tree or shrub growing to 3 m. only and has leaves 6.0–8.0 cm. long and 1.5–2.0 cm. wide. Perhaps the character most striking to the eye, is the slender graceful pedicels (5–6 mm. long) found in the fruiting specimens. It is from this character that the name has been derived.

Eurya Greenmaniana Kobuski in Ann. Missouri Bot. Garden, **25**: 344. 1937.

NORTHEAST NEW GUINEA: Murray Pass, Wharton Range, Central Division, common at fringes and interior of forests, alt. 2840 m., *L. J. Brass* 4744 (TYPE AA, also in N. Y. Bot. Gard.), June–September 1933.

For a discussion of this species see Kobuski, 1.c.

Eurya Groffii Merrill in Philip. Jour. Sci. **25**: 247. 1919.— Melchior in Engler & Prantl, Nat. Pflanzenfam. ed. 2, **21**: 148. 1925.

Eurya acuminata De Candolle var. *multiflora* sensu Rehder & Wilson in Sargent, Pl. Wilson. **2**: 401. 1915, non Blume.

Eurya acuminata De Candolle var. *Groffii* (Merrill) Kobuski in Ann. Missouri Bot. Gard. **25**: 325. 1937.

NETHERLANDS NEW GUINEA: Six kilometers southwest of Bernhard

Camp, Idenburg River, rain-forest subsidiary tree, alt. 1200 m., *L. J. Brass* 12970, February 1939 (tree 16 m. high, 20 cm. diam.; leaves stiff; flowers white).

Merrill's species *E. Groffii*, has been reinstated here as a species. In 1937, after considerable vacillation, I made it a variety of *E. acuminata* DC. At that time, I mentioned my uncertainty as to its status. Until now, *E. Groffii* has been confined to the states of China overlapping in western China with *E. acuminata*. It was with surprise that I noted it among the sheets of Papuan material for study.

It may be characterized by its dense pubescence on the younger branches and leaves, its terete stems, leaves long-acuminate at the apex and cuneate into the sessile base or very short petiole.

Cited here dubiously are two numbers also from Netherlands New Guinea, — *L. J. Brass* 12291 and *L. J. Brass & Chr. Versteegh* 11961. These two numbers are from pistillate plants and resemble the Chinese members of the species very closely. The young stems are angled by the decurrent leaves losing the terete character of true *E. Groffii* and are more nearly glabrous than pubescent.

***Eurya habbemensis*, spec. nov.**

Arbor 3–4 m. alta; ramulis teretibus glabris, ramulis foliisque juvenilibus pubescentibus. Folia coriacea, opaca, glabra, atrovirentia, ovata vel elliptica, 10–15 cm. longa et 5.5–7.0 cm. lata, apice obtusa, basi obtuse cuneata vel subrotundata, serrata, venis subtus prominentibus, petiolis 5–8 mm. longis. Flores ignoti. Fructus axillares 1, 2 vel 3, rotundati vel globosi, glabri 5–6 mm. longi latique, 5-loculares, pedicello 3–4 mm. longo; bracteolae inaequales deltoideae vel obtusae, ca. 3 mm. longae; sepala 5, submembranacea, inaequalia, obtusa subinde apiculata, glabra, 5–6 mm. longa lataque; styli 5 liberi 1.0–1.5 mm. longi.

NETHERLANDS NEW GUINEA: Nine kilometers northeast of Lake Habbema, 2800 Meter Camp, occasional in forest of moist hollows, alt. 2800 m., *L. J. Brass* 10503, October 1938 (undergrowth tree 3–4 m. high; fruit immature).

Like so many species of *Eurya* from New Guinea, the above species is characterized by having five free styles. However, the broad ovate or elliptic, dull, light green leaves, obtusely cuneate or subrotund at the base are the most outstanding characters. Seven cm. across is a most unusual foliar measurement in this genus. Even though flowers are not available and the fruits are immature, this species is one of the most outstanding, at least superficially, of the whole genus.

Eurya Hellwigii Lauterbach in Nova Guinea, 8⁴: 841. 1912.— Kobuski in Ann. Missouri Bot. Garden, 25: 345. 1937.

NETHERLANDS NEW GUINEA: summit of Hellwig Mts., alt. 2500 m., *L. von Roemer* 1249 (TYPE; photo, AA), Nov. 1909. BRITISH NEW GUINEA: Mt. Albert Edward, Central Division, common on forest fringes, alt. 3680 m., *L. J. Brass* 4264, May–July, 1933 (tree 3–5 m., with stiff spreading branches; branchlets reddish; leaves yellowish beneath; flowers white).

For a discussion of this species see Kobuski, l.c.

Eurya idenburgiensis, spec. nov.

Arbor 6 m. alta, glabra, ramulis juvenilibus angulatis exceptis. Folia membranacea glabra, juvenilibus exceptis, oblongo-lanceolata, 6–10 cm. longa et 1.5–2.5 cm. lata, graciliter acuminata, basi cuneata vel subrotundata, serrata, venis obscuris, petiolis glabris $\pm$ 3 mm. longis. Flores ♀ axillares, 1–2, albi, pedicellis glabris recurvatis 2–3 mm. longis; bracteolae duae, suboppositae, glabrae, obtusae abrupte apiculatae, $\pm$ 0.5 mm. longae; sepala 5, imbricata glabra inaequalia concava, obtusa, $\pm$ 1.0 mm. longa et 0.75 mm. lata, ciliata vel fimbriata; petala 5, imbricata inaequalia, obtusa, $\pm$ 2 mm. longa et $\pm$ 1 mm. lata; ovarium globosum, glabrum, $\pm$ 1 mm. longum, quinqueloculare, multiovulatum. Fructus immaturus.

NETHERLANDS NEW GUINEA: Four kilometers southwest of Bernhard Camp, Idenburg River, on open high banks of rain-forest stream, alt. 850 m., *L. J. Brass* 13427, March 1939 (tree 6 m. high with white flowers).

In leaf shape, this species resembles the acuminate species of China (i.e. *acuminata*, *Groffii*, *trichocarpa*). However, it can easily be separated from these by its 5-celled ovary, 5 styles, glabrous and angled stems. The bracteoles are very short ($\pm$ 0.5 mm.) and sharply apiculate.

Eurya leptantha Diels in Bot. Jahrb. 57: 433. 1922.— Kobuski in Ann. Missouri Bot. Garden, 25: 349. 1937.

NORTHEAST NEW GUINEA: Schraderberg, Sepik Terr., mountain forest, alt. 2070 m., *C. Ledermann* 12201 (TYPE; photo. & fragment, AA) (tree 8–10 m., with dark brown bark; leaves shiny, dark green, gray-green beneath; flowers white).

For a discussion of this species see Diels, l.c., and Kobuski, l.c.

Eurya meizophylla (Diels) Kobuski in Ann. Missouri Bot. Garden, 25: 348, 1937.

Eurya tigang Schumann & Lauterbach var. *meizophylla* Diels in Bot. Jahrb. 57: 434. 1922.

NORTHEAST NEW GUINEA: Lordberg, wooded mountains, alt. 1000 m., *C. Ledermann* 9981 (TYPE; photo. and fragment, AA) (slender tree 15–20 m., with brown bark, white flowers and dark green leaves).

For a discussion of this species, see Kobuski, l.c.

Eurya Merrilliana Kobuski in Ann. Missouri Bot. Garden, **25**: 347. 1937.

NORTHEAST NEW GUINEA: Morobe District, Sarawaket, *M. S. Clemens* 5914, March 1937. BRITISH NEW GUINEA: Murray Pass, Wharton Range, *L. J. Brass* 4660 TYPE, and 4575.

Added here is Clemens' specimen no. 5914. This specimen is from a much older plant than the two Brass numbers 4660 and 4575 and is rather poor. The leaves seem more coriaceous but have the characteristic veining perpendicular to the midrib.

Eurya oxysepala Diels in Bot. Jahrb. **57**: 435. 1922.— Kobuski in Ann. Missouri Bot. Garden, **25**: 350. 1937.

NORTHEAST NEW GUINEA: Schraderberg, Sepik Terr. mountain forest, alt. 2070 m., *C. Ledermann* 11971 (TYPE; photo. and fragment, AA), June 13, 1913 (tree 15–20 m.; flowers white; leaves shiny dark green with bright red petioles, young leaves yellowish red; bark gray-brown).

For a discussion of this species see Diels, l.c., and Kobuski, l.c.

Eurya Perryana, spec. nov.

Arbor diffuse ramosa ca. 4 m. alta, ramulis junioribus villosis. Folia subcoriacea, ovata vel elliptica, 1.5–2.25 cm. longa et 0.9–1.1 cm. lata, apice obtusa, basi obtusa vel subtruncata, supra nitide atrovirescentia, glabra, subtus subnitida flavovirescentia, villosa, serrata, subsessilia, petiolis ca. 1 mm. longis. Flores ♀, 1 vel 2, axillares, pedicellis 1.5–2.0 mm. longis; bracteolae lineares, ca. 2 mm. longae, apiculatae; sepala 5, sublinearia, glabra, subpetaloidea, apiculata, 1.5–2.25 mm. longa; petala 5, oblonga, 2.0–2.25 mm. longa et 1.0–1.5 mm. lata, acuminata; ovarium globosum, glabrum ca. 1 mm. diam., 3-loculare, multi-ovulatum; styli 3, liberi, ca. 0.5 mm. longi recurvati. Fructus immaturus glaber, globosus, 2 mm. longus ca. 3 mm. diam.

NETHERLANDS NEW GUINEA: Nine kilometers northeast of Lake Habbema, shaded banks of forest stream, alt. 2800 m., *L. J. Brass* 10248A, TYPE, October 1938 (straggling tree, 4 m. high; flowers cream-colored).— Same locality, alt. 2900 m., *L. J. Brass* 10848, October 1938 (tree 2 m. high; flowers white).

Because of its small, semi-coriaceous, subsessile leaves, *E. Perryana*

is outstanding among the Papuan species of *Eurya*. Also the flower, because of its small, almost minute, acuminate petals and sepals is very significant.

Superficially, it resembles most those small-leaved endemic Formosan species, *E. leptophylla* Hayata and *E. crenatifolia* (Yamamoto) Kobuski.

It is a pleasure to name this distinctive species in honor of Dr. Lily M. Perry of the Arnold Arboretum. In conjunction with Dr. E. D. Merrill, Dr. Perry is preparing the "Plantae Papuanae Archboldianae."

Eurya phyllopoda (Diels) Kobuski in Ann. Missouri Bot. Garden, **25**: 350. 1937.

Eurya tigang Schumann & Lauterbach var. *meizophylla* Diels in Bot. Jahrb. **57**: 435. 1922.

NORTHEAST NEW GUINEA: Sepik Terr., rocky peak, forest, alt. 1400–1500 m., *C. Ledermann* 12752 (TYPE; photo. and fragment, AA), August 19, 1913 (tree 10–12 m. with greenish white flowers and blue-black fruit; leaves bright shining green, almost white [fide collector] underneath).

For a discussion of this species see Kobuski, l.c.

Eurya pluriflora, spec. nov.

Arbor gracilis 3 m. alta, ramulis brunneo-griseis angulatis glabris. Folia coriacea, glabra, oblongo-ovata vel oblongo-elliptica, 5.0–8.5 cm. longa et 2.5–3.5 cm. lata, acuminata, emarginata, basi cuneata, serrata venis undique elevatis, petiolis glabris 2–4 mm. longis. Flores parvi, albi, 1–6 in axillis foliorum, pedicellis 2–3 mm. longis; sepala 5, imbricata glabra, concava, inaequalia, basi connata, obovata $\pm$ 1 mm. longa, apice subrotundata, bracteolis 2 glabris apiculatis $\pm$ 0.5 mm. longis subtenta; petala 5, imbricata, inaequalia, obovata basi connata, apice subrotundata, $\pm$ 2 mm. longa et 1.25 mm. lata; ovarium globosum, glabrum, $\pm$ 1 mm. longum; styli 3 vel 4 vel 5, liberi vel subconnati, $\pm$ 0.5 mm. longi. Fructus immaturus.

NETHERLANDS NEW GUINEA: Balim River, forest undergrowth, alt. 1600 m., *L. J. Brass* 11705, December 1938 (slender tree 3 m. high; flowers white; fruit immature).

This species is closely related to *E. Merrilliana* from which it can be separated by its variable number of styles 3–4 occasionally 5, its angled branches and glabrous leaves and branchlets and its much smaller flowers. *Eurya Merrilliana*, as far as is known, consistently has five styles, the branches are terete, the leaves and branchlets are sparingly pubescent in the adult stage and quite hirsute in the young growth. In leaf-character

one finds a great resemblance between the two species. The veining in *E. Merrilliana* is nearly perpendicular whereas in *E. pluriflora*, the veins arise at an obtuse angle. One cannot help feeling that *E. pluriflora* may possibly be a hybrid with *E. Merrilliana* one of the parents.

The number of flowers found in the leaf axils is most interesting. In the majority of species, one, two or even three is the usual number. In this species the number varies from one to, in many cases, six. The specific name "pluriflora" is based upon this character.

Eurya Rehderiana Kobuski in Ann. Missouri Bot. Garden, **25**: 349. 1937.

BRITISH NEW GUINEA: Mt. Tafa, Central Division, common in forests on lower slopes, alt. 2400 m., *L. J. Brass* 5073 (TYPE AA, also in N. Y. Bot. Gard.) May–September 1933.

For a discussion of this species see Kobuski, l.c.

Eurya Roemerii Lauterbach in Nova Guinea, **8**⁴: 842. 1912.— Kobuski in Ann. Missouri Bot. Garden, **25**: 344. 1937.

NETHERLANDS NEW GUINEA: lowlands of Hellwig Mts., alt. 750 m., *L. von Roemer* 848, (TYPE: photo. and fragment, AA), November 1909.

For a discussion of this species see Kobuski, l.c.

Eurya subrotunda, spec. nov.

Frutex ramis pendentibus ad 1 m., ramulis junioribus pubescentibus. Folia subrotundata, nitida atrovirescentia, glabra, 2–3 cm. longa et 1–2 cm. lata, apice obtusa vel subrotundata, basi obtusa vel subrotundata, margine revoluta et crenulato-serrata, venis supra profunde impressis subtus elevatis rubris, petiolis 3–5 mm. longis. Flores ♀ in axillis solitarii, albi subsessiles, pedicellis 1.0–1.5 mm. longis; bracteolae 2, oblongo-obtusae, apiculatae, 0.8–0.9 mm. longae, glanduloso-fimbriatae; sepala 5, inaequalia, glabra imbricata, ca. 1.5 mm. longa, apiculata vel retusa, glanduloso-fimbriata; petala 5–6, oblongo-obtusa, inaequalia imbricata, basi connata, petalo exteriore apiculato, interioribus retusis, ca. 3 mm. longa et 1.0–1.5 mm. lata; ovarium glabrum subglobosum trisulcatum, ca. 1.25 mm. diam., tri-loculare, multiovulatum; styli 3 liberi, minimi recurvi ca. 0.25 mm. longi. Fructus niger, globosus ca. 4 mm. diam.

NETHERLANDS NEW GUINEA: Eleven kilometers northeast of Mt. Wilhelmina summit, on perpendicular banks of stream in forest, alt. 3400 m., *L. J. Brass & E. Myer-Drees* 9808, September 1938 (pendent to 1 m. or more; flowers white; fruit black, fleshy).

The small bracteoles (0.8–0.9 mm.) with their button-like apicules

and glandular fimbriate margins and the sepals similar to the bracteoles in margin and apex, are outstanding characteristics of this species. The petals are also unequal and are characterized by having the outer petal apiculate while the other 4 or 5 as the case may be, are retuse at the apex. The veins present a most interesting character. Those of the upper surface of the leaf are deeply imbedded like those of several other species of *Eurya*; however, the veins of the lower surface, dark red in color, open and with few cross-veins, the two lower pairs often starting from the base of the leaf, simulate very much the wing-pattern of some insects.

A closely related species is *E. Hellwigii* Lauterbach from Northeast and British New Guinea. The latter species has larger leaves, similar in veining with the veins nearly perpendicular to the midrib and very reticulate. The floral parts are all much larger and are uniform in shape.

Eurya Tigang Schumann & Lauterbach, Fl. Deutsch. Schutzgeb. Südsee, 447. 1901.—Diels in Engler, Bot. Jahrb. **57**: 434. 1922.—Kobuski in Ann. Missouri Bot. Garden, **25**: 347. 1937.

NORTHEAST NEW GUINEA: Morobe District: Sattelberg, *Bamber* 24 (TYPE; photo. and fragment, AA), December 24, 1898.—Same locality *M. S. Clemens* 1280, December 20, 1935.—Ogeramnang, alt. 1725 m., *M. S. Clemens* 4556, December 8, 1936.—Same locality, alt. 1800 m., *M. S. Clemens* 5399, February 15, 1937. NETHERLANDS NEW GUINEA: Bele River, eighteen kilometers northeast of Lake Habbema, in second growth forest, alt. 2350 m., *L. J. Brass* 11454, 11560A, November 1938 (slender tree 4–5 m. high; flowers white).

This species is characterized by oblong, linear-lanceolate leaves, 4–12 cm. long, 1.5–3.2 cm. wide, acuminate at the apex, rounded to cuneate at the base, short petiolate (2–3 mm.) or subsessile, the young leaves and branchlets covered with a rust-colored pubescence.

Measurements made from the ♂ flowers of the Brass material show bracteoles 2.5 mm. long, acute at apex; sepals unequal ca. 4.5 mm. long, 2.5 cm. wide, obtuse at apex; petals ca. 6 mm. long, 3⁺ mm. wide; stamens 4.5 m. long, anthers ca. 2 mm. long, filaments ca. 2.5 mm. long, pistillode ca. 3 mm. long, 1 mm. wide, long acuminate. These measurements add to the range in size of the ♂ flowers. Another interesting feature is that the sepals are pubescent on the inner as well as the outer surface.

Eurya spec.

NETHERLANDS NEW GUINEA: Eighteen kilometers southwest of Bernhard Camp, Idenburg River, plentiful on an open rock slide in

mossy forest, alt. 2150 m., *L. J. Brass 12456*, February 1939 (very slender "tree" 2 m. high; fruit blue-black).

This specimen collected by Brass (12456) in Netherlands New Guinea probably represents a new species. However, the material is insufficient to permit a complete and accurate description. No flowering material, either staminate or pistillate, is available and the fruits appear immature. The leaves are 3.5–4.5 cm. long and 1.0–1.7 cm. wide, ovate, coriaceous, nearly linear-acuminate at the apex, cuneate to rounded at the base, pubescent on the under surface and the margin sharply serrate. The fruiting styles may be 3, 4 or 5 in number and this variation is found in nearly equal distribution in the material examined. In gross structure it lacks individual character, resembling any number of species, yet wholly agreeing with none.

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HARVARD UNIVERSITY.



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