

THE LORANTHACEAE OF THE OXFORD UNIVERSITY EXPEDITION TO SARAWAK IN 1932

BY

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Through the kind intermediary of the Direction of the Botanic Gardens at Kew, the opportunity was given to the author to revise the rather small but very interesting collection of Loranthaceae of the expedition above mentioned. The 17 numbers collected belong to 15 species, of which 4 are new to science, 4 new for Borneo, 5 endemic for Borneo and collected only few times up to the present, whereas only 2 belong to species more common in Borneo and moreover widely spread outside this island.

Amylotheca duthieana (King) Danser — Richards 1465, Mt. Dulit (Ulu Tinjar, near Long Kapa), c. 400 m alt., 26 VIII 1932, on tall tree, nearly 130 ft from ground, in primary forest; leaves dark green, thick and leathery, corolla bright scarlet, lobes black. — Up to the present only known from the Malay Peninsula and the Riau Archipelago, whereas the closely related *A. borneana* is known from 4 localities in Borneo. The number Richards 1465 wholly agrees with *A. duthieana*, with exception of the corollas being 55—65 mm long, which is an approach towards *A. borneana*.

Lepeostegeres inconspicuus Danser — Richards 1434, Mt. Dulit (Ulu Tinjar, near Long Kapa), under 300 m alt., 24 VIII 1932, in primary forest; climber on tall trees, petals yellowish, bracts deep crimson, flowers sweet

scented. — Collected several times, but in Sarawak only. The new materials differ from the original ones by having the corollas somewhat longer, up to 55 mm long, and the filaments nearly 12 mm long. The flower colour of former specimens was indicated as red, those collected by Richards as yellowish, but with a deep-crimson involucre.

Macrosolen pusillus Danser, n.sp. — Omnis glabra. Ramuli teretes, internodiis foliiferis 8—18 mm longis, 1—1.5 mm crassis, nodis paulum applanatis, ad sesquiplo latoribus, vetustiores crassiores nodis magis incrassatis, subtorulosi. Folia opposita vel subopposita; petiolus 1—3 mm longus crassiusculus, subtus rotundatus, supra laminam versus applanatus; lamina ovata vel ovato-oblonga, basi rotundata, apicem obtusiusculum versus paulum acuminata, pro magnitudine crasse coriacea, costa supra paulum subtus valde prominente, nervis lateralibus venisque omnibus supra impressis distinctis subtus invisibilibus. Inflorescentiae singulae vel paucae in axillis foliatis et etiam defoliatis; axis 5—12 mm longus, basi 0.5 mm crassus apicem versus tenuior, internodiis 2—4, inferiore nonnunquam bracteas steriles tantum ferente, ceteris floriferis paulum applanatis; pedicelli 2—1 mm longi, parte axis adjacente subaequicrassi; bracteae ovatae, obtusae vel acutiusculae, plerumque 0.5—0.75 mm longae, inferiores saepe longiores; bracteolae ovatae obtusae, c. 0.5 mm longae, liberae vel subliberae. Calycis tubus ovatus, 1.5—1.75 mm longus, 1—1.25 mm latus, sub limbo paulum constrictus; limbus c. 0.25 mm longus cupuliformis, integer. Corolla 7 mm longa, supra basin constrictam brevissime cylindricam in dimidia parte inferiore inflata ad 2 mm lata, paulum sub medio alis angustis 6 angulo obtuso prominentibus, usque ad medias alas divisa in lacinias 6 spathulatas obtusiusculas crassiusculas c. 4 mm longas 0.5 mm latas recurvatas. Filamenti pars libera c. 1.5 mm longa; anthera 1 mm longa, mox vieta. Stylus in 1 mm infimo conicus, ceterum stigma versus paulum incrassatus,

0.5—0.75 mm supra basin articulatus; stigma capitatum, styli apice duplo crassius, 0.4 mm crassum. Fructus immaturus ovato-globosus, calycis limbo incrassato et styli basi permanente coronatus. — Richards 1993, Dulit ridge, c. 1300 m alt., 20 IX 1932, open moss forest on exposed peak; corolla pink, lobes red, filaments pink with numerous red spots, fruit (young?) yellow, leaves thick, glossy above.

Macrosolen floridus Danser — Richards 1894, Dulit ridge, c. 1300 m alt., 17 IX 1932, on upper branches of a *Quercus* (R. 1885) in shady moss-forest; corolla crimson, the contracted part blackish purple. — I cannot separate this specifically from *M. floridus*, from Mt. Kinabalu; the original description of this species would wholly agree with Mr. Richards' specimen, if the following, rather unimportant, alterations would be made. — Internodia foliifera 1—5 cm longa; foliorum lamina 3—5.5 cm longa, 1—2.5 cm lata; inflorescentia umbellata 2—4-flora vel racemosa 4—6-flora; axis 5—10 mm longus, c. 0.25 mm crassus, basi clavatum incrassatus; pedicelli tenuissimi; bractee ovatae, acutae vel obtusae, c. 0.5 mm longae, bracteolae paulo minores obtusae. Corolla statu alabastri tantum nota, forte nondum adulta, ad 18 mm longa, a basi tubulosa ad duas tertias longitudinis sensim ad 1.5 mm dilatata, ibi alis 6 angustis in carinas 6 usque ad apicem percurrentes transeuntibus, clava apicali obovata 6-angula, obtusissima, 2 mm longa 1.5 mm crassa. Fructus omnino ignoti.

Macrosolen formosus (Bl.) Miq. — Richards 2405, Gunong Balapau (Ulu Tinjar), 600—700 m alt., 2 II 1932, parasite on tree about 10 m high in primary rain forest; shrub 1—2 m high, calyx greenish yellow, corolla tube scarlet, segments internally dark red with oval white patch, externally white and red. — First record for Borneo, but widely spread in the Malay Peninsula, Sumatra and Java.

Macrosolen Beccarii Becc.? — Richards 2680, Marudi (Claudetown), forest reserve, under 300 m alt., heath

forest, II 1932; climbing parasite c. 1 m long, on small shrubs &c. in undergrowth, numerous haustoria along stem, corolla scarlet with two bands of black. — A small specimen with flower-buds, not determinable with certainty. *M. Beccarii* is only known from Borneo, and most specimens have been collected in Sarawak.

Macrosolen nobilis Danser, n.sp. — Valde robusta, omnis glabra. Ramuli foliiferi 6—8 mm crassi, nodis incrassatis, ceterum ignoti. Folia omnino sessilia, oblongo-lanceolata, sub basi rotundata nonnihil cordata, apicem obtusiusculum versus acuminata, 30—45 cm longa, 12—18 cm lata, coriacea, inter nervos laterales primarios et secundarios bullata, utraque facie opaca vel sublucida, penninervia, costa supra leviter subtus valde prominente, nervis lateralibus crassioribus supra impressis subtus valde prominentibus, venis supra tenuiter impressis subtus invisibilibus. Inflorescentiae probabiliter in axillis foliorum vetustiorum et in nodis defoliatis, racemi condensati; axis 5—10 mm longus, basi c. 3 mm crassa involucro bractearum decussatarum triangularium carinatarum, quarum interiores ad 4 mm longae, fere a basi florifer, insertionibus pedicellorum incrassatis irregularis, paria 4—6 florum decussata ferens; pedicelli inferiores ad 2.5 mm longi 1.5 mm crassi, superiores breviores; bracteae ovato-triangulares acuminatae carinatae, 5—6 mm longae; bracteolae ovatae vel magis orbiculares, obtusae, 2.5—3 mm longae, ad tertiam vel dimidiam partem longitudinis connatae. Calyx subcylindricus, tubo c. 4 mm longo 3 mm lato, limbo 2 mm longo paulo latiore, margine integro vel levissime dentato. Corolla statu alabastri adulti ad 100 mm longa, a basi subrotundata ad dimidiam longitudinem c. 3.5 mm lata cylindrica, deinde paulum ampliata 6-angula, ad c. 25 mm ab apice 6—7 mm lata alis 6 angulo obtuso prominentibus c. 2 mm latis, supra alas vix attenuata et in clavam subprismaticam vix incrassatam 6—7 mm crassam anguste sed acute 6-alatam

obtuse acuminatam exiens, postea partita usque ad alas in lacinias 6 parte angustissima recurvatas vel magis volutas, parte recurvata anguste spathulata 3 mm lata, crassa, acuta, sectione transversa quadriangula. Filamenti pars libera 9—10 mm longa, basi 0.5 apice 0.75 mm lata; anthera 8—9 mm longa, basi subcordata facie interiore paulum prominentia, cum filamento subarticulata, apice obtusa, 1—1.25 mm lata, loculis 4 continuis. Stylus corolla aequilongus, c. 0.5 mm crassus, teres, in 2 mm superioribus paulo crassior sulcis 12 tenuibus; stigma subglobosum obtusissimum, styli apice c. sesquiplo crassius. Fructus &c. ignota. — Richards 1403, Mt. Dulit (Ulu Tinjar, near Long Kapa), under 300 m alt., 23 VIII 1932, edge of opening in primary forest, woody climber on tree, flowering at c. 3—4 m from ground, calyx red, lower part of corolla-tube scarlet, upper greenish white, lobes pale green with border of dull red, leaves very hard and leathery; type. — Richards 1096, Dulit Trail, under 300 m alt., 3 VIII 1932, rocky rain forest on edge of torrent, corolla scarlet with black band, texture somewhat succulent, vernacular name *banalu*. — Closely related to *M. Acunae* (Merr.) Danser from Mindanao, and to *M. splendidus* Danser from Mt. Kinabalu, differing from both by the very large, quite sessile leaves, the coarser more condensate inflorescences, and the acuminate flower-buds. The second specimen mentioned is abnormal in a peculiar way, having the appearance of a specimen that could not root well in the host tree; it is a runner c. 60 cm long, 3—7 mm thick, bearing a very weak twig with one small leaf and several inflorescences partly in flower, partly in fruit. Similar abnormal forms I saw of several species in different genera. The flowers, however, of Richards 1096 are quite like those of Richards 1403. Cfr. fig. 1c. The calyces are described after dry materials but drawn after materials soaked in ammonia.

Lepidaria pulchella Danser — Richards 1449, Mt.

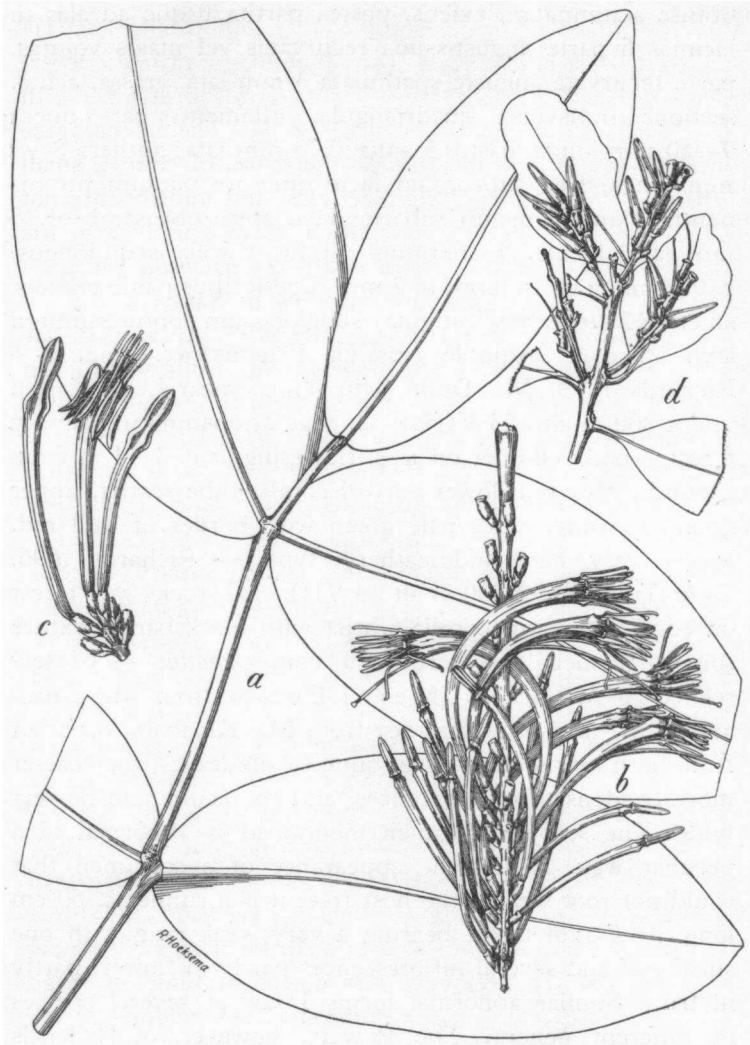


Fig. 1a and b: *Trithecanthera superba*; c: *Macrosolen nobilis*; d: *Helixanthera dura*; all ♂.

Dulit (Ulu Tinjar, near Long Kapa), c. 500 m alt., 25 VIII 1932, on tall tree, c. 90 ft from ground, in primary forest on steep spur of mountain; flowers crimson striped with white, of thick waxy consistency. — The specimens agree very well with the type, though there are, of course, small differences. The young twigs, petioles, and midribs, are not furfuraceous, the petiole may reach 25 mm in length, the leaf 13 cm in length, 8 cm in width. *L. pulchella* has been collected before only in few localities in Sarawak.

Helixanthera dura Danser, n.sp. — Inflorescentiae et alabastra tomento rubro-badio indurato, usque ad anthesin permanente, vestita; ceterae partes glabrae (ramuli et folia iuvenilia ignota). Omnes partes fibris sclerenchymaticis fractione valde barbatae. Ramuli subteretes, versus insertiones foliorum valde dilatati, plerumque 2—5 mm crassi, vetustiores irregulariter obtusanguli, versus axillas incrassati. Folia sparsa; petiolus difficile a lamina distinguendus, supra basin incrassatam teres, laminam versus dorsiventraliter applanatus, prope laminam supra planus subtus paulum convexus, 5—12 mm longus; lamina circiter obovata, saepe forma irregulari, sub basi cuneata in petiolum attenuata, apice rotundata (si non irregularis), 6—9 cm longa, 3—5 cm lata, faciebus paulum diversis, crasse coriacea, opaca, tenuiter pennatim rugulosa, costa supra subplana usque fere ad apicem visibili, subtus praesertim basin versus valde prominente sed parte apicali invisibili, nervis lateralibus crassioribus utraque facie vix vel haud visibilibus, nervatura cetera omnino invisibili. Inflorescentiae singulae in axillis foliorum, saepe versus apices ramulorum magis minusve congregatae; axis plerumque 2—4 cm longus, basi margine scrobiculi corticis circumdatus, ceterum irregulariter angulose sulcatus, supra basin c. 2.5 mm crassus, apicem versus paulo tenuior, in 5—15 mm inferioribus nudus, ceterum floribus 3—7 sparsis omnibus sessilibus vel inferioribus pedicello ad 2 raro 3 mm longo, c. 1.5 mm crasso;

bracteae in prolongatione pedicellorum circuitu subellipticae, 4 mm longae, apice rotundatae, cucullatae, dorso incrassatione squamiformi. Calyx angulum cum pedicello faciens; tubus subcylindricus, plerumque c. 5 mm longus 2—2.5 mm latus; limbus subinfundibuliformis, c. 1 mm longus, integer vel levissime irregulariter dentatus. Corolla statu alabastri adulti 18—19 mm longa, supra basin rotundatam inflata ad 5 mm lata subquinquangula, deinde subito ad 3 mm angustata, deinde sensim ad apicem 1.5—2 mm latam rotundatam attenuata, parte superiore distincte 5-angula, postea partita in petala 5 medio c. 1 mm crassa, basi et apice paulo minus crassa, apice obtusiuscula, facie interiore paulum excavata. Stamina corollae subaequilonga; filamentum pars libera ignota; anthera 5—6 mm longa, a basi ad apicem acutum sensim attenuata. Stylus corollae subaequilongus, a basi c. 0.75 mm crassa ad apicem c. 0.3 mm crassum sensim attenuatus, parte inferiore sulcis 5, parte superiore 6 mm longa sulcis 10; stigma vix stylo crassius, obtusissimum. Fructus ignotus. — Richards 1926, Mt. Dulit, Ulu Koyan, 800—900 m alt., 18 IX 1932, sandy („heath”) forest, on tree; flowers pale orange-brown externally, dark red internally, filaments and stamens red, leaves bluish green. — Strongly resembling *H. crassipetala*, but differing by the nearly sessile flowers and the peculiar indumentum; perhaps, however, a form of this species, or, like it, a variety of *H. cylindrica*, but by the sessile flowers and the indumentum approaching *H. maxwelliana* from Mt. Kinabalu. Cfr. fig. 1d.

Helixanthera parasitica Lour. — Richards 2636, Logan, near Long Tru (Ulu Tinjar), under 300 m alt., 23 II 1932, on tree c. 10 m high, secondary forest; entire flower and inflorescence axes bright red. — First specimens seen from Borneo, though already Korthals mentions this species from southern Borneo. Other records are probably bearing on *H. xestophylla*. The species is widely spread in

south-eastern Asia and in the northern and western parts of the Malay Archipelago.

Helixanthera spicata Danser — Richards 1956, Mt. Dulit (Ulu Tinjar, near Long Kapa), 700—900 m alt., 19 IX 1932, rain forest on steep slope; woody liane on large tree, flowers and fruit bright carmine. — Collected only once before, *viz.* in East Borneo.

Barathranthus axanthus (Korth.) Miq. ♀—Richards 1955, Mt. Dulit (Ulu Tinjar, near Long Kapa), 700—900 m alt., 19 IX 1932, rain forest on steep slope, liane on large tree; flowers white, tinged with pale green below. — Widely spread in the western part of the Malay Archipelago, including the Malay Peninsula and Borneo. The above specimen is a female one of a narrow-leaved form, with leaves ovate-lanceolate.

Trithecanthera superba Danser, n.sp. — *Omnis glabra, valde robusta. Ramuli teretes, internodiis foliiferis 6—12.5 cm longis, 4—7 mm crassis, nodis ad duplam latitudinem dilatatis postea incrassatis. Folia opposita, sessilia, oblonga, 14—20 cm longa, 6.5—10.5 cm lata, sub basi rotundata nonnihil cordata, apice rotundata vel obtusissima, crassiuscula, fragilissima, faciebus paulum diversis, utrinque opaca, nervatura pennata, costa subtus prominente supra subplana distincta, nervis lateralibus supra visibilibus, nervis ceteris omnibus invisibilibus. Inflorescentiae ignota insertione, racemosae, axi deorsum directo, floribus ab ima basi pedicellorum sursum directis; axis subteres, in 3—4 cm basalibus nudus 4—5 mm crassus, parte florifera paulo crassiore, insertionibus florum paulum incrassatis, ceterum sulcata; pedicelli reflexi, in floribus inferioribus ad 3 mm longi 2 mm crassi, in floribus superioribus c. 1—1.5 mm longi et crassi; bractae triangulae, basi semiamplexicaules, apice acutae, 2—3 mm longae, crassiusculae. Calyx cylindricus, 6—7 mm longus, 3—3.5 mm latus, tubo 5—6 mm limbo 1 mm longo integro. Corolla statu alabastri adulti*

90—95 mm longa, a basi c. 3 mm lata in parte tertia inferiore subcylindrica, deinde in tertia parte media sensim dilatata, dein subcylindrica c. 6 mm lata usque ad 20—25 mm ab apice, ibi tuberculis vel aculeolis 6 cum laciniis alternantibus, deinde pauca mm cylindrica, c. 16 mm ab apice dilatatione annulari, denique subabrupte attenuata in partem apicalem subcylindricam paulum conicam 3—2 mm crassam obtusissimam, postea parte superiore curva longa ab axi deflexa, divisa usque ad tubercula in lacinias 6, fissura singula (terram versus) multo profundiore, plus quam dimidiam tubi longitudinem attingente, stylo dependenti transitum dante, laciniis sublinearibus obtusis c. 16 mm ab apice undula permanente. Stamina 6, recta, usque ad laciniarum undulas corollae adnata; filamentum pars libera 5 mm longa, supra insertionem incrassatione dorsali in undula lacinae quadrante; anthera 10 mm longa, obtusa, loculis 4. Stylus a basi ad apicem vix incrassatus, a basi sua ad basin antherarum angulis 6, parte superiore angulis 12; stigma subglobosum, obtusissimum, styli apice c. duplo crassius. (Inflorescentia fructifera a florifera paulum diversa, praesertim insertionibus pedicellorum fructiferorum magis incrassatis, et pedicellis ad 4 mm longis crassisque. Fructus ellipsoideus, basi apiceque rotundatus, ad 23 mm longus 15 mm diametro, exocarpio coriaceo, mesocarpio viscoso.) — Richards 1652, Mt. Dulit ridge, c. 1230 m alt., 9 IX 1932, in „transition” forest, parasite on branches of tree c. 20 m high; flowers scarlet, vernacular name *banalu*. Cfr. fig. 1a—b.

These materials allow me to determine a flowerless but fruitbearing specimen indeterminable up to the present, and so I am able to complete the description of the species with that of the fruit. This specimen is: Clemens 31304, Mt. Kinabalu, Penibukan, 4000 ft alt., ridge west of camp, heavy vine on limb fallen from great tree.

Trithecanthera superba has not, like *Tr. xyphostachys* Van Tieghem and *Tr. Scortechinii* (King) Danser,

verticillate leaves. This character must, therefore, be cancelled from those of the genus *Trithecanthera*.

Scurrula ferruginea (Jack) Danser — Richards 2323, Mt. Dulit (Ulu Tinjar, near Long Kapa), under 300 m alt., 24 X 1932, woody climber on tree, secondary forest on river bank. — This species is widely spread in south-eastern Asia and the western and northern parts of the Malay Archipelago, but in the Philippines only in Palawan. The above specimen is not very typical, having rather small leaves and a short indumentum.

Notothixos sulphureus Merr. — Richards 1065, Mt. Dulit, ridge, c. 1230 m alt., 1 VIII 1932, on small tree, leaves golden yellow, inflorescence golden brown. — Richards 1238, Mt. Dulit, ridge, c. 4000 ft, moss-forest, 13 VIII 1932; young leaves bright golden yellow. — The genus is new for Borneo; the species had been collected at few localities in Mindanao only. The Borneo specimens look, at first sight, very different from the Philippine ones, by their coarser and much more thickly coriaceous leaves, and dark-golden yellow tomentum, but I could not discover more important differences.
