

# OPISTHIOLEPIS, A NEW GENUS OF PROTEACEAE FROM QUEENSLAND.

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(With Plate IV.)

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## SUMMARY.

A new genus of the Proteaceae is described and a new transfer made.

The high degree of endemism in the rain-forest flora of north-eastern Queensland, despite the predominance of Malaysian genera, has already been remarked upon by the late C. T. White (1930, p. 234). One peculiar feature of this flora is that up to the present six monotypic genera of Proteaceae have been recorded, namely, *Austromuelleria*, *Buckinghamia*, *Cardwellia*, *Carnarvonia*, *Musgravea*, and *Placospermum*. To these must now be added *Hollandaea* and *Opisthiolepis*. C. T. White, in manuscript, proposed the following transfer—

***Helicia lamingtoniana*** (F. M. Bail.) C. T. White comb. nov.

*Hollandaea Lamingtoniana* F. M. Bail. in Queensl. Agric. Journ. 5 : 390 (1899).

The only accepted species of *Hollandaea* is now *H. sayeri* F. Muell. *Opisthiolepis*, described below, raises the number of genera, with Queensland representatives, in the tribe Embothrieae to seven.

**Opisthiolepis** L. S. Smith : genus novum in tribu *Embothriearum* ponendum ; inter genera hujus tribus squama hypogyna solitaria bidentata distinctum.

*Flores* hermaphroditi, parvi, incurvati, parum irregulares. *Perianthii* segmenta 4, inaequilonga, primum a latere abaxiali disjuncta, mox delapsa ; tubus obliquus,  $\pm$  4-angulatus, superne vix angustior ; limbus primum subglobosus, laminis concavis. *Stamina* 4, ad basin laminarum affixa ; filamenta complanata, lata, brevia, apicem versus in connectivum latum expansa ; antherae late ovatae. *Squama hypogyna* 1, adaxialis, oblonga, apice bidentata. *Ovarium* breviter stipitatum, 1-loculare ; ovula ca. 10-12, biseriatim imbricata, oblique disposita, medio vel supra medium lateraliter affixa. *Stylus* compressus, apice versus leviter constrictus deinde in discum oblique dilatatus, demum decurvatus ; stigma parvum, in medio disco. *Folliculus* (pauci delapsi solum visi) recurvus, breviter stipitatus, demum expansus, sublignosus, subplanus, apice leviter recurvus, bilobatus. *Semina* ignota.—*Arbor*. Folia alterna, in ramis fertilibus integra, sterilibus plerumque simplicia pinnataque interdum sparse dentata. Racemi axillares, tenues, spiciformes. Flores parvi, brevissime pedicellati, per paria bractea parva caduca suffulti.

Species 1, Australiae septentrionali-orientalis incola.

**O. heterophylla** L. S. Smith, species nova. Plate IV.

*Arbor* mediocris vel alta (usque ad 30 m. sec. Hanson). *Ramuli* juniores appresse ferrugineo-tomentosi, leviter angulati vel rotundati, vetustiores lenticellis parvis pustulatis dense notati. *Folia* dimorpha, simplicia vel



pinnata; foliorum simplicium lamina coriacea, ovata vel oblongo-elliptica (4-) 7-15.5 (-30) cm. longa, (1.6-) 2.6-7 (-10.5) cm. lata, apice obtusa vel breviter acuminata, mucronulata, basi angustata, supra appresse pubescens, mox glabrata, subtus indumento minuto denso appresso nitente ferrugineo vel demum  $\pm$  argenteo vestita, margine integra vel interdum sparse dentata, nervo medio subtus valde prominente, nervis lateralibus prominulis ca. 10-18 utroque latere; petiolus primum appresse tomentosus, ca. 1.2-3 (-5) cm. longus, supra canaliculatus, subtus rotundatus, basi incrassatus; foliorum pinnatorum 28-50 cm. longorum pinnae 5-18, quoad indumentum nervatioque foliis simplicibus similes, lanceolatae vel oblongo-lanceolatae (4.4-) 7.6-16.4 cm. longae, 1.9-3.8 cm. latae (vel harum terminalis interdum major), apice acutae vel acuminatae, mucronulatae, basi inaequilaterales, margine integrae vel sparse dentatae, petiolulatae petiolulo usque ad 8 mm. longo decurrente vel interdum superiores sessiles; petiolus 4.4-7.6 cm. longus, cum rhachi supra canaliculatus subtus rotundatus. *Racemi* axillares, spiciformes, laxiflori, simplices, solitarii vel interdum geminati, ferrugineo-tomentosi, 3-9 cm. longi; bracteae extus tomentosae, intus glabrae, ca. 0.9 mm. longae, emarginatae vel obtusae, caducae. *Flores* glabri, ca. 2.5-3.2 mm. longi, brevissime pedicellati pedicellis 0.25-0.6 mm. longis per paria bractea  $\pm$  abditis; perianthii limbus subglobosus, ca. 1 mm. longus, tubus limbo angustior, segmenta inaequilonga horum lateralia falcata ca. 3 mm. longa, abaxiale ca. 5 mm. longum, adaxiale ca. 1.7 mm. longum; stamina parva, filamentis 0.1-0.3 mm. longis, antheris ca. 0.5 mm. longis, 0.5-0.6 mm. latis; squama hypogyna oblonga, 0.8 mm. longa, 0.5 mm. lata, basi crassior, apice bidentata; ovarium compressum, ca. 1 mm. longum, 10-12-ovulatum, stipite ca. 0.3 mm. longo praeditum; stylus ca. 2 mm. longus. *Folliculus* (post dehiscentiam) breviter stipitatus stipite ca. 6 mm. longo,  $\pm$  applanatus, 5-6 cm. longus, medio 3-4 cm. latus, 1.5-2.0 mm. crassus.

QUEENSLAND. Cook District: Atherton, *C. T. White* (sterile), January 1918 (Local name "Silver Oak"); Atherton, *A. G. Hanson* 21/1 (TYPE—flowers), February 1950 (Specimen from a small rain-forest tree, which attains 100-110 ft. in height and 90 ins. g.b.h.; pinnate leaves absent on fertile branchlets); Malanda, *C. T. White* (sterile), January 1918 (Local name "Silver Oak"); Millaa Millaa, *J. King* 10 (sterile), March 1951; Paronella Park, Mena Creek, ca. 14 miles S. of Innisfail, alt. ca. 50 ft., *L. S. Smith* PP. 41 (old fruits) 4 August 1948 (A small slender tree ca. 20 ft. high near the creek bank; leaves often both pinnate and simple on the one branchlet, shiny brown or occasionally silvery beneath). North Kennedy District: Koolmoon Creek, ca. 11 miles SSE. of Ravenshoe, in rain-forest, alt. 2,400 ft., *L. S. Smith & L. J. Webb* 4583 (sterile), 29 September 1950 (A tree 70 ft. high, bole  $1\frac{1}{4}$  ft. d.b.h., slightly channelled at the base. Bark  $3/16\text{--}\frac{1}{4}$  in. thick; outer—light brown, marked by fine, broken, slightly reticulating, longitudinal lines of lenticels; inner—dark red on the outside, pinkish brown within with numerous fine, pale cream-coloured radial lines, when blazed showing a very pale cream or faintly purplish tinged honeycomb-like network, with brownish flecks, sometimes surrounded by pink, in the centre of the cells. Sapwood  $1\frac{1}{2}$  ins. thick, cream for  $\frac{1}{2}$  in., then pale pink for about 1 in.; heartwood light pinkish brown); Kirrama Range, west of Kennedy, in rain-forest between Society Flat and Yuccabine Creek, alt. ca. 1950 ft., *L. S. Smith & L. J. Webb* 3200 (sterile), 1 August 1947 (A small tree 45 ft. high, trunk 7 ins. diam. Outer bark brownish, marked by short, irregular, longitudinal, lenticellate lines with scattered, short, horizontal cracks between them, here and there with coarse red-brown



pustules; inner bark  $\frac{1}{8}$  in. thick, dark red on the outside, reddish brown within. Wood cream for  $\frac{1}{2}$  in., becoming darker pink inwards. Leaves simple or pinnate, brownish or greyish beneath).

The genus resembles *Lomatia* in general structure, but is readily distinguished by the occurrence of a single hypogynous scale in the flower instead of three glands. Further, the dehiscent follicles of the Queensland species of *Lomatia* are almost flat or very shallowly boat-shaped, often more or less beaked and not recurved at the apex, much thinner and of a less woody texture. Other differences may be apparent when the seeds of *Opisthiolepis* are known, although the ovules are very similar to those of *Lomatia*.

*Opisthiolepis heterophylla*, especially when young, is quite a showy tree and worthy of cultivation. The foliage comprises mixed leaf-types, is a bright green above and shiny brown or silvery beneath. The indumentum of the leaf-undersurface is somewhat similar to that of *Grevillea pinnatifida* F. M. Bail. or occasionally *G. hilliana* F. Muell. The juvenile or intermediate leaves, whether simple or pinnate, occasionally bear a few small teeth which, however, appear to be absent from the simple leaves on fertile branchlets.

I have seen trees in rain-forests from near Cardwell in the south to Mossman in the north and growing at altitudes of from approximately 50 ft. to 2,500 ft., though nowhere of very large dimensions. However, Mr. A. G. Hanson, Forester, Atherton, states that they grow to a height of 100 ft., the bole attaining  $2\frac{1}{2}$  ft. in diameter, and therefore of commercial size.

The small, inconspicuous, almost sessile flowers may account for flowering specimens not having been collected in the past, and I am much indebted to Mr. Hanson for diligently searching for and collecting the only flowering specimens so far obtained.

[*L. S. Smith & L. J. Webb* 4853, since collected from Lacey's Creek, Mission Beach area, shows in addition that the flowers are white and that the lower racemes are pendulous, attain 15 cm. in length, and are sometimes branched. Old fruits similar to those described were obtained from the ground beneath the tree.]

The generic name is derived from the two Greek words *ὀπίσθιος*, hinder, and *λεπίς*, a scale, and refers to the adaxial, solitary, hypogynous scale in the flower.

#### REFERENCE.

WHITE, C. T., 1930. A new genus of Proteaceae from North Queensland. *Kew Bull.* 1930, No. 6: 234-5.

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*Opisthiolepis heterophylla* L. S. Smith. 1, portion of flowering branchlet  $\times \frac{2}{3}$ ; 2a and 2b, two types of compound leaf  $\times \frac{1}{6}$ ; 3, flower-bud  $\times 10$ ; 4, flower  $\times 10$ ; 5, pistil and hypogynous scale after perianth-segments have fallen  $\times 10$ ; 6, hypogynous scale  $\times 10$ ; 7, apex of style with stigma  $\times 10$ ; 8, longitudinal section of ovary  $\times 10$ ; 9, two ovules after fertilisation  $\times 16$ ; 10, tip of lateral perianth segment showing position of stamen  $\times 10$ ; 11, back view of anther from abaxial perianth segment  $\times 10$ ; 12, tip of adaxial perianth segment  $\times 10$ ; 13, side view of dehiscent follicle  $\times 1$ ; 14, back view of dehiscent follicle  $\times 1$ .



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