NOTES ON SOME TASMANIAN MESOZOIC PLANTS.

Part I.

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(With 18 Figures.)

(Read 10th November, 1924.)

Through the kindness of Messrs. Clive Lord and P. B. Nye I have been enabled to examine collections of Mesozoic Fossil Plants from the Tasmanian and Launceston Museums and the Geological Survey of Tasmania. This has given me the opportunity of checking the determinations of some of these fossils made by the late R. M. Johnston some thirty to forty years ago. Unfortunately, a large proportion of the specimens had lost their locality labels, but it is probable that one acquainted with the rocks in which these fossils occur in Tasmania could, with reasonable certainty, determine the localities from which the majority of the specimens came.

The notes in this paper are not quite complete, but as many of the specimens were from the exhibition collections of the Tasmanian Museum, it was desirable that I should not keep them very long. In order not to delay publication of the results of my examination I have thought it advisable to present the following notes now, and hope, during next year, to be able to supplement this paper with another short one, which should contain a few additional observations, together with some analysis of the Tasmanian Mesozoic floras, and comparison with the Mesozoic floras of the mainland and other areas.

At this stage I would like to take the opportunity of paying a tribute to the work of the late R. M. Johnston on the fossil plants of Tasmania. It is not always easy at the present day to appreciate the difficulties under which work of this kind was done thirty years or more ago. Although many alterations in the names used by Johnston are suggested below, it should be pointed out that a very great amount of work has been done on Fossil Plants during the past twenty years, and that, in many cases, the suggested changes are only necessary to bring Johnston's work into line with our present improved knowledge of the whole subject.

I have to express my gratitude to both Mr. Lord and Mr. Nye for the opportunity given me of studying the collections, and to express the hope that the results may be a contribution to the study of the Tasmanian fossil flora, which will, in some measure, repay them for the trouble they have taken.

The figures are natural size, except where it is stated otherwise.

Neocalamites Carrerei, Zeiller.

Among specimens from the Launceston Museum there are some examples of Equisetaceous stems with numerous long narrow leaves at the nodes. These may belong to *Neocalamites Carrerei*, a species not uncommon in rocks of Lower Mesozoic Age in Eastern Australia, and already figured from Queensland (Walkom, 1915, Pl. 1). Specimen B 875 may also belong to this species.

Phyllotheca australis, Brongn.

The late R. M. Johnston (1885, p. 365; 1888, Pl. 22) recorded the three species, *Phyllotheca australis*, *P. ramosa*, McCoy, and *P. Hookeri*, McCoy, from the Mesozoic Coal Measures at a number of localities. There does not appear to be anything in the descriptions of these three species by which they can be separated from one another, and it is probable that only a single species is represented—a conclusion already suggested by some authors.

In the figure of *P. Hookeri* (Johnston, 1888, Pl. 22, f. 16) showing the leaf-sheaths, it appears as if the full length of the leaves may not be shown, and the general appearance of the figure suggests that the specimen may he a *Neocalamites*.

Cladophlebis australis (Morris).

Alethopteris australis, Johnston, Pap. Proc. Roy. Soc. Tas. 1885 (1886), 374.

? Neuropteris antipoda, Johnston, *ibid.*, 1886 (1887), 172, Pl. 3, f. 4.

Alethopteris serratifolia, Johnston, *ibid.*, 1886 (1887) 172, Pl. 2, f. 1.

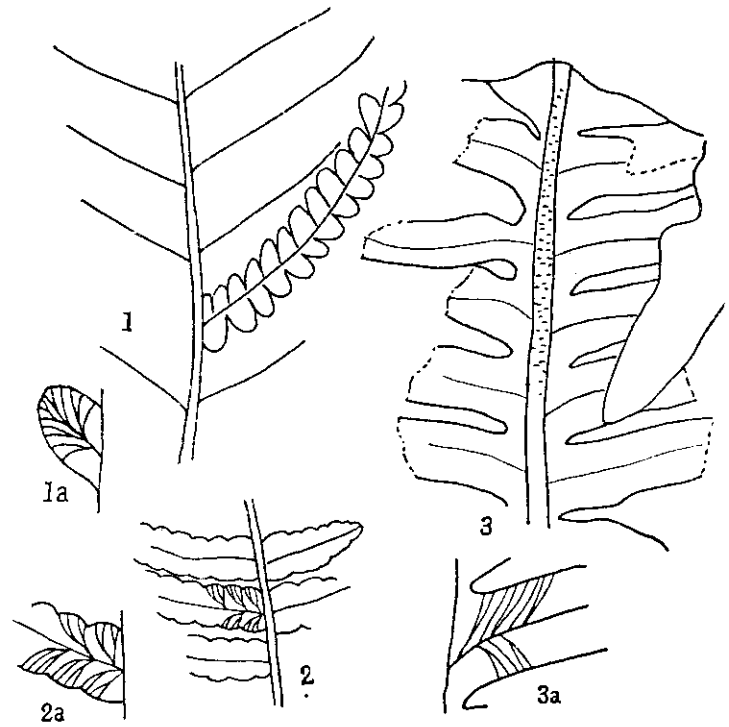
This very common species seems to be present in almost every collection of Lower Mesozoic plants in Australia. The Tasmanian examples, as a whole, have rather small pinnules with margins usually entire, but occasionally denticulate.

The specimen figured hy Johnston as *Neuropteris antipoda* is probably an imperfectly preserved example of this species.

Alethopteris serratifolia was regarded by Johnston as distinct from *A. australis* by "its more robust appearance "and its crisp or sinuous dentate pinnulæ," but I am unable to distinguish it from the common species, which shows considerable variation.

Cladophlebis tasmanica (Johnston). (Fig. 1.)

Sphenopteris tasmanica, Johnston, Pap. Proc. Roy. Soc. Tas., 1895 (1896), 60, f. 10-13.



Figs. 1, 1a.—*Cladophlebis tasmanica* (Johnston). 1a, single pinnule enlarged (X 3).

Figs. 2, 2a.—*Cladophlebis Johnstoni*, n.sp. 2a, part of single pinnule enlarged (X 2).

Figs. 3, 3a.—*? Phlebopteris alethopteroides*, Eth. Jr. 3a, part enlarged showing venation (X 1.6.).

Frond bipinnate. Pinnæ opposite, or almost so, close, linear. Pinnules small, ovate, attached by whole base, margins entire; each pinnule is traversed by a single median vein with a few secondary veins, branching once or twice, and at an acute angle to the mid-vein.

This species, placed by Johnston in *Sphenopteris*, differs widely from that genus in the form of the pinnules, their mode of attachment and venation, and appears to agree better with *Cladophlebis*. The pinnæ are up to 8 mm. wide, and 5 cm. long.

Specimen B 1029, in which the venation does not show, may possibly belong to this species.

Cladophlebis Johnstoni, n.sp. (Fig. 2.)

Frond bipinnate, large. Pinnules subfalcate, opposite or alternate, attached by whole base; margins lobed to a varying extent—in the upper part of the pinnæ some of the pinnules have an almost entire margin. Venation alethopteroid. Pinnules in general 1.5-2 cm. long by 5 mm. broad, with a prominent midrib and secondary veins which branch once, twice, or occasionally thrice.

This is a species quite distinct from any that I have met in the Australian Mesozoic floras. The specimens are all of sterile fronds, and in general appearance are not unlike such species as *Coniopteris arguta* (L. & H.) figured by Seward (1900, Pl. 17, f. 4, 5) from the Jurassic of England.

Locality.—Three miles north of Bagdad.

? Phlebopteris alethopteroides, Eth. Jr. (Fig. 3.)

A single specimen, showing part of a broad pinna, with elongate strap-shaped pinnules, having a prominent midrib and simple or branching secondary veins at a moderately wide angle to the midrib, and about .5 mm. apart, approaches most closely to the above species. The species has been recorded and figured from the Walloon Series (Jurassic) in Queensland (see Walkom, 1917, p. 8).

THINNFELDIA.

The Tasmanian specimens conform remarkably well to the limits for the species already suggested in the case of collections from Queensland and New South Wales (Walkom, 1917, p. 12; 1921, p. 8). While it is admitted that the separation of the species is, to some extent, artificial, and that all are possibly examples of one very variable species, it has the advantage that the species described are very easily determinable. I might repeat here that all have a dichotomous rachis; the only bipinnate form (*T. Feistmantelli*) has rounded ovate pinnules without a midrib; of the simple dichotomous fronds, *odontopteroides* has rounded or ovate pinnules without a midrib, and *lancifolia* has elongate pinnules with a distinct midrib. For further discussion reference may be made to the papers quoted above.

Thinnfeldia Feistmantelli, Johnston. (Fig. 4.)

Thinnfeldia obtusifolia (pars), Johnston, Geol. Tas., 1888, Pl. 25, f. 3, 9 (*not* figs. 7, 14.)

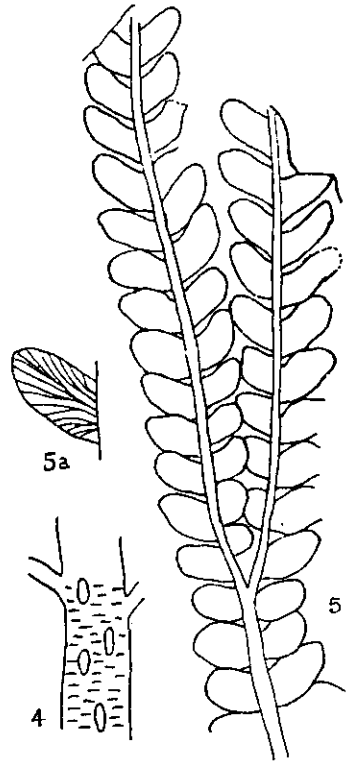


Fig. 4.—Part of rachis of *Thinnfeldia Feistmantelli* showing usual transverse scars, and 4 vertically elongated scars (X 1.3).

Figs. 5, 5a.—*Thinnfeldia odontopteroides* (Morris). 5a, single pinnule enlarged (X 1.3).

Thinnfeldia Feistmantelli, Johnston, Pap. Proc. Roy. Soc. Tas., 1895 (1896), fig. 2.

? Thinnfeldia polymorpha, Johnston, *ibid.*, p. 62, fig. 16.

(For fuller synonymy see Walkom, 1917, p. 17.)

The Tasmanian collections contain typical examples showing the bipinnate frond with dichotomous rachis and short obtuse pinnules with characteristic venation.

In some cases the rachis shows the transverse markings to which attention has been drawn previously (Walkom, 1917, p. 19), and, in addition, a number of vertically elongate scars (Fig. 4) up to 2 mm. by 1 mm.

Johnston himself called attention to the very close similarity between *T. polymorpha* and *T. obtusifolia*, and there is little doubt about this synonymy. He also inclined to refer some of the specimens he had previously named *Pecopteris caudata* (Geol. Tas., Pl. 26, f. 2, 6, 20) to *Thinnfeldia polymorpha*.

Thinnfeldia odontopteroides (Morris). (Fig. 5)

Thinnfeldia obtusifolia (pars), Johnston, Geol. Tas., 1888, Pl. 25, f. 7, 14 (*not* f. 3, 9).

(For fuller synonymy see Walkom, 1917, p. 19.)

This species appears to be particularly common in Tasmania. It shows considerable variation in size, the pinnules ranging from 4 to 10 mm. in length. A typical example is shown in Fig. 5.

On some of the specimens from Lord's Hill there is a secondary structure, possibly a mineral deposition, on parts of the pinnules and rachis. This structure gives to the specimen an appearance as of a reticulate venation, and is apparently responsible for specimen B 929 being labelled *Sphenozamites*.

Thinnfeldia lancifolia (Morris).

? Neuropteris tasmaniensis, Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), 171, Pl. 2, f. 2; Geol. Tas., 1888, Pl. 23, f. 2.

Pecopteris (*Thinnfeldia*) *odontopteroides* (pars), Johnston, Geol. Tas., 1888, Pl. 25, f. 1, 2, 4.

Thinnfeldia superba, Johnston, *ibid.*, Pl. 26, f. 4, 5.

? Pecopteris odontopteroides, Johnston, Pap. Proc. Roy. Soc. Tas., 1893 (1894), 173, Pl. 2, f. 1-5.

? Thinnfeldia Buftoni, Johnston, *ibid.*, 1895 (1896), 61, f. 18.

? Neuropteris tasmaniensis, Johnston, *ibid.*, 1895 (1896), f. 1.

(For fuller synonymy and description, see Walkom, 1917, p. 21.)

This species is easily distinguished from the other Thinnfeldias by the elongate pinnules, with a distinct midrib. It is of common occurrence in Tasmania.

The specimens figured by Johnston as *Neuropteris tasmaniensis* appear to belong to the present species.

JOHNSTONIA, n. gen.

This name is proposed for a group of peculiar fronds from the Mesozoic rocks of Tasmania. They are distinct in having a simple frond with dichotomously branched rachis; they are similar in this respect to species of *Thinnfeldia*. In *Johnstonia*, however, the lamina is continuous, with the margin entire or lobed to a varying extent, and the venation is distinct from that of *Thinnfeldia*. The name is proposed in honour of the late R. M. Johnston, who did so much of the pioneering work in science for Tasmania.

Frond simple, rachis dichotomously branched. Lamina with margin entire or lobed to varying degree. Veins at very acute angle to rachis, branching once or twice, occasionally more than twice.

Johnstonia coriacea (Johnston). (Figs. 6-8.)

Rhacophyllum coriaceum, Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), 170; Geol. Tas., 1888, Pl. 26, f. 9.

? Pecopteris caudata, Geol. Tas., 1888, Pl. 26, figs. 2, 8 only.

? Strzeleckia tenuifolia, Johnston, Pap. Proc. Roy. Soc. Tas., 1895 (1896), 58, fig. 8.

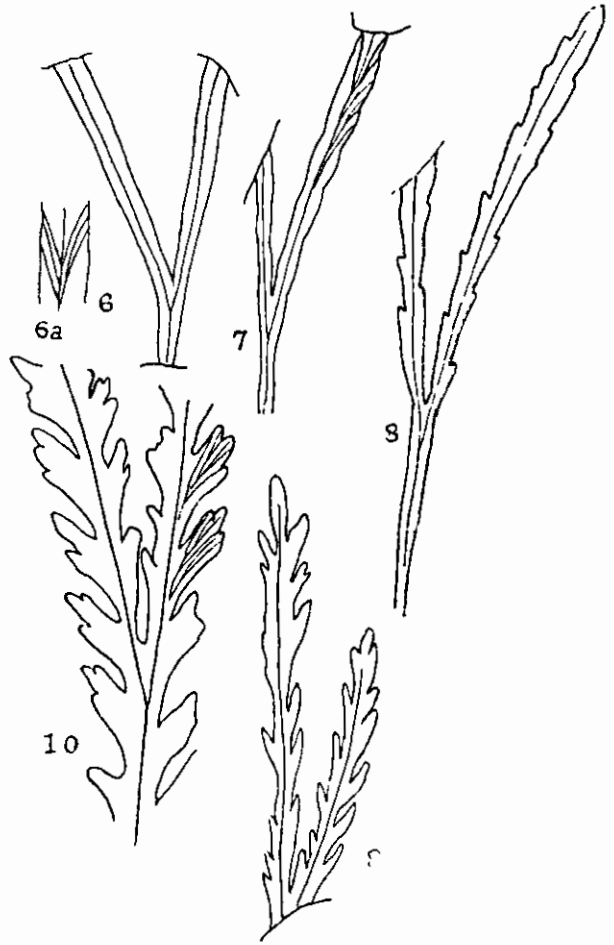
Frond dichotomously branched, the branches linear elongate, strap-shaped, with a prominent midvein and secondary veins, which divide usually once, and make a very acute angle with the midvein. Margins entire or slightly lobed.

Specimens attain a length up to 10 cm. above the point of dichotomy, and the breadth in larger specimens is 1 cm., though in general they are narrower than this.

This is the plant described and figured by Johnston under the name *Rhaeophyllum coriaceum*, though it cannot be regarded as belonging to that genus as used by other authors.

Under the name *Strzeleckia tenuifolia*, Johnston figured a specimen which does not agree with his definition of the

genus, and which appears from his figure to be an incomplete example of the species he had described as *Rhacophyllum coriaceum*.



Figs. 6-8.—*Johnstonia coriacea* (Johnston). 6a, small portion enlarged to show venation. 6, 7 (X .6), 6a (X 1.3), 8 (nat. size).

Fig. 9.—*Johnstonia dentata*, n.sp.

Fig. 10.—*Johnstonia trilobita* (Johnston), slightly enlarged.

Two of the examples figured by Johnston as *Pecopteris caudata* (Geol. Tas., Pl. 26, figs. 2, 8), probably belong to the present species, but it is also possible that one of them (fig. 8) may be a small example of *Thinnfeldia odontopteroides*.

Johnstonia dentata, n.sp. (Fig. 9.)

Similar in habit and venation of *J. coriacea*, but with the lamina divided into distinct more or less acutely pointed segments.

It is possible that this may represent only a variation of *J. coriacea*. For the present, as the two are quite distinct in appearance, it seems an advantage to give them separate names.

Johnstonia trilobita (Johnston). (Fig. 10.)

Thinnfeldia trilobita, Johnston, Pap. Proc. Roy. Soc. Tas., 1885 (1886), 372; Geol. Tas., 1888, Pl. 24, fig. 6; Pl. 26, fig. 12.

This species was described by Johnston from Spring Bay as a *Thinnfeldia*, but it seems more closely allied to those specimens which have been here referred to *Johnstonia*. The frond is dichotomous, the branched rachis bearing pinnules attached by the whole of their decurrent bases. The pinnules at their termination are characterised by having three lobes. The venation appears to consist of a small number of veins arising from the branching of one (or ? two) veins leaving the rachis at an acute angle.

Linguifolium diemenense, n.sp. (Fig 11.)

? *Pecopteris caudata*, Johnston, Geol. Tas., 1888, Pl. 26, fig. 1 only.

? *Strzeleckia gangamopteroides*, Johnston, Pap. Proc. Roy. Soc. Tas., 1895 (1896), 58, figs. 5-7.

Thinnfeldia saligna, Feistmantel, Uhlonosné Utvary v Tas., 1890, 97, Pl. viii, f. 13.

Examples of simple leaves, gradually narrowing towards base, with entire margins, strong midrib and secondary veins at an acute angle to the midrib, curving outward and bifurcating once or twice, may be referred to Arber's genus *Linguifolium*, described from Rhætic and Jurassic rocks in New Zealand. These specimens differ from the Queensland species of *Phyllopteris* in the shape of the leaves and in the nature of the secondary venation. In proposing the genus *Linguifolium*, Arber suggested that all the Australian *Phyl-*

lonteris should be transferred to his genus, but it seemed to me that the Queensland species could better be retained in *Phyllopteris* (Walkom, 1919, p. 21). The present Tasmanian examples, however, appear to agree very well with Arber's description.

The secondary veins are wider apart, and have not such a pronounced outward curve as in the Queensland examples; the apex is acuminate, and the secondary veins are about 1 mm. apart.

It seems possible that some of these leaves are identical with those described by Johnston as *Strzeleckia gangamopteroides*, but in view of his description it is not possible to determine this positively. His description ran "no mid-"rib; nerves numerous, distinct, ascending from base, and "from the crowded midrib-like central series, at a very acute "angle to the margin, but never *anastomosing*." Whether his "crowded midrib-like central series" was really a midrib or not we cannot say, as unfortunately there is no record of the exact specimens from which his sketches were drawn.

One specimen figured by Johnston (Geol. Tas., Pl. 26, fig. 1), as *Pecopteris caudata* would also appear to be a synonym of the present species. Feistmantel (1890) referred this same specimen to *Thinnfeldia saligna*, Schenk.

Sphenopteris Morrisiana, Johnston.

Pap. Proc. Roy. Soc. Tas., 1895 (1896), 58, f. 14, 15.

Of this species I have seen only small fragments, but apparently the late R. M. Johnston had some large fronds, which he described in detail, believing that a number of the species previously described had been based on fragments from different parts of large fronds.

Pecopteris lunensis, Johnston.

Pap. Proc. Roy. Soc. Tas., 1893 (1894), 170, Pl. 1, figs. 5, 6, 7.

This species was described by Johnston from Ida Bay, near Southport, associated with *Vertebraria australis*. The latter species should be easily identified, and, if Johnston's determination is correct, *Pecopteris lunensis* is of Permian age.

Tæniopteris Morrisiana, Johnston. (Fig. 12.)

Pap. Proc. Roy. Soc. Tas., 1885 (1886), 375.

This species was described (but not figured) by Johnston from near Longford, associated with *Phœnicopsis elongatus* and *Cladophlebis australis*. The specimen figured here agrees with the description, being about 1.3 cm. wide, and having the veins about 1 mm. apart, and branching occasionally.

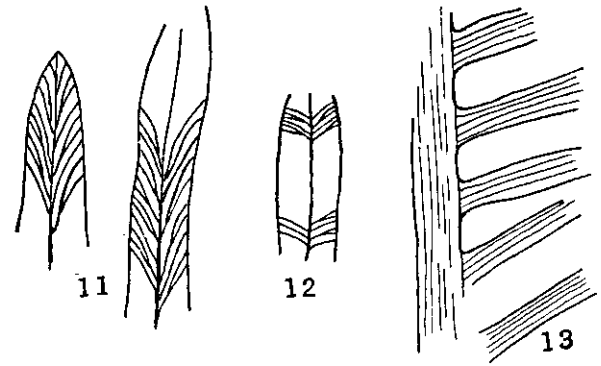


Fig. 11.—*Linguifolium diemenense*, n.sp.
Fig. 12.—*Tæniopteris Morrisiana*, Johnston (X .6).
Fig. 13.—*Pseudoctenis* sp.

Pterophyllum Strahani, Johnston.

Pap. Proc. Roy. Soc. Tas., 1886 (1887), 175, Pl. 1, f. 1, 1a; Geol. Tas., 1888, Pl. 28, f. 1, 1a.

Anomozamites Strahani, Feistmantel, Uhlonosné Utvary v Tas., 1890, 108, Tab. x, f. 1, 2.

This is a larger species than any I have yet examined from Australia, and may be compared with some of the large Indian forms such as *Nilssonia princeps* (Oldham and Morris), in which the pinnæ are 1 to 3.5 cm. wide, and the veins 0.5 to 0.8 mm. apart, but in *Nilssonia* the veins do not divide frequently as in the Tasmanian specimen.

Feistmantel referred the species to *Anomozamites*, but with only one or two specimens available, it is not easy to be sure of the correct generic position.

Pterophyllum risdonensis, Johnston.

I am unable to say whether *P. risdonensis*, described by Johnston (Pap. Proc. Roy. Soc. Tas., 1886 (1887), 175), is really distinct from *P. Strahani*. Johnston considered it so,

but the only distinction in his description is that *P. risdonensis* has the veins strong, not dichotomous, and only six in a pinna whereas in *P. Strahani* they are fine, dichotomous, and 8-16 in a pinna. The non-dichotomous veins of *P. risdonensis* suggest the possibility of it being a *Nilssonia*.

Pterophyllum ? dubia, Johnston.

Pap. Proc. Roy. Soc. Tas., 1886 (1887), 176, Pl. 3, f. 6; Geol. Tas., 1888, Pl. 27, f. 3.

Nilssonia polymorpha, Feistmantel, Uhloncsné Utvary v Tas., 1890, p. 107, Pl. ix, fig. 2.

It appears to me that Johnston's alternative suggestion, that this might be portion of a large *Tæniopteris*, was more correct than the placing of it in the genus *Pterophyllum*. Arber (1917, p. 36) has suggested that this fragment might belong to his genus *Linguifolium*, but I think Johnston's own alternative suggestion the more probable. It may be that it is portion of a frond of *Tæniopteris tasmanica*, which Johnston described (Pap. Proc. Roy. Soc. Tas., 1885 (1886), 375), but did not figure.

Feistmantel (1890) referred the fragment figured by Johnston to *Nilssonia polymorpha*, Schenk, but it is more probably a *Tæniopteris*.

? Pseudoctenis sp. (Fig. 13.)

One specimen (B 982) shows portion of a cycadean frond which in all probability belongs to *Pseudoctenis*. The rachis is 6 mm. wide, and is traversed by a number of longitudinal striations. The pinnæ are separate, at right angles to the rachis, or nearly so, about 3-5 mm. wide, and traversed each by about 4 parallel veins which occasionally bifurcate. In places, each vein has the appearance of being a double vein.

Ginkgoites digitata.

Cyclopteris australis, Johnston, Pap. Proc. Roy. Soc. Tas. 1886 (1887), 174, Pl. 3, f. 1; Geol. Tas., 1888, Pl. 27, f. 1.

The specimen described by Johnston shows a very close similarity to figured examples of *Ginkgoites digitata*, one of the common and widespread Jurassic species of the genus (Seward, 1919, p. 20, fig. 638; Walkom, 1917a, Pl. 1, fig. 3).

Feistmantel (1890, 112) transferred this to *Gingko* (*sic*) *australis*.

Ginkgoites salisburioides (Johnston).

Sagenopteris salisburioides, Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), 170, Pl. 1, f. 4, 4a; Geol. Tas., 1888, Pl. 28, f. 4, 4a.

Amongst the collections submitted to me the only example of this species was the one figured by Johnston (*loc. cit.*, fig. 4a). In this example I think that the veins do not anastomose, the apparent anastomosis being produced by a distinct wrinkling, which is almost parallel to the general direction of the veins in one half of the leaf, and makes an acute angle with the veins in the other half. Hence instead of being a *Sagenopteris* the specimen should be referred to *Ginkgoites*. This is further borne out by the other figure of Johnston's (fig. 4), which is apparently a more complete specimen and which is obviously a *Ginkgoites*. Having only seen portion of one specimen, I am not prepared to say whether or no this species is synonymous with *G. digitata*, but can only call attention to its similarity to some of the specimens which have been referred to this species from the Jurassic of Yorkshire and Scotland (see Seward, 1919, p. 17, figs. i, j). Had the specimen (fig. 4a) been the only one, one would have suggested comparison with *G. crassipes* from India (Seward and Sahni, 1920, Pl. 7, f. 74), and also perhaps the resemblance to some leaves referred to *Psygmophyllum* or allied genus.

Baiera tenuifolia, Johnston. (Figs. 14-16.)

Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), 176, Pl. 3, f. 2 *a* - *e*; Geol. Tas., 1888, Pl. 27, f. 2 *a* - *e*.

This is a species of similar type to *B. Lindleyana* (Schimper).

The breadth of the leaves does not appear to be greater than 2 mm., and they branch dichotomously a number of times. It also shows resemblance to *Czekanowskia microphylla*, which is not easily distinguished from *B. Lindleyana* in many cases.

Closely associated with *B. tenuifolia* in some cases are small rosette-shaped masses, each made up of about 12 elongate bodies radiating from a centre. These are indistinguishable from *Stachyopitys annularioides*, Shirley (see Walkom, 1917a, p. 13, Pl. 4), described from Lower Mesozoic Rocks in Queensland. There seems every probability that the two forms are connected, though I am not convinced that

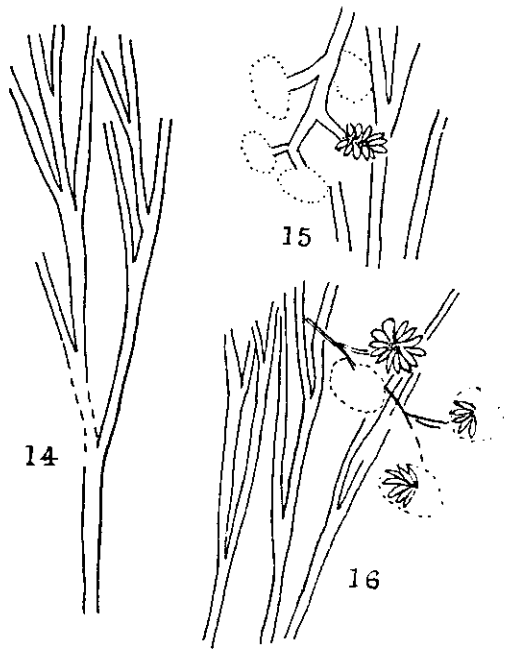


Fig. 14.—*Baiera tenuifolia* (Johnston).
Fig. 15.—*? Baiera tenuifolia.*
Fig. 16.—*? Baiera tenuifolia* (X 1.3).

there is actual connection in the specimens I have seen. I did not see any specimens similar to figs. 2b and 2c of Johnston.

Feistmantel (1890, 113) describes this as a new species, and refers it to *Trichopitys* (*T. Johnstoni*), but there does not seem to me to be sufficient evidence to justify this generic determination.

? Baiera bidens, Tenison-Woods.

Salisburia Hobartensis, Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), 177, Pl. 1, f. 2; Geol. Tas., 1888, Pl. 28, f. 2.

Gingko (*sic*) *Hobartensis,* Feistmantel, Uhlonosné Utvary v Tas., 1890, 112, Pl. x, fig. 6.

Johnston compares this with *Salisburia lepida,* Heer, and recognises that it is only a fragment of a leaf. He suggests that the complete leaf would probably have from 6 to 7 lobes like the one he figured. This prompts the tentative reference to *Baiera bidens.*

Ginkgophyllum australis, Johnston.

Pap. Proc. Roy. Soc. Tas., 1886 (1887), Pl. 3, f. 3; Geol. Tas., 1888, Pl. 27, f. 3.

I have not seen the specimens figured under this name, and am unable to suggest their affinities.

Phœnicopsis elongatus.

? Zeugophyllites elongatus, Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), 179.

Numerous long leaves, gradually tapering, 15 cm. long, 6 mm. broad, with 6-8 parallel veins, may be referred to this species. Somewhat wider examples, which may belong to the same species, are in the Launceston Museum: they are about 1.1 cm. wide, and have 12 parallel veins.

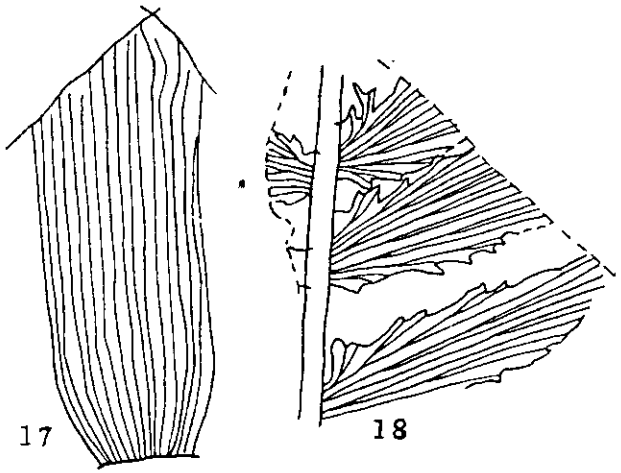


Fig. 17.—Cycadaceous leaf.
Fig. 18.—(*? Otozamites*) *Feistmantelii* (Johnston).

Cycadaceous leaf. (Fig. 17.)

The accompanying figure of a specimen (B 1045) from Lord's Hill is portion of an isolated cycadaceous leaf, figured here with the idea of calling attention to it in the hope that perhaps future collecting will bring to light more complete examples.

(*? Otozamites*) *Feistmantelii* (Johnston). (Fig. 18.)

Rhacopteris (*?*) *Feistmantelii*, Johnston, Pap. Proc. Roy. Soc. Tas., 1885 (1886), 368.

Sphenozamites Feistmantelli, Johnston, Pap. Proc. Roy. Soc. Tas., 1886 (1887), Pl. 4, f. 1, 2; Geol. Tas., 1888, Pl. 24, fig. 2.

This plant was described by Johnston in 1885 and ascribed by him to the genus *Rhacopteris*, though, at the same time, he called attention to a resemblance in venation to *Otozamites*. The next year he figured it, and referred it to *Sphenozamites* (*?*).

The venation is certainly similar to that of *Otozamites*, but the extremely irregular margins make it unlike any species I have met with, and I am unable satisfactorily to place it in any genus known to me.

Seeds (*?*).

On specimen B 979 there are a number of small round bodies, about 3 mm. in diameter, which are possibly the remains of seeds.

Lepidostrobus Mucllcri, Johnston.

Pap. Proc. Roy. Soc. Tas., 1883 (1884), 225.

This specimen of a cone has a length of 10.5 cm., and is preserved in a block of sandstone. It has been described by Johnston, but of course should not be referred to the genus *Lepidostrobus*, which is confined to rocks of Palæozoic age. I am unable to determine its characters sufficiently well to place it generically.

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