Revision of *Andrachne* sect. *Pseudophyllanthus* (Euphorbiaceae), with the description of two new species from Madagascar

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**KEY WORDS**

**ABSTRACT**
*Andrachne* sect. *Pseudophyllanthus* is revised and a detailed sectional description is given. The section comprises the well-known *A. ovalis* from Southern Africa as well as two new species from Madagascar which are here described and illustrated for the first time. The systematic position of the section is discussed and a provisional key to the presumed relatives of the group is given.

**MOTS CLÉS**

**RÉSUMÉ**
Révision de *Andrachne* sect. *Pseudophyllanthus* (Euphorbiaceae), avec la description de deux nouvelles espèces de Madagascar.
Révision et description détaillée de *Andrachne* sect. *Pseudophyllanthus* qui renferme *A. ovalis*, espèce sud-africaine bien connue, ainsi que deux nouvelles espèces de Madagascar décrites et illustrés ici. La position systématique de la section est discutée et une clé de détermination provisoire, incluant les taxons supposés affins, est proposée.

**INTRODUCTION**

*Andrachne* L. is a genus of Euphorbiaceae-Phyllanthoideae with a disjunct distribution in the subtropics and tropics of Asia, Africa and America. The circumscription of *Andrachne* is controversial to the present day. MüLLER ARGOVIENSIS (1866: 232-237) recognized six sections. When PAX & HOFFMANN (1922: 169-179) published the last taxonomic revision of the genus as a whole, they excluded the sections *Phyllanthopsis* (Scheele) Müll. Arg. and *Pseudo-phyllanthus* Müll. Arg. from *Andrachne* and transferred them to *Savia* Willd. *Andrachne* sect. *Phyllanthopsis* contains the two North American species *Andrachne phyllanthoides* (Nutt.) J.M. Coult. and *A. arida* (Warnock & M.C. Johnst.) G.L. Webster. Section *Pseudophyllanthus* so far only comprised *A. ovalis* (Sond.) Müll. Arg. from Southern Africa.

Pax & K. Hoffm., sect. Phyllanthidea (Didr.) Müll. Arg. and sect. Téléphioides (Moench) Endl. She accepted PAX & HOFFMANN’s view that sections Pseudophyllanthus and Phyllanthopsis are better placed in Savia.

WEBSTER (1994: 40) also recognized Leptopus as a separate genus, and placed it in a new mono-generic subtribe Leptopinae G.L. Webster. Andrachne s.str. remained as the only genus of subtribe Andrichninæ Müll. Arg. This further separation was mainly based on ovule orientation, which is anatropous in Leptopus and hemitropous in Andrachne s.str.

Andrachne sect. Phyllanthopsis and sect. Pseudophyllanthus cannot, however, be accommodated in Savia (HOFFMANN 1994). WEBSTER (1994) explicitly included sect. Phyllanthopsis in Leptopus but did not mention Andrachne ovalis or sect. Pseudophyllanthus, to which it belongs. This section combines characters of Andrachne s.str. and Leptopus, and is at present not satisfactorily placed (HOFFMANN 1994).

Two new species of this hitherto monotypic section are described here. More than A. ovalis from Southern Africa, these two Madagascan species resemble members of Meineckia in the subtribe Pseudolachnostylidinae Pax & K. Hoffm. A possible closer relationship between Andrachne and Meineckia has to my knowledge not yet been considered in the literature.

This paper is part of a systematic study of the Euphorbiaceae-Phyllanthoideae and a precursor for the revised Euphorbiaceae-Phyllanthoideae treatment for the “Flore de Madagascar et des Comores”.

**ANDRACHNE L. sect. PSEUDOPHYLLANTHUS** Müll. Arg.


**TYPE.** — Andrachne ovalis (Sond.) Müll. Arg.

Dioecious, more rarely monoecious shrubs or small trees 1-6 m, young branches terete or slightly flattened. Indumentum scarce, simple. Stipules persistent. Petiole canaliculate adaxially. Leaves alternate, petiolate, simple, symmetrical, entire, pinnately veined, eglandular, without domatia.

Inflorescences one- to few-flowered, axillary, borne directly in the leaf axils or on short, unbranched (rarely once-branched), leafless axes; pistillate and staminate flowers in separate leaf axils. Flowers pedicellate, 5-merous (rarely 4- or 6-merous). Pedicel articulate at the base. Sepals imbricate, free. Petals much shorter to nearly as long as sepals. Disc extrastaminal, annular, more or less antistaminally lobed; lobes apically more or less emarginated. Stamens antepetalous, filaments fused for about half their length, anthers basifix, latrorse in bud, longitudinally dehiscing, thecae parallel. Pistillode present. Styles bipartite to the base. Stigmas apically dilated. Ovules 2 per locule, anatropous (funicle attachment below micropyle), sharing one obturator.

Fruits capsular, depressed globose, dehiscence septicidal, loculicidal and septicfragal; dehiscence of septa in one straight line; exo- and mesocarp separate from the endocarp after dehiscence. Endocarp lignified. Columella persistent, 2.5-6 times longer than the narrowest width, acutely 3-angled, base and apex thickened; perianth, disc and stigmas persistent at fruit maturity. Seeds 2 per locule (rarely one), ecarunculate, roughly ovoid, nearly triangular in cross section, rugose (sculpture reminding of a brain), perichalazal annulus absent to small. Endosperm in mature seeds copious. Cotyledons thin, flat, oriented parallel to the pericarp; radicle terete, much longer than wide.

Three species in Southern Africa and Madagascar.

**NOTE.** — The breeding system is difficult to establish for the two species described here due to the small number of collections; however, all the specimens examined were either pistillate or staminate. In comparison, A. ovalis was found to be monoecious in a number of specimens and apparently dioecious in the remainder.
Key to the species of _Andrachne_ sect. _Pseudophyllanthus_

1. Leaves long acuminate, up to 8.5 × 7 cm; SE Madagascar ...................................................... _A. cerebroides_
1’. Leaves short acuminate to rounded, up to 6.5 × 3 cm ................................................................................ 2
2. Pistillate pedicels 15 mm, fruiting pedicels (15-) 20-50 mm long; pistillate sepals 3-4 × 2.5-4 mm; fruit 4 × 5-6 mm; styles 1-1.5 mm long; SW Madagascar ................................................................. _A. gracilipes_
2’. Pistillate pedicels 4-8 mm, fruiting pedicels 5-15 mm long; pistillate sepals 2 × 1 mm; fruit 5-6 × 8-10 mm; styles 0.5 mm long; South Africa, Swaziland and Zimbabwe .......................................................... _A. ovalis_

_Andrachne cerebroides_ Petra Hoffm., _sp. nov._

_Species_ _A. ovali_ similis sed foliis majoribus longe acuminatis petiolis pedicellis femineisque longioribus robustisque sepalis femineis majoribus differt.

_TYPUS._ — SF (Capuron) 23576, Madagascar, prov. Fianarantsoa, Est, au Sud de Farafangana (route de Manombo, aux P.K. 13-17), restes de forêt, sur latérites de basalte, 11 Oct. 1964 (holo-, P!; iso-, K!, TEF!).

Apparently dioecious shrub 2.5 m. Young twigs flattened, green, glabrous. Leaves ovate, apically long acuminate, hardly mucronate, basally obtuse to rounded, shortly decurrent, 3.5-8.5 cm long, 1.5-7 cm wide, 1.5-2.8 times longer than wide, glabrous, thinly chartaceous, moderately shiny, drying olive-green, concolourous, midvein slightly raised to slightly impressed adaxially, secondary veins 4-6 pairs, tertiary and finer venation hardly prominent, lax, reticulate. Petiole 4-12 mm long, 0.5-1 mm wide, channelled adaxially, glabrous or with a few hairs. Stipules persistent, deltoid, apically acute to acuminate, 1-1.5 mm long, 0.7-1 mm wide, glabrous or sparsely hairy, margin hyaline, fimbriate.

Stamine inflorescence axes up to 5 mm long, rarely branched once, curled, with numerous (up to 40 per inflorescence) pedicel stumps ca. 0.2 mm long (“podia” in WEBSTER 1965: 325) arranged distichously and in pairs (Fig. 1N). Bracts 2 per flower, deltoid, unequal, larger on the outside than within each pair of flowers, 0.5-0.8 mm long, 0.2-0.5 mm wide, pubescent abaxially, glabrous adaxially, margins fimbriate. Buds globose, slightly depressed apically. Stamine flowers (1-)2-3 per inflorescence, 2 mm long, 3 mm wide. Pedicel filiform, 3-5 mm long, 0.2-0.4 mm wide, glabrous, articulate just above the base (articulation practically invisible before abscission, leaving a “podium” (WEBSTER 1965: 325) after abscission). Sepals 5, more or less orbicular, 1.5-2 mm long, 1.5-2 mm wide, sparsely pilose abaxially, glabrous adaxially, margin entire, hyaline, sparsely fimbriate. Petals 5, oblong to spathulate, apically rounded, basally shortly clawed, 0.8-1.2 mm long, 0.5-0.8 mm wide, glabrous, margin erose. Disc 1.5 mm in diameter, antisepalously lobed, glabrous; lobes 0.5 mm long, emarginate, no sutures visible. Androecium 1 mm long, 1 mm wide, glabrous; stamens 5, antisepalously; filaments terete, fused at the base for ca. 1/2 of their length, bent downwards apically; anthers 0.5 mm long, 0.6-0.8 mm wide, deeply 4-lobed. Pistillode obconical, 3-lobed apically, 0.3 mm long, 0.2 mm wide, pilose.

Pistillate flowers solitary or in twos, 2-3 mm long, 4-6 mm wide. Bracts several per flower, deltoid, ca. 0.5 mm long, ca. 0.5 mm wide, pilose, margin fimbriate. Pedicel terete, 15-25(-55) mm long, 0.3-0.5 mm wide at the base, 0.6-1 mm wide at the apex, glabrous, articulate ca. 1 mm from the base, leaving a “podium” (WEBSTER 1965: 325) after abscission. Sepals 5, usually unequal, oblong to orbiculate, 2-3 mm long, 2-2.5 mm wide, glabrous, slightly accrescent (up to 4 × 4 mm), spreading at anthesis, reflexed at fruit maturity, margin hardly hyaline, entire. Petals elliptic, spathulate or orbiculate, apically rounded, 0.5-1(-2) mm long, 0.3-0.7(-1.5) mm wide, membranaceous, glabrous, margin slightly erose, sometimes absent, small and large petals in the same flower. Disc annular, often antipetalously lobed, lobes apically emarginate, 0.4-0.5 mm long, more or less fleshy, glabrous, margin slightly erose or entire, tearing irregularly at fruit maturity. Ovary globose to nearly cylindrical, densely
whitish appressed-pubescent. Styles horizontally spreading, bipartite to the base, the branches terete, 0.5-1 mm long, hardly tapering towards the apex, glabrous. Obturator without suture between ovules.

Fruits olive-green when dry, pubescent; dehiscence of septa in only one line running roughly parallel to the pericarp, this line erose and irregular as septa are very thin and brittle. Fruiting pedicel 22-55 mm long, 0.5 mm wide at the base, 1.5 mm wide at the apex. Exo- and mesocarp together ca. 0.2 mm thick when dry, rough on inner surface. Endocarp ca. 0.5 mm thick, brownish yellow. Seeds 3.5-4 mm long, 2.5-3 mm wide, medium brown, with ca. 8 vaguely defined, slightly sinuous folds running at right angles from the raphe to the dorsal part of the seed, some of them branching, resulting in 15-18 anastomosing folds running across the dorsal part, folds 2-3 times narrower than the flat ridges between them, in some places fading into a shallow irregularly foveolate-rugulose pattern, extending on the inside of the seed-coat up to 0.3 mm deep into the endosperm, raphe only slightly impressed, extending ca. 0.2 mm deep into the endosperm. Cotyledons oblong, apically nearly truncate, 2.5 × 1.8 mm; radicle 1.5 mm long, 0.5 mm in diameter. — Fig. 1.

ETYMOLOGY. — The epithet refers to the brain-like sculpture of the seed.

DISTRIBUTION. — Madagascar, Fianarantsoa province, around Farafangana and Manombo. — Fig. 3.

ECOLOGY. — Evergreen wet lowland forest, on laterite derived from basalt. Humid bioclimatic zone of CORNET (1974).

VERNACULAR NAMES AND USES. — None recorded.


Andrachne gracilipes Petra Hoffm., sp. nov.

Species A. ovali similis sed petiolis pedicellis femeinesque longioribus sepalis femeines majoribus fructibus minoribus stylos longioribus differt.

TYPUS. — Chauvet 372, Madagascar, prov. Tuléar [Toliara], Gorges du Fiherenana, 18 Nov. 1962 (holo-,
P!; iso-, TEF).

Apparently dioecious shrub 2-3 m. Young twigs flattened or terete, striate, light brown, glabrous. Leaves ovate, apically acute to rounded, often mucronate, basally acute to rounded, very shortly decurrent, 2.5-6 cm long, 1.2-7 cm wide, 1.5-3.1 times longer than wide, glabrous or with a few hairs along the midvein abaxially, membranaceous, dull, drying olive-green, concolourous or slightly paler abaxially, midvein slightly raised to slightly impressed adaxially, secondary veins 3-7 pairs, tertiary and finer venation lax, reticulate. Pedicel 7-13 mm long, 0.3-0.5 mm wide, deeply and narrowly channelled adaxially, glabrous or with a few hairs. Stipules persistent, ovate, apically obtuse to rounded, 1.5-2 mm long, ca. 1 mm wide, glabrous, margin hyaline, fimbriate.

Staminate flowers not known. Pistillate flowers solitary, ca. 3 mm long, ca. 6 mm wide. Bracts 3(-4?) per flower, ovate, 1.5-2 mm long, 0.7-1 mm wide, glabrous, margin hyaline. Pedicel terete, 15 mm long, 0.3 mm wide at the base, 0.6 mm wide at the apex, glabrous, articulate just above the base (articulation practically invisible before abscission). Sepals 5, sometimes unequal, spathulate, rounded to obtuse, 3-4 mm long, 2.5-3 mm wide, slightly accrescent (up to 5 × 4 mm, becoming elliptic to orbicular), spreading up to fruit maturity, glabrous, margin narrowly hyaline, slightly erose and with scattered hairs. Petals spathulate, apically rounded, hardly exerted from the disc, 0.5-1 mm long, 0.3-0.5 mm wide, membranaceous, glabrous, margin finely erose, with a few hairs. Disc annular, 0.4 mm long, membranaceous to chartaceous, glabrous, margin finely erose; at fruit maturity tearing between the sepals, then appearing antisepeally lobed or divided. Ovary ovoid to globose, densely whitish pubescent. Styles erect, bipartite to the base, the branches terete, 1-1.5 mm long, hardly tapering towards the apex, glabrous. Obturator with a suture between the ovules.
Fig. 1.— *Andrachne cerebroides*: A, habit with columnellae; B, mericarp of fruit after dehiscence; C, columella with persistent disc, petals and sepals; D, seed, lateral view; E, embryo, lateral view; F, young fruit; G, seed, dorsal view; H, pistillate flower, showing "podium" at base of pedicel; I, disc and petals of pistillate flower; J, pistillate flower, sepals removed; K, disc and petals of staminate flower; L, staminate flower; M, androecium; N, staminate inflorescence showing "podia" left after abscission and two buds. A-J, drawn from *SF* (Capuron) 23576; K-M, drawn from Capuron 23592; N, drawn from Bosser 18539.
Fig. 2. — *Andrachne gracilipes*: A, habit with pistillate flowers; B, pistillate sepal; C, fruit; D, pistillate petal; E, columella with persistent disc and petals; F, pistillate flower; G, longitudinal section of pistillate flower. Drawn from Chauvet 372.
Fruits depressed globose, ca. 4 mm long, 5-6 mm wide, olive-green when dry, pubescent, 3-lobed, the lobes more or less rounded, without or with very faint dorsal ridges along each lobe; dehiscence of septa apparently irregular but difficult to establish as septa are extremely thin and brittle. Fruiting pedicel (15-)20-50 mm long, 0.5-0.6 mm wide at the base, 1-1.2 mm wide at the apex. Columella ca. 6 times longer than the narrowest width, 4 mm long, 0.7 mm wide in the middle, base thickened to 2 mm, apex thickened to 1.2-1.5 mm. Exo- and mesocarp together ca. 0.2 mm thick when dry, reticulate on inner surface. Endocarp ca. 0.4 mm thick, brownish yellow. Seeds 3.5-4 mm long, 2.5-3 mm wide, very dark brown, rugose, with 6-7 sharply defined, slightly sinuous folds running at right angles from the raphe to the dorsal part of the seed, some of them branching, resulting in 10-12 anastomosing folds running across the dorsal part, folds 2-3 times narrower than the flat ridges between them, extending on the inside of the seed-coat ca. 0.7 mm deep into the endosperm, raphe only slightly impressed, extending ca. 0.2 mm deep into the endosperm. Cotyledons oblong, apically nearly truncate, 2.5 × 1.5 mm; radicle 1.8 mm long, 0.4 mm in diameter. — Fig. 2.

**ETYMOLOGY.** — The epithet refers to the slenderness and length of the petiole and pedicel of this species.

**DISTRIBUTION.** — Madagascar, Toliara province, around the Analavelona massif and the Fiherenana river. — Fig. 3.

**ECOLOGY.** — Dry deciduous forest, over basalt and sandstone. As Madame CHAUDET almost certainly collected the type at 250-300 m altitude (J. BOSSER, pers. comment), this species ranges between ca. 250 and 1250 m altitude. Subarid bioclimatic zone of CORNET (1974).

**VERNACULAR NAMES AND USES.** — None recorded.

**PARATYPES.** — MADAGASCAR, Toliara province: **Humbert 14232**, Forêt d’Analavelona au N du Fiherenana, sur basalte et grès, 950-1250 m, Mar. 1934 (P!); **Humbert 19739**, Forêt d’Analavelona (bassin du Fiherenana), forêt tropophile sur basalte, 1000-1200 m, 15-19 Dec. 1946 (P!).

**Andrachne ovalis** (Sond.) Müll. Arg.


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**Fig. 3.** — Geographic distribution of *Andrachne cerebroides* (triangles) and *Andrachne gracilipes* (circle).
Clutia galpinii Pax pro parte, Bull. Herb. Boissier 6: 736 (1898), as “Clutia galpini”. — Note: One of the two syntypes, Galpin 961, is in fact Andrachne ovalis (Sond.) Müll. Arg.

Dioecious, more rarely monoecious shrub to small tree 0.5-6 m. Bark grey. Young twigs terete, slightly striate, green, glabrous. Leaves ovate to elliptic, more rarely almost orbicular, apically acute, shortly acuminate or obtuse, more rarely rounded, hardly mucronate, basally obtuse to acute, shortly decurrent, (1-)1.5-6.5 cm long, (0.5-)0.7-3 cm wide, 1.4-2.5 times longer than wide, nearly glabrous adaxially, long pilose all over or only along the midvein abaxially, membranaceous to chartaceous, dull to shiny adaxially, dull abaxially, drying olive-green, usually lighter abaxially than adaxially, midvein slightly raised to slightly impressed adaxially, secondary veins 3-5 pairs, tertiary and finer venation hardly prominent, lax, reticulate. Petiole 3-9(-11) mm long, 0.3-1 mm wide, channelled adaxially, pilose to glabrous. Stipules persistent, deltoid, apically acute to acuminate, 0.9-1.5 mm long, 0.5-0.7 mm wide, glabrous or sparsely hairy, margin hyaline, fimbriate.

Staminate inflorescence axes up to 3 mm long, rarely branched, with several pedicel stumps ca. 0.2 mm long (“podia” in WEBSTER 1965: 325). Bracts 2 per flower, deltoid, acute, 0.8-1 mm long, 0.4-0.7 mm wide, long pilose abaxially, glabrous adaxially, margins slightly raised to slightly impressed adaxially, secondary veins 3-5 pairs, tertiary and finer venation hardly prominent, lax, reticulate. Petiole 2-9 mm long, 0.5-1 mm wide, channelled adaxially, pilose to glabrous. Stipules persistent, deltoid, apically acute to acuminate, 0.9-1.5 mm long, 0.5-0.7 mm wide, glabrous or sparsely hairy, margin hyaline, fimbriate. 

Staminate flowers 2-9 per inflorescence, 1-2 mm long, 2-3 mm wide. Pedicel filiform, 2-9 mm long, 0.1-0.3 mm wide, glabrous, articulate just above the base (articulation practically invisible before abscission, leaving a “podium” (WEBSTER 1965: 325) after abscission). Sepals 5, obovate to oblong, apically rounded, 1.5 mm long, 0.8-1.3 mm wide, pale green to yellowish green, glabrous to pilose abaxially, glabrous adaxially, margin entire to erose, hyaline. Petals 5, obovate to obcordate, apically rounded to slightly emarginate, basally shortly clawed, 1-1.2 mm long, 0.8-1 mm wide, white, slightly shorter than the sepals, glabrous, margin slightly erose to fimbriate. Disc 1.5 mm in diameter, glabrous, antisepalously 5-lobed, lobes deeply emarginate; disc thus appearing 10-lobed, sometimes irregularly crenate; lobes ca. 0.3 mm long, no sutures visible.

Androecium 1.5 mm long, 1.5 mm wide, glabrous; stamens 5, antisepalous; filaments terete; fused at the base for ca. 1/2 of their length, the free part spreading; anthers 0.3-0.5 mm long, 0.3-0.5 mm wide, deeply 4-lobed. Pistillode 3-partite, its parts apically dilated, 0.5-1 mm long, 0.5 mm wide, glabrous to pubescent.

Pistillate flowers solitary or in twos, 2 mm long, 3 mm wide. Bracts several per flower, deltoid, 0.5-0.8 mm long, 0.5-0.8 mm wide, pilose, margin fimbriate. Pedicel terete, 4-8 mm long, 0.2 mm wide at the base, 0.7-1 mm wide at the apex, glabrous, articulate 0.5-1 mm from the base, leaving a “podium” (WEBSTER 1965: 325) after abscission. Sepals 5, obovate to ovate or obovate, apically rounded, 2 mm long, 1 mm wide, glabrous to pilose adaxially, glabrous abaxially, not accrescent, spreading at anthesis, reflexed at fruit maturity, margin hyaline, entire to erose. Petals 5, spathulate or orbiculate, apically rounded, 1 mm long, 1 mm wide, extending to half the length of the sepals, membranaceous, glabrous, margin slightly erose, fimbriate. Disc annular, ca. 1.5 mm in diameter, irregularly crenulate, more or less fleshy, glabrous, tearing irregularly at fruit maturity. Ovary globose to ovoid, densely appressed-pilose. Styles horizontally spreading, bipartite to the base, the branches terete, 0.5 mm long, hardly tapering towards the apex, glabrous. Obsturator without suture between ovules. 

Fruits depressed-globose, 3-lobed, 5-6 mm long, 8-10 mm wide, olive-green to medium brown when dry, sparsely pilose to glabrous; dehiscence of septa in one straight line. Fruiting pedicel 5-15 mm long, 0.4-1 mm wide at the base, 0.5-1.5 mm wide at the apex. Columella 2.5-5 times longer than the narrowest width, 2.5-3.5 mm long, 0.7-1 mm wide in the middle, base thickened to 1-1.5 mm, apex thickened to 1.5 mm. Exo- and mesocarp together ca. 0.2 mm thick when dry, reticulate on inner surface. Endocarp 0.4-0.7 mm thick, brownish yellow. Seeds (3-)4 mm long, 3 mm wide, medium brown, irregularly rugose (especially when dry), folds 3-5 times narrower than the flat ridges between them, extending on the inside of the seedcoat up to 0.3 mm deep into the endosperm, raphe only slightly impressed, extending ca. 0.2 mm deep into the endosperm. Cotyledons oblong, apically nearly truncate, 2.5 × 2 mm; radicle 1 mm long, 0.5 mm in diameter.
**Distribution.** — South Africa (Eastern Cape, Gauteng, KwaZulu/Natal, Mpumalanga, Northern, and Western Cape Provinces), Swaziland and Zimbabwe.


**Ecology.** — In mixed woodland, subtropical forest relics, wet forest, on forest edges, under trees, in grass, on stream banks, in ravines; on moist to well-drained, stony soil, in light shade; at (300-)1000-1850 m altitude.

**Vernacular names.** — South Africa: Bastard lightning bush, Basterbliksembos (COATES PALGRAVE 1983: 394); Umbezo (BURTT DAVY 1932: 288).

**Uses.** — Said to drive snakes away by the pungent smell of the roots; powdered roots used as insecticide, against chest complaints, headaches, snakebites and scalp parasites in African folk-medicine (COATES PALGRAVE 1983: 394); destroys fleas (Cooper 1168, K).

**Note.** — Leaves are said to smell of HCN when wilted (Story 1887, K).

DISCUSSION

When the material of the two new species described here was first discovered in the Paris herbarium, they were believed to be new species of *Meineckia*, a genus which is well represented in Madagascar. Upon closer examination, however, both taxa differ from all species of *Meineckia* in the presence of petals and in the dense indumentum of the ovaries (WEBSTER 1965). On the other hand, the two new species agree in all but some quantitative characters (see key to species, above) with *Andrachne ovalis* from Southern Africa, hitherto the sole member of *Andrachne* sect. *Pseudophyllanthus*. The two new species are therefore assigned to this section. It can be assumed that these three species form a monophyletic group.

The systematic position of sect. *Pseudophyllanthus* is unresolved (HOFFMANN 1994). It does not fit well into either of the two genera (*Andrachne* s.str. and *Leptopus*) resulting from the split of *Andrachne* s.l. based on ovule configuration. *Andrachne ovalis* also holds an intermediate position with regards to seed morphology and anatomy. The seeds display a strong similarity to both *Andrachne* s.str. and *Leptopus*, but also share characters with those of *Meineckia* (STUPPY 1996: 159, 168 and pers. comm.). The genus *Meineckia* is here understood in the broad sense of RADCLIFFE-SMITH (1997), i.e. including *Zimmermannia* and *Zimmermanniopsis*.

The combination of characters found in *Andrachne* sect. *Pseudophyllanthus* (flowers petaliferous, pistillode present, ovules anatropous, seeds rugose) is not provided for in the most recent key to the subtribes of the tribe Phyllantheae (WEBSTER 1994: 40). The following key has been compiled using original data as well as data from POJARKOVA (1960) and WEBSTER (1965, 1994), in order to facilitate recognition of *Andrachne* sect. *Pseudophyllanthus*.

Table 1 shows the taxonomically significant characters of *Andrachne* sect. *Pseudophyllanthus* in comparison with the three most similar genera. *Andrachne* s.str., *Leptopus* and *Meineckia* are currently assigned to three different subtribes of the tribe Phyllantheae (WEBSTER 1994). It can be seen from the table that *Andrachne* sect. *Pseudophyllanthus* differs in at least two characters from each of the three other taxa.

Faced with such contradictory morphological evidence, it is at present impossible to establish the closest relative of *Andrachne* sect. *Pseudophyllanthus*. Amendment of the generic circumscription of either *Leptopus* or *Meineckia* to include *Andrachne* sect. *Pseudophyllanthus* would at this point be arbitrary as there is no evidence that either genus is its sister group. At the same time I am reluctant to raise the section to generic rank in the absence of molecular evidence. This would only take the problem to the next taxonomic level of assigning the new genus to a subtribe.

Since the South African species has been placed in *Andrachne* for most of its history, it seems best to maintain it in that genus for the time being, and to describe the closely related Madagascan species in the genus *Andrachne* as well. It is hoped that first molecular data can be presented soon. The lack of recent taxonomic treatments for both *Andrachne* and *Leptopus* at the species level is a further predicament. A revi-

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**Key to the taxa most similar to *Andrachne* sect. *Pseudophyllanthus***

1. Plant up to 0.5 m tall. Ovules hemitropous. Staminate disc dissected. Seeds sculptured. Plants monoecious .......................................................... *Andrachne* s.str.
1'. Plant up to 6 m tall. Ovules anatropous. Staminate disc dissected or annular. Seeds smooth or sculptured. Plants monoecious or dioecious ......................................................... 2
2. Seeds smooth. Staminate disc dissected or annular. Plants dioecious ............................................ *Leptopus*
2'. Seeds rugose. Disc annular. Plants monoecious or dioecious ..................................................... 3
3. Petals absent. Ovaries glabrous. Filaments connate or free ..................................................... *Meineckia*
3'. Petals present. Ovaries hairy. Filaments connate ..................................................... *Andrachne* sect. *Pseudophyllanthus*
sion over the entire disjunct range of these groups is badly needed.

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REFERENCES


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| Table 1. — Comparison of principal differential characters of Andrachne sect. Pseudophyllanthus, Andrachne s.str., Leptopus and Meineckia. |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Plant                           | Andrachne sect.                | Andrachne s.str.                | Leptopus                        |
| Habit                           | mon-/dioecious                 | monoeious                       | dioecious                       |
| Height                          | shrubs/small trees             | subshrubs/herbs                 | shrubs/subshrubs               |
| Petals                          | up to 6 m                      | up to 0.5 m                     | up to 6 m                      |
| Disc                            | present                        | present                        | present                        |
| Filaments                       | annular                        | dissected                       | dissected/annular              |
| Ovary                           | connate                        | free/connate                    | free/connate                   |
| Ovules                          | pubescent                      | glabrous/glandular              | glabrous/pubescent             |
| Seeds                           | anatropous                     | hemitropous                     | anatropous                     |
| Endosperm                       | sculptured                     | sculptured                      | smooth                         |
|                                 | slightly ruminata              | not ruminata                    | not ruminata                   |

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