THE GENERA *MELANOSELINUM* HOFFM. AND *ANGELICA* L. (UMBELLIFERAE) IN MACARONESIA

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Melanoselinum Hoffm. is a monotypic genus of the family Umbelliferae and is one of the numerous endemics found in Macaronesia, being recorded from the archipelagos of Madeira and the Azores. The only species is *M. decipiens* (Schrad. & J.C.Wendl.) Hoffm. Doubts held by various workers as to the true identity of *M. decipiens* outside Madeira recently culminated in the Azorean plants being reassigned to a new species of *Angelica*, *A. lignescens* Reduron & Danton. Although the authors provided a full description and illustrations, other data for this species are sketchy. This paper reviews the genera *Melanoselinum* and *Angelica* in Macaronesia and provides additional information on *A. lignescens*, including new records. *M. decipiens* is also described and lectotypified and the currently accepted usage of all other names published in *Melanoselinum* are given.

PRESS, JOHN R. & EDUARDO DIAS. 1998. Os géneros *Melanoselinum* Hoffm. e *Angelica* L. (Umbelliferae) na Macaronésia. *Arquipélago*. Ciências biológicas e Marinhas. 16A: 1-10. Ponta Delgada. ISSN 0873-4704.

O género monotipico *Melanoselinum* Hoffm. da família Umbrelliferae é uma das endémicas mais numerosas da Macaronésia, sendo registada para os arquipélagos da Madeira e dos Açores. A única espécie é *M. decipiens* (Schrad. & J.C. Wendl.) Hoffm. As dúvidas levantadas por vários investigadores sobre a verdadeira identidade de *M. decipiens* fora da Madeira culminaram recentemente em as plantas açoreanas serem redesignadas como uma nova espécie de *Angelica*, *A. lignescens* Reduron & Danton. Apesar de uma descrição e ilustrações serem providenciadas pelos autores, outros dados para esta espécie são muito incompletos. Este artigo revê os géneros *Melanoselinum* e *Angelica* na Macaronésia e fornece informações adicionais de *A. lignescens*, incluindo novos registos. *M. decipiens* é também descrita, lectotipificada e é fornecida a lista de todos os nomes correntemente publicados, usados e aceites de *Melanoselinum*.

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INTRODUCTION

In their recent publication describing a new species of *Angelica*, *A. lignescens*, from the Azores, DANTON et al. (1997) formalised the views of various taxonomists studying the Macaronesian flora (including ourselves) that Azorean plants called *Melanoselinum decipiens* (Schrad. & J. C. Wendl.) Hoffm. had been misidentified and, in fact, represented an entirely new taxon. They gave a detailed description and excellent illustrations for the new species but little in the way of further information, dealt

incompletely with the taxonomic history of this plant, and failed to set their new species in either a full historic or geographic context. Furthermore, the separation of Azorean material into another species in a different genus significantly changes the current concept of *Melanoselinum*. Here, we provide a more comprehensive review of both genera as they occur in Macaronesia.

MATERIALS AND METHODS

Plants of *Melanoselinum decipiens* from Madeira - where the species is comparatively common - are well known. Plants from the Azores are much more poorly known as they occur in only a few localities, each with a small population, and herbarium material is equally scanty.

For this study, living material was examined in the field and growing in Chelsea Physic Garden, London and in the Jardim Botânico, Faial. Herbarium material from the University of the Azores (AZU), The Natural History Museum (BM), Cambridge University (CGE) and the Royal Botanic Gardens, Kew (K) was examined. No material was found at the herbaria in the Instituto Botânico, Coimbra (COI) and Leningrad (L).

RESULTS

Angelica L.

HISTORY: The earliest Macaronesian record using the name *Angelica* L. is that of DROUËT (1866) who listed a plant collected by Morelet from the Caldeira of Santa Bárbara on Terceira as "*Angelica montana* Schl". Drouët's reference also contains a note stating that "M. Heer pense que ce serait l'Ang. sylvestris Linn. ou une variété (Heer in litt.)". WATSON (1870) & TRELEASE (1897) merely repeated Drouët's original record although Trelease gave it under the name *A. sylvestris* L. No Morelet specimens have been traced but the Caldeira of Santa Bárbara is one of the known sites for *A. lignescens* and it seems probable that it was this plant which Morelet collected. It is also likely that Drouët meant to refer the plant to *A. montana* Brot., a species now considered to be conspecific with *A. sylvestris*. Finally, DANTON et al. (1997) described *A. lignescens* from Faial and Pico.

All other records of *Angelica lignescens* in the Azores appear under the name *Melanoselinum*. WATSON (1844) tentatively identified sterile material from Faial as belonging to *M. decipiens*. However, LOWE (1864) maintained that this species was endemic to Madeira and WATSON (1870) later rejected his own earlier identification as applying to some other (unidentified) umbellifer. DROUËT (1866) recorded *M. decipiens* as well as *Angelica* but was merely repeating Watson's record from Faial. Sixty two years later TUTIN & WARBURG (1932) recorded *M. decipiens* once more from the Caldeira on Faial (Watson's original locality) and from Lajes on the island of Pico. Since then locations have been added from the islands of Terceira (PINTO DA SILVA & PINTO DA SILVA 1974) and São Miguel (MEDEIROS & FURTADO 1974), all under the name *M. decipiens*. Most recently, the plant has been discovered at two sites on Flores, at Outeiros in 1989 and Peninha in 1995, by DIAS (unpublished).

CHARACTERISTICS: Early authors were clearly confused about the true identity of Azorean plants with some assuming an exact correspondance with plants from Madeira. They are, however, quite different, sharing more features with *Angelica* than any other genus. A comparison of *Melanoselinum*, *Angelica* L. and the Azorean plants is given in Table 1.

Table 1
Comparison of characters in *Melanoselinum*, *Angelica* and Azorean plants.

Melanoselinum	Azorean plants	*Angelica*
Plant robust but not stout	Plant stout	Plant stout to slender
Stem not fistular, lower half woody and leafless	Stem fistular, woody only at very base, leafy throughout but lvs at base more or less forming a rosette	Stem fistular, leafy throughout but lvs at base more or less forming a rosette
Bracts leafy	Bracts absent	Bracts absent or few
Bracteoles toothed to lobed	Bracteoles entire	Bracteoles absent or not, then usually entire
Flowers purplish	Flowers greenish	Flowers white, greenish, rarely purplish or pink
Carpels with central ribs filiform	Carpels with central ribs prominent	Carpels with central ribs prominent
Wings toothed	Wings entire	Wings entire
Seed face plane	Seed face concave	Seed face plane or concave

Melanoselinum consists of tall, robust, monocarpic plants with non-fistular stems; large, pinnatisect leaves less than 1 m long and more or less evenly spaced along the stem (as shown by the leaf scars) but present only in the upper part at flowering; a hemisphaerical inflorescence; numerous, large, prominent bracts and toothed bracteoles; and strongly dorsally flattened fruits with lateral ribs extended into broad, toothed wings (Fig. 1). The two ventral vittae are large.

While they are also robust, monocarpic perennials with pinnatisect leaves, the Azorean plants differ from *Melanoselinum* in almost every other respect (Fig. 2). They produce only a very short, thick stem with crowded basal leaves (as shown by the old leaf scars) during the whole of the vegetative period. These elongates greatly before flowering into a fistular and ultimately hollow, striated stem many times longer and frequently wider than that formed during the vegetative period. The largest leaves may exceed 1.5 m in length and at flowering form an almost rosette-like cluster at the base of the plant, with well-spaced cauline leaves above. The peduncles are all of similar length and radiate from the stem in all directions, giving a sphaerical inflorescence.

Bracts are absent, while the bracteoles are entire. The fruits are much smaller than those of *M. decipiens* (approximately half the size), and have entire wings (Figs. 1 & 2). The dorsal ribs of the somewhat corky fruit are much more prominent and the vittae are all similar in size.

DA SILVA et al. (1998) analysed essential oils from both sources and showed there were significant differences between the Madeiran *Melanoselinum* and Azorean plants. Oxygen-containing mono- and sesqui-terpenes occur only in *M. decipiens* while the sesqui-terpene fraction from Azorean plants consists of hydrocarbons only. The latter contains a much higher percentage of non-terpenoids than oil from *M. decipiens*.

These differences not only distinguish Azorean plants from *Melanoselinum decipiens* of Madeira but properly place them within the genus *Angelica*, where they have now been described by DANTON et al. (1997) as *A. lignescens*. The authors based their description on material from Faial and Pico. Material from sites not visited or unknown to these authors provides additional information on this striking plant, particularly regarding variation within the species.

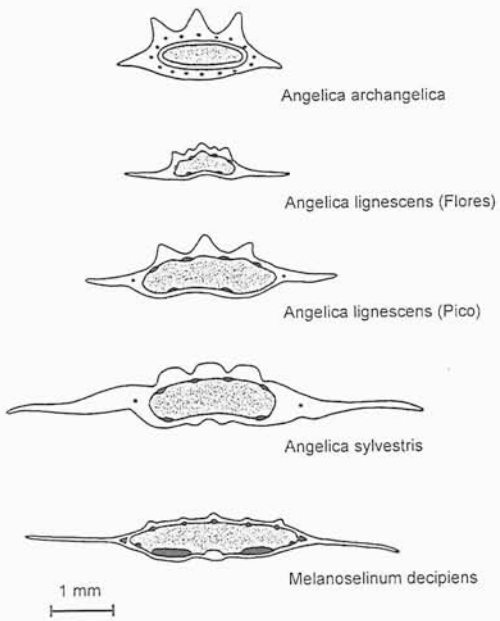

Fig. 1. Cross-sections of mature fruits of *Angelica* and *Melanoselinum*.

Angelica lignescens Reduron & Danton, *Acta botanica Gallica* **144**: 186 (1997).
Melanoselinum decipiens sensu auct. az., non (Schrad. et J.C.Wendl.) Hoffm.
Angelica montana sensu Drouët, *Catalogue de la flore des îles Açores*: 181 (1866), non Schleich.

HOLOTYPE: *Danton 385*, Ilha do Faial. "Environ 800 m d'altitude, parmi les buissons, prés d'un ravin aux alentours de la Casa do Guarda en montant de Ribeira do Cabo á la Caldeira (centre-ouest de l'île)." 11 July 1996 (**P**, not seen).

The isotypes cited by DANTON et al. (1997) are, in fact, paratypes. They are *Danton 384*, Faial; *Danton 390*, Faial; *Danton 447*, Pico; *Danton 448*, Pico (all in Danton's private herbarium, not seen). None of this material has been deposited in Azorean herbaria.

ICONES: Danton, P., Reduron, J. P. & Baffray, M. 1997. *Acta botanica Gallica* **144**: 188, 189.
Sjögren, E. 1984. *Açores Flores*: *Melanoselinum decipiens*, no. 32.

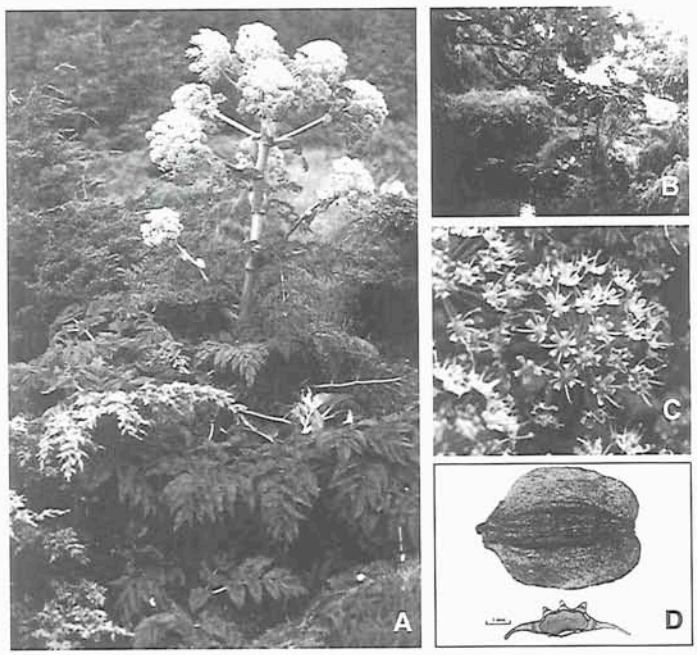

Fig. 2. A. Flowering individual at the river edge, in a forest gap (Terceira, Ribeira das Sete, 500 m); B. Three years old individual in typical habitat of backwash by margin of mountain stream (forested blanket bog at Ribeira do Vieira, 800m); C. Flowers of a single umbel; D. Fruit of a Terceira plant (Dias 1402, AZU).

DESCRIPTION: Stout, monocarpic perennial with a total height up to 3.70 m. Lower part of *stem* up to 50 cm x 3-12 cm, woody, solid with a soft pith; flowering portion of stem very long and stout, fistular, up to 320 cm x 8-9 cm. *Leaves* yellowish green, triangular-ovate in outline, 3(4)- pinnate, (55-) 91-169 x (30-) 72-150 cm. Basal leaflets with lamina 25-95 x 10-60 mm, apical leaflets 105-140 x 40-55 mm, all lanceolate to ovate-lanceolate, acuminate, base cuneate to rounded or cordate, asymmetric with basiscopic side enlarged, margins often decurrent onto rachis, unevenly dentate-serrate, teeth cuspidate with pale or purple-tinged tips, glabrous on both surfaces except for short hairs along main veins above, main veins patent white villous and with minute sessile glands beneath, secondary veins finely reticulate; petiolules up to 1 cm but usually very short or absent. *Petiole* 40-81 cm, inflated and sheathing at base. Uppermost cauline leaves subtending inflorescence branches bract-like, with a large inflated petiole and small 2-sect lamina. *Inflorescence* 95-130 cm across, sphaerical, peduncles stout, densely white pubescent. *Compound umbels* up to 150 mm diameter, globular; bracts absent; rays 20-74, 40-60 mm long, densely pubescent. *Simple umbels* up to 22 mm diameter, globular; bracteoles 9-11 mm, linear, entire, pubescent. *Pedicels* (14-) 27-75, 4.5-12 mm, densely white pubescent. *Sepals* absent. *Petals* equal, greenish white, 0.7-1 mm, lanceolate, entire, with an incurved apex *c.* 0.7 mm. *Ovary* ridged, blackish, pubescent; stylopodium 0.6 mm, conical; styles shorter than the stylopodium, ultimately reflexed. *Fruit* 3.5-7 x 5 mm, oblong to suborbicular, pale brown and somewhat corky, dorsal ribs prominent, acute, lateral ribs broadened into wings (0.4-) 0.5-1.5 mm wide, the ventral face concave. Vittae few (*c.* 6). *Seed* adhering to pericarp at maturity.

FLOWERING PERIOD: June.

COMMON NAME. Salsa preta

DISTRIBUTION: The islands of Faial, Flores, Pico, São Miguel and Terceira in the Azores, in small ravines and other moist, sheltered sites often among cloud forest, at altitudes between 500 m and about 900 m.

ECOLOGY: Today the habitat of *Angelica lignescens* seems to be restricted to backwashes and margins of mountains streams and gentle cliffs with running water and organic soils. It is consistently found in sheltered places with low light intensity and deep organic deposits (sometimes peat) which are permanently waterlogged or have periodic running water. The large size of a flowering plant (340 x 270 cm), the fast growth of the flowering stem (2-3 months) and the large, unprotected leaves may explain these habitat requirements. Running water as the main dispersal agent and a high sensitivity to herbivores (most of them introduced) have been demonstrated and may be the reason for the low number of populations (about 30) and mountain distribution of this plant. Unconfirmed reports indicate that low altitude populations could be found in the recent past where sheltered, rich soils were available for native plant communities.

SPECIMENS:

AZORES. **Faial:** Caldeira, July 1929, Tutin & Warburg s.n. (CGE, K).

Flores: Outeiros - Pico do Meio Dia, 486 m, 5 July 1989, Dias 1163 (AZU). Outeiros, abaixo da estrada, 500 m, 15 Augusto 1995, Dias 1283 (AZU). Peninha, muro do caminho, cancela da barrosa, 15 August 1995, Dias 1282 (AZU).

Pico: Gullies above Lages [Lajes], July 1929, Tutin & Warburg s.n. (CGE). Lajes do Pico, Caveiro (Lagoa do Paúl), 980 m, 29 July 1988, Dias 1035 (AZU). Caveiro E, edge of forest, 870 m, 12 August 1995, Dias 1270 (AZU).

Terceira: Serra de Santa Bárbara, 900 m, May 1964, Pinta da Silva & Dansereau 175 (LISU). Altares, 500 m, May 1984, Gonçalves 7162 (AZU). Serra de Santa Bárbara - Caterina Vieira, margem do ribeiro, 20 June 1991, Dias s.n. (AZU);

Ribeira das Sete, 500 m, 28 May 1996. Press 3131 (BM). Serra de Santa Bárbara, Ribeiro do Borges, 730m, October 1996, Barcelos 394 (AZU). Serra de Santa Bárbara, Ribeira do Vieira, 730 m, August 1996, Dias 1402 (AZU).

LIVING COLLECTIONS. **Chelsea Physic Garden:** 1994, Jermy 137A (Origin Pico). 1994, Jermy 20737 (Origin Pico). **Jardim Botânico do Faial.**

COMMENTS: DANTON et al. (1997) pointed out the similarity of *Angelica lignescens* to *A. sylvestris*, and gave ten characters of stem, leaves, flowers and fruits in which the species differ. To these can be added the generally smaller stature of *A. sylvestris*, the purplish (not green) stem, white (not greenish) flowers and fruits with the dorsal ribs more rounded and less prominent and the wings broader (Fig. 1). However, *A. lignescens* probably more closely resembles the widespread European species *A. archangelica* L. This is particularly true in terms of the size and general appearance of the plants and in the prominent and acute dorsal ribs of the mature fruits. They differ in the fruits of *A. lignescens* being less corky, with broader lateral wings and few vittae and in that the seed does not separate from the pericarp at maturity (Fig. 1).

Angelica lignescens is monocarpic, plants growing for several years before flowering: in a population on Terceira all of the flowering individuals were estimated as six years old or more. There is generally no vegetative perennation and after fruiting the whole plant dies but rarely flowering individuals may produce what appear to be ramets from root buds.

This species has been included (as *Melanoselinum decipiens*) in several regional works covering the Azores but the descriptions are either inadequate or unreliable. Those given by TUTIN (1968) & FRANCO (1971) and purporting to be of plants from the Azores clearly describe Madeiran material (i.e. true *M. decipiens*). The description given by SJÖGREN (1984) is accurate but extremely brief. Having only incomplete material, PINTO DA SILVA & PINTO DA SILVA (1974) commented on the distinct morphology of Azorean plants but were unable to arrive at a definite conclusion as to their taxonomic status and continued to use the name *M. decipiens*.

VARIATION: *Angelica lignescens* shows some degree of variation among populations from different islands with respect to fruit characters. The mature fruits of plants from Flores are small and rather oblong, measuring only 3.5-5 x 2-2.9(-3.3) x 0.8-1 mm, with 3-5 dorsal ribs 0.2 mm high, and wings (0.4-) 0.5-1(-1.1) mm wide (Fig. 1). Plants from Pico have larger, more or less orbicular fruits (4.5-) 5-6 x 3-4(-4.5) x 0.9-1.2 mm, with only 2-3 dorsal ribs 0.4 mm high, and wing 0.7-1.5 mm wide (Fig. 1). The fruits of Terceiran plants are similar but more robust and are generally slightly larger, up to 7 x 5 mm. All five dorsal ribs are well developed (Fig. 2D). DANTON et al. (1997) gave very similar measurements to cover material from both Pico and Faial (fruits 5-7 x *c.* 4.6 mm, with wings 1.4 mm wide and with 3 dorsal ribs). We have seen no fruiting material from São Miguel. While these differences are suggestive of some measure of infraspecific division, studies of *Angelica archangelica* suggest alternative explanations for at least some of this variation.

In Fennoscandia OJALA (1984, 1986) found that the size and shape of the fruits of *A. archangelica* varied clinally, with plants growing further north or at higher altitudes producing larger fruits than plants from further south or at lower altitudes. Fruit length and width and wing width were found to be very plastic characters but differences in fruit thickness and the height of the dorsal ribs were more consistent. Ojala's suggestion was that temperature is a major factor in determining this variation. The greatest growth increase in *A. archangelica* fruits during maturation is in their width: higher temperatures encourage more rapid maturation and therefore smaller, narrower fruits. Variation in other characters was influenced by the age of the plant at flowering which, in turn, was correlated with local environment, including the vegetation type of the site. OJALA also postulated that, while some of the variation found was undoubtedly phenotypic, it also indicated genetic differences between isolated populations.

While latitude is unlikely to play any part in the variation found in *Angelica lignescens*, altitude and, perhaps, local climate may do so. The Flores populations grow at an altitude of around 500 m, a little over half that of the populations on Pico and Faial. The populations on different islands are also geographically isolated from each other as the fruits are water dispersed and cannot pass easily between islands. It is possible that the variation seen in *A. lignescens* reflects a similar degree of genetic diversity to that found in *A. archangelica* but further study is required to establish this.

Melanoselinum Hoffm.

HISTORY: HOFFMANN (1814) created the genus *Melanoselinum* to accommodate *Selinum decipiens* Schrad. & J.C.Wendl., a plant described in 1795 from material growing in the Botanic Garden at Hannover (see Fig. 3). The plant was of unknown origin when it was first described but in 1829 the English botanist Richard Lowe discovered it growing in the wild along the Ribeira de São Jorge on Madeira (LOWE 1838). Since then, various authors, including Lowe (1864) have given accounts of the genus, MENEZES (1914) and CANNON (1994). Notably Chevalier (1935) has transferred various species into the genus at different times, but all have been removed subsequently and *Melanoselinum* is accepted now as monotypic.

CHARACTERISTICS: Plants of *Melanoselinum decipiens* are tall monocarpic herbs with a comparatively slender, solid stem which is somewhat woody and bare of leaves in the lower half. The pinnatisect leaves form a loose crown in the upper half of the stem. The inflorescence has peduncles of different lengths, the laterals longer than the terminal, giving a typical umbrella-shaped inflorescence. Large, toothed to almost laciniate bracts are present at the base of the rays and toothed bracteoles at the base of the pedicels. The flowers are whitish or pale purplish and reportedly have a strong, fruity scent. The fruits are oblong, dark brown, hairy and have sharply toothed wings (Fig. 1); the two ventral vittae are large.

Melanoselinum Hoffm., *Gen. pl. umb.*, ed. 2, **1**: 156 (1814).
Tall, robust monocarpic perennials with large, 2- to 4-pinnatisect leaves sheathing at the base. Compound umbels very large, up to 130 cm diameter. Calyx 5-toothed. Petals inflexed-cordate. Fruits compressed, broadly winged.

M. decipiens (Schrad. & J. C.Wendl.) Hoffm., *Gen. pl. umb.* ed. 2, **1**: 156 (1814).
Selinum decipiens Schrad. & J. C.Wendl., *Sertum Hannoveranum* **1(3)**: 23 (1797).
Thapsia decipiens (Schrad. & J.C.Wendl.) Hook. f. in *Curtis Bot. Mag.* **93**; *t.* 5670 (1867).

LECTOTYPE: No specimens can be traced so the illustration accompanying the protologue of *S. decipiens* (*t.* 13) is here designated as lectotype (see Fig. 3).

ICONES: PRESS, J. R. & M. J. SHORT. (Eds.). 1994. *Flora of Madeira*: *plate* 29, 2.
DRUDE, C. G. O. 1898. Umbelliferae. *In* Engler & Prantl, *Pflanzenfamilien* **3**. VIII: *fig.* 76.

DESCRIPTION: Monocarpic perennial, dying completely after flowering. *Stem* up to 2(3) m x 3.6 cm, somewhat woody especially in the lower portion, solid with a large pith. *Leaves* triangular in outline, 2- to 3(4)-pinnate, up to 60 x 44 cm, the axes strongly laterally compressed, at least sparsely white patent villous beneath, sometimes with short, dense hairs on the upper side. Basal leaflets 46-100 x 30-60 mm, lanceolate to ± oblong, the larger lobed or incompletely divided, the basiscopic side usually somewhat enlarged; base often decurrent onto rachis; margins coarsely to finely serrate with a few long white hairs, teeth cuspidate; glabrous on both surfaces except for short hairs along main veins above and white villous hairs along main veins beneath. *Petioles* inflated, sheathing at the base, densely pubescent, at least when young. *Inflorescence* up to 50-90 cm across, domed to hemisphaerical. *Compound umbels* 9-10 cm diameter, bracts (10-) 20-52 x (2-) 2.5-12 mm, lanceolate, toothed to lobed in the upper half, shortly pubescent, rays 30-50, 15-50 mm in flower, 45-120 mm in fruit, shortly pubescent. *Simple umbels* 9-20 mm diameter; bracteoles (3-) 7-15 x (0.8-) 1-2.5 mm, lanceolate, acuminate, entire, shortly pubescent, margins with a white villous fringe and a pale scarious border. *Pedicels* 13-25, 9-14 mm, shortly pubescent. *Petals* 13-17(-20) mm (excluding incurved tip). *Ovary* densely hairy; stylopodium 0.4-0.5 mm; styles 2, 0.4-1 mm. *Fruit* 8.5-15 x 5.5-7 mm, oblong with toothed wings 1.5-2 mm broad, dark brown with short, scattered hairs. Vittae *c.* 10, the 2 ventral ones large. *Seed* adhering to pericarp.

CHROMOSOME NUMBER: n = 11 (BELL & CONSTANCE 1966)

FLOWERING PERIOD: April-December.

DISTRIBUTION: Endemic to Madeira, among rocks and on banks in shady ravines between 0-800 m, mostly in the northern part of the island; widely used as a fodder plant, the leaves being cut and carried to stock; also grown as an ornamental.

COMMON NAME: Aipo da serra; Aipo do gado.

COMMENTS: The above description is based on material seen by the authors. Additionally LOWE (1864) gave a very detailed description that can be usefully referred to.

The nearest relative of *Melanoselinum* is probably the Madeiran endemic *Monizia edulis* Lowe, which generally resembles *Melanoselinum* but is a perennial with finer foliage and wingless fruits with thickened, corky ribs and only six vittae.

SPECIMENS:

MADEIRA. Faial, 8 March 1986, J.F.M. & M.J. Cannon 5118 (BM). Ribeiro Frio, 3000 feet, July 1993, Hanson s.n. (BM). Meza, N. of Ribeiro Frio, 860 m, 21 July 1981, Hampshire 7 (BM). N. Madeira, June 1837, Lemann s.n. (BM, K). Ravines in the N. of Madeira, June 1937, Lippold s.n. (K). St Vincente & S. Jorge, August 1855, Lowe s.n. (K). Ribeiro da Metade, 1000-1300 m, 18 July 1866, Mandon 118 (BM, K). Jardim da Serra, September 1865, Mandon 118a (BM, K). Camacha, 2000 feet, 10 August 1956, Pickering 48 (BM). Ribeiro do Inferno, 20 m, 19 June 1985, Press 1005 (BM). Levada de Serra do Faial, between Camacha and Ribeiro do Porto Novo, 820 m, 22 March 1984, Press & Short 270 (BM). Without precise locality, July 1837, Lemann s.n. (K). Without precise locality, Masson s.n. (BM). Without precise locality, Herb. Murray (ex Herb. Moniz) (BM).

LIVING COLLECTIONS. Jardin des plantes, 7 July 1819, Herb. J. Gay s.n. (K). Herb. Bishop Goodenough s.n. (K). Hort. Kew. s.n. (K). The Mount, in Mr Phelp's grounds, Lowe 668 (K). Sr Nuno de Freitas garden, Cruzes, Funchal, 18 June 1863, Lowe s.n. (K). Hawthorn, Melbourne, Australia, January 1980, Moore, s.n. (K). Quinta Val, Funchal, 30 June 1895, Murray s.n. (BM). University of California Botanic Garden, 1961-1962, Herb. University of California C-195 (K).

NAMES WITHIN MELANOSELINUM: In addition to *Melanoselinum decipiens*, the following combinations have been published within *Melanoselinum*. They are given here, together with their current names and native distributions.

M. annuum (Bég.) A.Chev. in *Bulletin du Muséum National d'Histoire Naturelle*, Ser. II, **7**: 144 (1935) = ***Tornabenea annua*** Bég.
Endemic to Cabo Verde (Santiago, Brava).

M. bischoffii (J. A. Schmidt) A.Chev. in *Bulletin du Muséum National d'Histoire Naturelle*, Ser. II, **7**: 144 (1935) = ***Tornabenea bischoffii*** J. A. Schmidt
Endemic to Cabo Verde (Santo Antão, São Vicente, São Nicolau, Santiago, Fogo)

M. edulis (Lowe) Drude in Engler & Prantl, *Die Naturlich Pflanzenfamilien* 3(8): 247 (1898) = ***Monizia edule*** Lowe
Endemic to Madeira (Madeira, Desertas, Selvagens)

M. hirtum (J. A. Schmidt) A.Chev. in *Bulletin du Muséum National d'Histoire Naturelle*, Ser. II, **7**: 144 (1935) = ***Tornabenea hirta*** J. A. Schmidt
Endemic to Cabo Verde (Santo Antão, São Vicente, São Nicolau, Santiago)

M. insulare (Parl. ex Webb) A.Chev. in *Bulletin du Muséum National d'Histoire Naturelle*, Ser. II, **7**: 144 (1935) = ***Tornabenea hirta*** J. A. Schmidt
Endemic to Cabo Verde (Santo Antão, São Vicente, São Nicolau, Santiago)

M. moniza (Masf.) A.Chev. in *Bulletin du Muséum National d'Histoire Naturelle*, Ser. II, **7**: 144 (1935) ≡ ***Monizia edule*** Lowe
Endemic to Madeira (Madeira, Desertas, Salvages)

M. seguieri Sweet, *Hortus Britannicus* ed. 1, : 190 = ***Ligusticum ferulaceum*** All.
Endemic to France and Italy (the French Jura and SW Alps).

M. tenuissimum A.Chev. in *Bulletin du Muséum National d'Histoire Naturelle*, Ser. II, **7**: 144 (1935) ≡ ***Tornabenea tenuissima*** (A. Chev.) A. Hans. & Sund.
Endemic to Cabo Verde (Fogo).

Fig. 3. A reproduction of the illustration of *Selinum decipiens* Schrad. & J. C. Wendl. designated here as the lectotype of *Melanoselinum decipiens* (Schrad. & J. C. Wendl.) Hoffm.

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