



Two new subspecies of Aloe from Madagascar:

Aloe deltoideodonta Baker ssp. *amboahangyensis* N. Rebmann ssp.nov.

Aloe deltoideodonta Baker ssp. *esomonyensis* N. Rebmann ssp.nov.

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Fundamental preliminary remark: only the text in French refers to the diagnosis of both taxa.

Aloe deltoideodonta is a species living in a wide distribution area. It grows on the high plateau of Ambalavao to Ianabinda, in the southwest of Bezaha to Bénénitra but also in the southeast of Tranomaro to Tsivory.

In this vast distribution area the species presents various subspecies from which the number differs according to the authors. Today, I count 6 subspecies (Perrier de la Bathie, Reynolds and Castillon speak about varieties:

-*Aloe deltoideodonta* Baker ssp. *deltoideodonta*

-*Aloe deltoideodonta* Baker ssp. *candicans* (H.Perrier) N.Rebmann **stat.nov.**

-*Aloe deltoideodonta* Baker ssp. *brevifolia* (H.Perrier) N.Rebmann **stat.nov.**

-*Aloe deltoideodonta* Baker ssp. *fallax*. (J.B.Castillon) N.Rebmann **stat.nov.**

-*Aloe deltoideodonta* Baker ssp. *amboahangyensis* N.Rebmann **ssp.nov.**

-*Aloe deltoideodonta* Baker ssp. *esomonyensis* N.Rebmann **ssp.nov.**

Aloe deltoideodonta Baker, Journ. Linn. Soc., 20:271, 1883. Description according to the materiel of Baron, Holotype (K) 752 and Baron 946 (type): "Stemless plant or with a short stem, probably suckering and forming groups. Leaves 12-16, in a dense rosette, erected and spread, lanceolate-deltoid, 10-13cm long, 2,5-3cm wide, probably spotless; continuous, cartilaginous, narrow edges, straw-colour, provided with spines of the same colour, deltoid, 2mm long, distant from 3 to 5mm, inflorescence simple or with 1-2 branches, 40 to 60cm high, peduncle gracile, compressed at base, about 12mm wide, cylindrical upward, cluster rather cylindrical-acuminate and shrinking almost sharp, 15 to 20cm long, with flowers almost densely arranged, the youngest



Aloe deltoideodonta ssp. *candicans*, flowering in April, south of Ankaramena (photo : N. Rebmann).

floral buds suberected, denser and almost hidden by bracts, gradually more laxly arranged downward, bracts lanceolate-deltoid, white, shorter than pedicels, about 10mm long, with 5 veins. The lowest pedicels are 10-12mm long, perianth probably scarlet and cylindrical, approximately 25mm long, obtusely shrunk at the base up to the pedicel; external segments free on approximately 10mm, exserts filaments up to 1mm.”

Perrier de la Bathie, Mémoire Société Linnéenne de Normandie n°4, 1926 proposes 5 varieties:

-*Aloe deltoideodonta* var. *typica*, Baron n°752 and n°946: leaves decumbent and stretched out, 7.5cm long and 2,5cm wide, teeth deltoid 2mm long, very close each other, bracts shorter than pedicels.

-*Aloe deltoideodonta* var. *brevifolia*, Perrier n°12740: very wide leaves (more than 5cm), Almost subrounded, spotted, white teeth, very close each other, deltoid, bracts shorter than pedicels.

-*Aloe deltoideodonta* var. *intermedia*, Perrier n°12690: larger leaves (26x6cm, inflorescence close to the variety *typica*, teeth distant, bracts shorter than pedicels.

-*Aloe deltoideodonta* var. *contigua*, Perrier n°11022, 11022bis, 11019: limb with folded, adjoining, hardly toothed edge, bracts shorter than pedicels.

-*Aloe deltoideodonta* var. *candicans*, Perrier n°13121, 13121 bis, 11026: bracts very larges, pure white, longer than pedicels.

Reynolds, in "Aloe of Madagascar, Malagasy naturalist", volume X, Institut de la recherche scientifique de Madagascar, Tananarive, Tsimbaza 1958 proposes 3 varieties:

-*Aloe deltoideodonta*, Baker, Journal, Linn. Soc., 20:271 (1883).

-*Aloe deltoideodonta* var. *candicans* H. Perrier, Mem. Soc. Linn. Norm.1(1)25, 1926: differs from the type by much larger leaves, shorter and more conical clusters, pure white bracts, longer and wider, mostly longer than pedicels..

-*Aloe deltoideodonta* var. *brevifolia*. H.Perrier, Mem. Soc. Linn. Norm.1(1)24: leaves at least 50mm wide, inflorescence simple 30cm high, in cylindrical cluster, 6 to 10cm long, flowers laxly disposed, with thin, white bracts 10mm long, 4mm wide, pedicels about 12 mm long, perianth 22mm long.

He considers subspecies *contigua* and *intermedia* as separate species because they present characters too different from the type species: (*A. contigua* (H. Perr.) Reynolds, *A. intermedia* (H. Perr.) Reynolds.

Castillon, 2006, "Deux nouveaux taxa dans le genre Aloe à Madagascar", Succulentes (1) 17-23, describes a new variety, one more of the 3 recognized by Reynolds:

Aloe deltoideodonta var. *fallax* which differs from the type essentially for the leaves finely and distinctly lineolate, lively green to yellowish.



Aloe deltoideodonta ssp. *brevifolia*, form with white spots, Bezaha (photo : N. Rebmann).



Aloe deltoideodonta ssp. *fallax*, detail of a rosette showing lineolate leaves, south of Ambalavao. (photo : N. Rebmann).

The status of *Aloe deltoideodonta* Baker ssp. *deltoideodonta*: the description realized by Baker is based on two samples collected by Baron and received at Kew in 1881-1882. The precise location for collection is never indicated, only the mention «Central Madagascar» appears on the herbarium sheet. It is likely that this plant was collected in the Betsileo country (Baron lived in Fianarantsoa).

Aloe deltoideodonta Baker ssp. *candicans* (H.Perrier) N. Rebmann stat. nov., grows in Betsileo Country, from northwest of Fianarantsoa to Zazafotsy (in large number near Ankaramena) and at the base of the massif of Andringitra (both North and South).

Aloe deltoideodonta Baker ssp. *brevifolia* (H.Perrier) N. Rebmann stat.nov. is a plant very close to the type species, but with a floral stake 30cm high and inflorescences 6-10cm long. This subspecies grows between Bezaha and Benenitra on bare cliffs with *Pachypodium rosulatum* ssp. *gracilis* and *Euphorbia isaloensis*.

Aloe deltoideodonta Baker ssp. *fallax* (J.B.Castillon) N. Rebmann stat.nov. is a plant which differs from the typical species, essentially for the leaves finely and distinctly lineolate, lively green to yellowish. This plant proliferates abundantly (15 to 20 rosettes), like all subspecies of *Aloe deltoideodonta*. It grows near Ambalavao and can be confused with *Aloe ibitiensis* confined on the massif of Ibity and produces few shoots.

ssp.	Leaves	Bracts	Inflorescence	Pedicel	Flowers
<i>deltoideodonta</i>	erected to spread 10-13cm L. 2,5-3cm l.	white + shorter than pedicels 10mm L.	simple o 1-2 branches 40-60cm	10-12mm	25mm
<i>candicans</i>	ascending tightened lanceolate 15-20cm L. 5-6cm l.	scarious white + longer than pedicels 75mm L.	simple or 1-2 branch 35-50cm	12-16mm	25-30mm
<i>brevifolia</i>	erected to spread 10cm L. 5cm l.	blanches shorter than pedicels 12mm L.	simple 30cm	12mm	22-25mm
<i>fallax</i>	ascending to spread 2.5X Longer than larger	not	clarified	by	the author
<i>amboahangyensis</i>	spread to recurved 8-12cm L. 3-3.5cm l.	papyraceous white shorter than pedicels 5-7mm L.	simple or branched 50-60cm	13-14mm	20mm
<i>esomonyensis</i>	erected to spread 12-13cm L. 3,5-4,2cm l.	papyraceous white shorter than pedicels 7-10mm L.	simple or branched 50-60cm	12-15mm	25mm



Aloe deltoideodonta ssp. *amboahangyensis*, Amboahangy & detail of inflorescence (photos : N. Rebmann).

-Aloe deltoideodonta Baker ssp. *amboahangyensis* N. Rebmann **ssp.nov.**

Type: Norbert Rebmann, n°17, 1st of September, 2003, (Holotype BR).

Acaulis planta, prolifica, producens multas rosulas, rupicola, folia erecta ad recurvata, 8-12cm longa, tenuiter lineolata, tecta cum subcaerulea pruina . Spica floralis 50 - 60 cm alta, inflorescentia botryoides 10 -15 cm longa, aurantiacae flores 20 mm longae, pedicelli 13-14 mm, et bracteae papyraceae 5 -7 mm.

Type locality: granitic cliffs North of Amboahangy, 320m in altitude, Madagascar.

This subspecies grows North of Amboahangy on granitic outcrops with *Kalanchoe*



bracteata, *K. aff. millotii*, *Pachypodium horombense* and *P. lamerei* in the surroundings.

Description: plant stemless, proliferating, with many rosettes (20-25) 16cm to 20cm in diameter each. Each rosette has 6 to 9 leaves 8cm to 12cm long and 3cm to 3,5cm wide at the base. Leaves are erected and spread or recurved, thin tips, finely lineolate, green-pale to yellowish, covered with a bluish pruine, with small numerous and very small, deltoid teeth, becoming blurred in the third superior of the leaf, upper face convex, inner face canaliculate. Each rosette gives a single floral stake 50 to 60cm high, branched out or not.

Aloe deltoideodonta ssp. *amboahangyensis*, Amboahangy, a rosette flowering in August (photo : N. Rebmann).

white bracts 5-7mm long and 3mm wide. Pedicels 13mm to 14mm long. The fruit is a dehiscent capsule. Flowering occurs in August.

-Aloe deltoideodonta Baker ssp. *esomyensis* N. Rebmann ssp. nov.

Type: Norbert Rebmann, n°16, 30th of August, 2003, (Holotype BR).

Type locality: granitic cliffs West of Esomy, 450m in altitude, Madagascar.



Aloe deltoideodonta ssp. *esomyensis*, rosette with stalk, Esomy (photo : N. Rebmann).

canaliculate, pale-green, washed with red, finely lineolate, many small, deltoid, whitish teeth on edge. The population is variable; in some rosettes, leaves have elongated, white spots on both faces, whereas other rosettes totally lack it. Each rosette gives one or two floral stakes, branched out three times or not, from the middle of the stem. The floral stake is 60cm long. The inflorescence grows in cluster, 15cm long, with many flowers 2,5cm long, with tepals orangy coloured with whitish tips, pedicels 12-15mm, bracts papyraceous, white, 7-10mm long and 3mm wide. The flowering takes place from July to the beginning of August.

Planta prolifica, acaulis, rupicola, folia erecta ad explicatas, pallidovirides, variata cum rubre, cum vel sine subalbae maculae. Una vel duae spicae florales, fissae necne fissae 60 cm altae, inflorescentia botryoides, 15 cm longa, cum aurantiacis floribus, pedicelli 12- 15 mm, papyraceae bracteae 7 -10 mm longae.

This subspecies grows on granitic rocky hills, West of Esomy with *Pachypodium rosulatum* ssp. *cactipes*, *Stapelianthus decaryi*, *Kalanchoe bracteata* and *Euphorbia* aff. *milii*.

Description: plant stemless, proliferating, with many rosettes (20-25) 25-28cm in diameter. Each rosette has 12 or 13 leaves 12-13cm long and 3,5-4,2cm wide. Leaves erected to spread, upper face convex, inner face slightly

Text and photos: Norbert Rebmann



Aloe deltoideodonta ssp. *esomonyensis*, Esomony (photo : N. Rebmann).



Aloe deltoideodonta ssp. *esomonyensis*, rosette without white spots, Esomony (photo : N. Rebmann).

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