



# Description of two new taxa in the *genus Aloe* (*Asphodelaceae*) from Madagascar

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

1) *Aloe capitata* Baker var. *angavoana*, a new variety of the high plateaus.

## Introduction

In 1995, at approximately 7 km North of Ankazobe, a village situated on the road to Mahajanga, a little more than 100 km North of Antananarivo, I photographed young plants of *Aloe*, the margins of the more-or-less parallel leaves intrigued me a lot. Some specimens were in flowers and it was a question answered without the slightest doubt, with the very variable length of pedicels and capitate clusters that this plant belonged to the *Aloe capitata* group; I thought then of a known variety, plants having been found near the main axis Tananarive-Majunga. I had measurements: length and diameter of the cluster; shape and length of flowers, in brief, all which would have been able to be of use to compared with the variety described as *A. capitata*. Having found nothing very significant except some differences in flowers and of general appearance of the plant, I thought it was *A. capitata* var. *gneissicola* H. Perrier which I did not know yet. Then, I did not investigate more!

Some years later, Jean-Bernard Castillon decided to list and to photograph Malagasy plants which he considered deserving of horticultural interest, in particular succulent plants and pachycaul plants. His investigations brought him to look for *A. capitata* var *gneissicola* and for it, on the tracks of H. Perrier, to investigate the region of Mahatsinjo on Tampoketsa of Ankazobe where he was able to take a rather big number of photos of *Aloe* which he did not know but suspected of being the plant in question.

The attentive examination of the photos of these 2 plants [Ankazobe; Mahatsinjo] brings

me to the conclusion that they are 2 different *Aloe*. The plant photographed towards Mahatsinjo is in fact *A. capitata* var. *gneissicola* and the other one represents a new variety, very different and not previously described

***Aloe capitata* Baker, var. *angavoana*, J-P Castillon, var. nov.**

Racemo capitato, *A. capitata* var. *gneissicola* affinis est sed, juvenilibus foliis prope loriformibus, adultarum plantarum foliis coerulesco-rubidis, spinas rubidas ferentibus, angustis et basi maxime 4 cm latis cum marginibus paene parallelis in dimidia inferiore parte, racemo dense florente, praecipue discriminatur.

**Locus typicus:** In regione nominata "Tampoketsa d'Ankazobe", apud pagum Ankazobe, alt 1500m.

**Typus:** J-B Castillon N° 34, 4 Maio 2007, (Holo, TAN); (Iso, HBG).

**Etyymology:** from the name of Angavo mountains near Ankazobe.

**Description:** *Aloe* appearing under two rather different forms: a dwarfish shape (that we have to consider as a young plant), stemless or mostly caulescent, with stem 2-4cm thick and 10-15cm long, with about 10-15 leaves 15cm long with more or less parallel margins, blue-reddish colour and a much sturdier shape with 20-30 leaves, mostly 35cm long, stemless or caulescent, both forms being flower-bearing. Leaves 3-4cm wide at the base, widening a little higher to achieve 5cm then **narrowing** gradually up to the apex, 12mm wide, rounded with 4-5 small red spines very close together; superior face slightly convex to flat, blue reddish-green, spotless nor ornamentation; lower face convex same colour; margin with red spines 1-2mm, close together at the base then spaced out of 10mm.

Floral stalk 60-70cm long in 2-3 clusters; Main peduncle 35cm long, convex at the base; 4-10 sterile bracts at secondary peduncle, whitish, with 8-10 nerves, 5-7mm wide at the base and 7mm high; rachis 2-4cm long. Numerous flowers on each cluster (60-100); floral bracts whitish, scarious, 8-10mm high and 3-6mm wide; pedicels of the bottom flowers 8-20mm, those of top 30mm, pink colour; perianth yellow, 30-35mm long, cylindrical-campanulate; external tepals rounded at the apex, 30×3mm, light yellow, coherent towards the base but free; inner tepals whitish-cream, free, slightly wider (5mm towards the apex, more rounded, with a dark yellow dorsal nervure; style and filaments yellow; anthers 3x1mm, at first 1-6mm exerted then included; stigmas at first inclusive then exerted, 10-12mm; ovary conical, green, truncated towards the top, 6mm high and 3mm in diameter at the base. Fruit is a capsule.

**Discussion:** in [13], a H. Perrier de La Bathie described in 1926 some varieties of *Aloe capitata*, in particular the variety *gneissicola* the Type 662 of which is in Paris; the characters differentiating this variety of the type species are in the following lines written by Perrier: «**Always stemless**, in less numerous, more narrow leaves, a little shrunk on the



01 Young plant of *Aloe capitata* var. *angavoana*  
(photo : J.P. Castillon).



02 Young plant of *Aloe capitata* var. *gneissicola*  
(photo : J.P. Castillon).



03 Mature plant of *Aloe capitata* var. *angavoana*  
(photo : J.P. Castillon).



04 Mature plant of *Aloe capitata* var. *gneissicola*  
(photo : J.P. Castillon).



07 Cluster of *A. capitata* var. *angavoana* (photo : J.P.  
Castillon).



08 Cluster of *A. capitata* var. *gneissicola* (photo : J.P.  
Castillon).

base, a little bent to falcate, very often glaucous, **with** wide, white and much more distant **spines**, with longer bracts 6x3mm, 6-nerved, **stalk pauciflorous (16-20) flowers**, pedicels being never long than the perianth, which is very long and measures up to 33-35mm long. This variety grows in the mountains at foothills N.W of the central plateau and is very widespread; N 662: granitic cliffs neighborhood of Andriba, 600m in alt. (Western region). I also observed it, at Mahatsinjo (n°13499 ), at Tampoketsa of Ankazobe, towards 1000m in alt., Central region (**where spines are yellowish**, and the **limb, very glaucous**); At Mahajamba (N° 13500), in the neighborhood of Tsaratanana, Western region, where bracts achieve 12mm long and some perianths which are shorter than their pedicels, and at Bemarivo, left tributary river of the Sofia, in the same region » to resume in [16] the *Aloe* of Madagascar study, G.W. Reynolds would have given a more detailed description of the *Aloe capitata* varieties. Although he indicated, speaking about *A. capitata* var *gneissicola*: « I found this variety plentiful at Tampoketsa, on rock in thick soil, 65km North of

Ankazobe (38km South of Mahatsinjo ), approximately 17°53S, 47°05E, 1440m in alt, also on rock 3km South of Mahatsinjo (at km 199 of Tananarive), at 1080m in altitude.



*Aloe capitata* var. *angavoana* with fruits.  
(photo : J.P. Castillon).

The description which follows was completed when plants harvested near Mahatsinjo bloomed in Johannesburg afterward », the description which he gives is not in accordance with the protologue of Perrier concerning this variety; in particular in his description, he asserts: « Both faces green grey to glaucous, with a reddish tinge ... edges provided with **deltoid** prickly **spines**, **reddish brown** ... **cluster densely capitata** »; he does not clarify on the other hand if leaves «are a **little bent to clavate**» and if « **the plant**



*Aloe capitata* var. *gneissicola* with clusters, habitat, Madagascar.(photo : J.P. Castillon).

has a stem »; this contradicts the observations of Perrier.

The photos which follows, taken in situ, near Mahatsinjo and near Ankazobe, will be enough, I hope, to show the error of Reynolds; in fact, Reynolds, believing he was collecting young plants of *A. capitata* var. *gneissicola* collected in fact plants of the other variety, harvested probably far enough from Mahatsinjo: the photography, Fig 59 [ 16 ] (Fig 489 [ 17 ]) thus does not correspond to the *gneissicola* variety but to the new variety which I described above. The young plants of both varieties are different.

Again, I have to say that the strong plants of *A. capitata* var *gneissicola* sometimes remind those of *A. macroclada*, that the locations of both varieties are distant about 50km and that the dwarfish shape of the variety *angavoana* is essentially on isolated rocks or in rocky places rather dry widespread in the lateritic unlimitednesses, covered with Poaceae and other Cyperaceae of the big plateau Tampoketsa of Ankazobe; the larger form exists rather in the massif of Angavo or on loamier and wetter rocks and we notice that the long leaves seem rather loriform {to See the Figure 59 [ 16 ] (Fig 489 [ 17 ])}, which is not the case of the *gneissicola* variety; I also noted that the clusters of the *gneissicola* variety are little decorated with flowers (stalk **pauciflorous, 16-20 flowers**, according to Perrier) but plants with 50-60 flowers in one cluster can be found (against 60-100 for the *angavoana* variety); Contrary to what happens with the variety *angavoana*, the young plants of the *gneissicola* variety never bloom.

## 2) *Aloe rapanarivoi*, a new species of the centre-North.

### Introduction

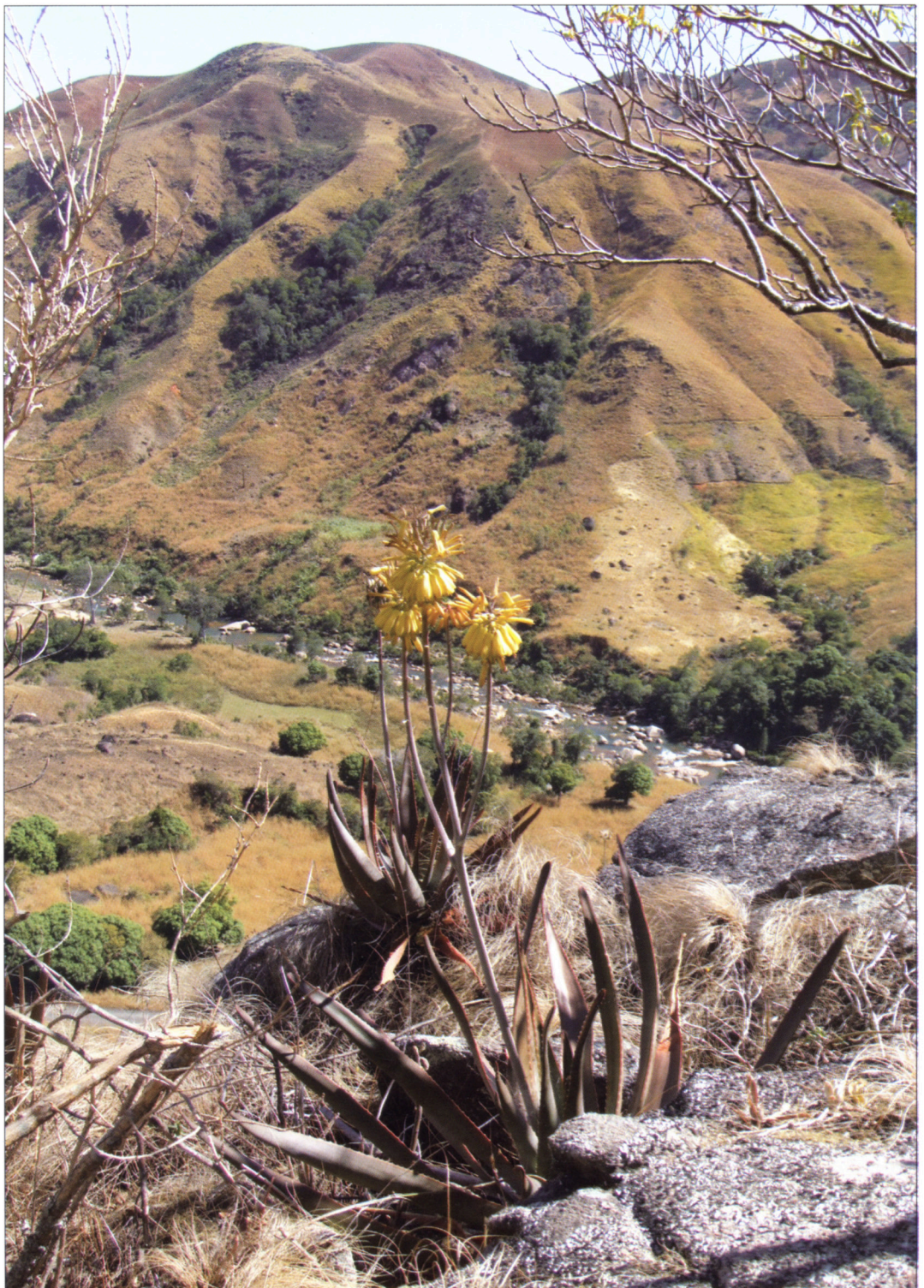
After Mahatsinjo, on the road towards Mahajanga, we left “tampoketsa” (high trays) to come down again towards warm and dry plains, populated with grasses, mangoes and palm trees “satrana” (*Bismarkia nobilis*). Little biodiversity, few *Aloe* in such regions: some species of the group *Lomatophyllum* hide in the rare forests still remaining [*A. prostrata* in the Limestone plateaus of Ankara and Kelifely on the West of Maevatanana, *A. socialis* in the forests of the centre (Analamaitso-Bemarivo), *A. occidentalis* in Ankarafantsika and almost everywhere between Majunga and Ambanja], and on rock massifs near the main road, we meet only *A. capitata* var *gneissicola*. If we pursue the road towards Diégo-Suarez, after Port-Bergé, we find two species: *A. bulbifera* and *A. deinacantha* [10], a particular form of *A. divaricata* recently described. All the area east of this road, to the forests of the oriental coast, is much underestimated, because of the absence of roads in this region of low mountain ranges. In the direction of Mandritsara, J. Bosser described *A. ericetorum* in 1968 – *Aloe* of the group of *A. capitata* but which differs from it sharply for its form – but it makes only one species on a surface of about 100 x 300km! (Or 3 species if we add *A. socialis* and *A. bulbifera* from the forest of Analamaitso). It is indeed very little for such a vast dry and mountainous region!

In this big “rectangle”, more exactly in the hills east of Antsohihy that was found a rather



*Aloe rapanarivoi* in habitat, Madagascar (photo : J.P. Castillon).

*Aloe rapanarivoi* in habitat, Madagascar (photo : J.P. Castillon).



*Aloe rapanarivoi* flowering, habitat, Madagascar (photo : J.P. Castillon).



Yellow flowers of *Aloe rapanarivoi* (photo : J.P. Castillon).

Red flowers of *Aloe rapanarivoi* (photo : J.P. Castillon).

singular form of *A. capitata*. It is different from all the known varieties and deserves to my opinion the status of new species. It is described below.

***Aloe rapanarivoi*, J-P Castillon, Species nova.**

Racemis *A. capitata* var. *gneissicola* affinis est sed : habitu dissimile ; foliis rectoribus et non falcatis, tenuioribus longioribusque ; inflorescentiis longioribus et numerosiores ramos gerentibus ; floris habitu coloreque dissimilibus, floribus paulum cylindratis conicisque et potius clavatis non campanulatis praecipue distinguitur.

**Locus typicus :** In montibus circum pagum Antsahabe, ab urbe Antsohiy 50km septentrionalius remotis, in itinere ad Bealanana urbem ; alt : 500-800m.

**Typus :** J-B Castillon, N° 39, 30 Augusti mensis 2007 ; (Holo, TAN ) .

**Etymology:** this *Aloe* is dedicated to S.H.J Rapanarivo head of department flora at the Botanical and zoological Park of Tsimbazaza, in Antananarivo.

**Description:** plant not suckering, with 20-28 leaves, generally stemless but sometimes presenting in woody area, a stem 50×4cm. Triangular, straight leaves, 50× 3-6cm up to 70×10cm, grey blue colour those of the bottom rather spread, the others erected and sometimes folded up inward like a cabbage. Inflorescence 80-110cm long with 6-12 ramifications. Clusters more or less capitate, supplied, in short rachis 2-4cm. Flowers



yellow or pale red, with a flat base or obtusely rounded, 35×10mm, the first ones to open being those of the top; floral bracts scarious, white 5×10mm with 3-5 fine black nervures; pedicels 7-25mm long, according to the position of flowers on the rachis; perianth blown on the base then slightly widened, a little bit cylindrical-trigonous; segments with distal extremities a little folded up inward; free external segments, yellow to reddish; Free inner segments light yellow, with a strong orangey dorsal keel; anthers 5mm long, at first exerted approx. 6mm, then inserted; inserted and finally exerted stigma 6mm; conical, green ovary, 8×4mm. Fruit a capsule.

**Discussion:** this species, although getting close to the *gneissicola* variety of *A. capitata*, sharply differs from it by the following characteristics: the shape is completely different, the triangular leaves are less thick, less curved, more lengthened and with darker colour; the inflorescences are longer and more branched out; the clusters are more rounded like in *A. andringintrensis* Perrier; the colour of flowers varies from yellow lively to the light red, colour which is never found in *A. capitata* and varieties; the slightly cylindrical-trigonous flowers rather clavate and rarely weakly campanulate are also a little bigger and get closer to those of *A. trachyticola* (Perrier) Reynolds, as well as of those of *A. richaudii* Rebmann [18], but this last species is smaller, with more opened rosette and with more hooked leaves.

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