



# Corrections and description of two new taxa in the genus *Aloe* (Asphodelaceae) in Madagascar

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*Aloe massawana* ssp. *sakoankenke*, habitat, Madagascar (Photo : J.B. Castillon).

## Correction of errors

### Introduction

It is not always easy, when we are in a new region which we do not know. especially when we find a plant which seems different from those we know, in asserting whether it is or

not a novelty. It is particularly difficult with the genus *Aloe* (Asphodelaceae), for which, it is known that rather important variations can occur within a species. The consultation of the protologue, if we have no type or photos under our eyes at that moment, can turn out risky, even precarious. I shall quote as examples only two big mistakes of "diagnosis" committed by Dr G.W. Reynolds concerning Malagasy aloes; the first one is *Aloe ibitiensis* Perrier which Reynolds confused with the aloes recently described under the name *A. manandonae* J-B Castillon; the second concerns *A. subacutissima* Rowley [formerly *A. intermedia* (Perrier) Reynolds] for which a new typification and a new name, *A. newtonii* J-B Castillon was supplied. Errors can easily be made and it is necessary to eliminate these as fast as possible, thus avoiding the use of (sometimes) a large number of synonyms. For about fifteen years I have travelled regularly in all of Madagascar in search of new species of *Aloe*, I was confronted in many situations in which my personal knowledge of the local species collided with the botanical descriptions of my predecessors (who were mostly right); most of the time it was due to the fact that I tended to see new species almost everywhere; driving a lot in a 4×4 vehicle on this big island, I eventually had, little by little, an insight which I consider healthier of the situation and I now take an intermediate position. The committed errors have been made for several reasons: an under estimation of the species variability; a tendency to consider that all which grow in Madagascar are endemic, or at least native, and if a plant was not described from such or such a region does not mean it is absent elsewhere. I am going to correct here some mistakes I was able to track down.

1) *A. sakoankenke* Castillon was described in the journal *Haseltonia* 10, 2004, as a new species. In time, an error by the editor presented the plant as a new variety, but this was afterward rectified in the journal of the following year. I had seen this plant for the first time in cultivation near Joffreville some 50km South of Diego-Suarez; I saw it again afterward on cliffs in full sun in the middle of the forest of Ambre, before the village of Joffreville; last year, in search of *Delonix velutina*, a very rare Caesalpiniaceae of the region of Ramena, a beach of preference for the inhabitants of Diego, I had the chance to find clumps in the sandy forests of Sakalava Bay. *Delonix* is still relatively plentiful and the presence of this *Aloe* so far from Joffreville confirmed to me that this plant is rather common in the North of Madagascar. It is grown around Diego, used by the natives as medicinal plant and would have the virtues of *Aloe vera*. Certainly this aloe was introduced to the island by the Arabic traders coming from Zanzibar and oriental coasts of Africa from where the species *A. massawana* is native and which seems to be close. The introduction of this last one on the island being certainly ancient has allowed this *Aloe* time to transform - sturdier plant, inflorescence stronger, with more clusters of slightly different flowers. This makes that the status of subspecies quoted here above more convenient. I thus propose the following status change:

*A. massawana* Reynolds ssp. *sakoankenke* (Castillon) J-B Castillon, **comb nov.**

Basionym: *Aloe sakoankenke* Castillon; types: Castillon in December 10th, 2nd, 2001 (Holo, P), (Iso: P, MB); *Haseltonia* Nr. 10, 2004.





*Aloe fievetii* var *altimatsiatrae*, habitat, Madagascar (Photo : J.B. Castillon).

## 2) *Aloe altimatsiatrae* J-B Castillon.

is a recent description in *Haseltonia* .2 March-April, 2008. This *Aloe* was indicated as a luxuriant form of *A. fievetii* Reynolds; I looked for this last one many times around the village of Andoharanomaitso 30km Southwest of Fianarantsoa where most parts of the very easily accessible cliffs were formerly densely populated with *Aloe haworthioides* var. *aurantiaca*, but are now totally naked for hundreds of metres, and I have never found it there. On the other hand, I found a plant 7km from Fianarantsoa which I named *A. altimatsiatrae*. The study of the *A. fievetii* protologue did not allow me to realise conspecificity of both plants. The description of *A. altimatsiatrae* it is written: "... Looks similar to *Aloe fievetii* (and is probably closely related to it)".

The recent discovery of the type locality of *A. fievetii* brings me to the following consideration: I know both localities of the species and they are about 15km distance from each other; their situations are different, and at the type locality of *A. fievetii* the plants are more exposed to the sun all day long. The other one is a wetter and more protected habitat; from this it ensues that the corresponding plants undergoing a different environment behave in a different way: longer stems with caulescent leaves, green, longer and narrower, longer inflorescences and more offsets for *A. altimatsiatrae*. If these characteristic remained constant, we could say that there are two species but these characters are preserved little on plants grown from seeds and I think that it is better to consider *A. altimatsiatrae* a variety of the other species; so I propose the following new combination:

*Aloe fievetii* Reynolds var. *altimatsiatrae* (J-B Castillon) J-B Castillon, **comb nov.**

Basionym: *Aloe altimatsiatrae* J-B Castillon, sp. nov; Typus: J-B Castillon N 35, 30 April, 2007, (Holo, TAN); *CSJ(US)* **80** (2), March-April, 2008.

Synonym: *Aloe estevei*, N. Rebmann in "Cactus-Adventures International **79**, July, 2008".

### 3) *Aloe philippeii* Castillon

Described in the journal KuaS 56 (10) 2005, this *Aloe* was found in very limited number (fifteen plants approximately) on a limited area of cliff, certainly as a result of the extensive clearing of the last vestiges of dry forests overhanging the canyon of Fiherenana, and was accompanied with no other species. Downwards on the steep cliffs were clumps of *A. viguieri*. Only *Euphorbia parvicyathophora* W Rauh and *gottliebii* E. W Rauh grew side by side in pockets of humus on limestone. The later discovery of *A. acutissima* var. *fiherenensis* J-B Castillon in this region gave me the idea that it is the natural hybrid between this variety and the species *A. viguieri*. I thus propose for *Aloe philippeii* the status of hybrid species: *Aloe* × *philippeii* (Castillon) J-B Castillon, **stat nov.**

Basionym: *Aloe philippeii* Castillon, sp. nov.; Typus: Castillon 16, May, 2004, (Holo: HBG). KuaS 56, 10, 2005.



*Aloe* × *philippeii*, habitat (Photo : J.B. Castillon).



*Aloe acutissima* var *itampoloana*, (Photo : J.B. Castillon).

## New Taxa.

**Important remark:** only the French version of the journal relates the formal description of both taxa.

### 1) Description of a new variety of *Aloe acutissima* Perrier.

*Aloe acutissima* Perrier is one of the most widespread aloes of Madagascar. Its area of distribution goes from the Southwest (region of Antanimora), up to Tuléar and penetrates inland at Fianarantsoa and even a little more East; we find it frequently along the road axis: Ihosy-Betroka-Antanimora. Four varieties are at present known: *Aloe acutissima* var. *acutissima*, the most widespread, typical species, *Aloe acutissima* var. *antanimorensis* which is a reduced form of the previous variety, *Aloe acutissima* var. *fiherenensis* growing on limestone cliffs along the river Fiherenana near Andranovory, *Aloe acutissima* var.



*isaloana*, a huge form growing in the sandstone of the South of the Isalo massif; Another form from the west coast South of Itampolo, that I have known for a long time and which for me was only a variation of the typical variety, has in fact enough different characters - I saw it at two different places - and I think that the status of variety is well convenient for this; a description is made here.

***Aloe acutissima* Perrier var. *itampoloana*, J-B Castillon, **Var. nov.****

**Locus typicus :** In pagi Itampolo meridiana regione, supra calcaria saxa.

**Typus :** J-B Castillon n° 43, mense februario 2005, (Holo, TAN).

**Diagnosis:** *A. acutissima* var. *acutissima* affinis est sed, sequentibus characteribus, praecipue discernitur : foliis brevioribus, latioribus, carnosioribus praesertim basi et dissimile coloratis, plantae habitu erectiore.

**Etymology:** because of its presence in the South of Itampolo.

**Description:** Plants erected, bushy, forming offsets from the base, thick stem of 15mm up to 1m long among which the last 20-30 cm wear leaves. Leaves turquoise blue to light brown, very fleshy, triangular 25-30 × 6cm, slightly shrunk at the base with curved tip, all around the stem; very visible green or gray nerves on the girdle; margin with cartilaginous thorns with red folded end 2×2mm, spaced out rather regularly of 10mm. Inflorescence 9mm thick, turquoise blue at the base, 1-2 branches, erected; cluster pink; main length 80cm, secondary peduncle 40cm long; bract scarious 25×10mm at the base of branches, then 3-4 sterile, fleshy bracts, brown, becoming white scarious ribbed by drying; long main cluster of 30-40cm, the other long of 15-25cm; A little bit cowardly?????, acuminate cluster bearing 50-100 flowers. Perianth 30mm, rather cylindrical, blown at the base (5mm then shrunk (4mm and widening towards the throat, slightly curved, pinkish-red; floral bracts 20×5mm, covering completely the young flower buds, covering completely the pedicels of the opened flowers, brown at first, becoming scarious with brown nerves when drying; pedicels 10mm long, curved, pink; external segments welded on half base, red with white tip and with brown central nervure; free, inner segments white, wearing a strongly marked pink central hull, welded partially in the outer segments; filaments white with olive green tip; ovary 6×2mm, cylindrical to trigone, olive green. Fruit, a capsule.

### Comments

The colour of the leaves which are also shorter and wider, their excessively fleshy character especially at the base as well as the erected shape of the plant differentiate this variety from the type species from the neighborhood of Ambalavao, which grows on quartzite cliffs some 400km further northeast. A character of this variety is the fact that its juice is not bitter, the other varieties being just a little; the species which Reynolds had placed in the group 8 of his magnificent work, the former name of which was *A. subacutissima* Rowley and which vegetatively gets closer enough to *Aloe acutissima*, has on the other hand an excessively bitter juice. The Mahafaly plateau, mainly calcareous, which extends from Tulear to the grand plateau of Karimbola South of the island represents a surface of at least 12 500 km<sup>2</sup>; this new variety grows on calcareous cliffs (small Tsingy) of this plateau, south of Itampolo. Until now, only the following species were listed there: *A. antandroi* ( Decary ) Perrier, *A. castilloniae* J-B Castillon, *A.*

*divaricata* Herdsman, *A. suzannae* Decary, *A. vaombe* Decorse and Poisson. The discovery and the description of this new variety in this huge area (variety certainly seen by many botanists and amateurs) comes just in time and so widen the distribution area of the species *A. acutissima*.

## 2) Description of a new subspecies of *Aloe antandroi* (Decary) Perrier.

*Gasteria antandroi* described by R. Decary then was transformed into *Aloe antandroi* by Perrier. Reynolds rectified the small mistake of Perrier and gave the definitive writing which we know. This small plant with a lianoid habit is found near Ambovombe, Tsihombe, Beloha, in limestone South of the plateau Mahafaly; it was even indicated near the neighborhood of the Cape Sainte-Marie but I did not find it there. The type sample of Decary, which is that of *Gasteria antandroi*, dates September 12th, 1918 and does not have a number or the precise locality given, but knowing that Decary described other plants coming from the South, everything points to the fact that his type comes from the South Mahafaly or the neighborhood of Tsihombe. When we looked at the herbarium samples list relative to this plant, which is in Paris, we notice that this questioned *Aloe* can be found from the extreme South up to Tulear. Now, a meticulous study, in situ, of plants coming from Tulear and those from the South of plateau Mahafaly shows differences, obviously significant enough so we can consider the plants of the surroundings of Tulear to belong to a subspecies different from the Decary's type species. This is described here.

*Aloe antandroi* ssp. *toliarana*, J-B Castillon, **ssp. nov.**

**Locus typicus :** *La Table apud Toliara urbem ; vicina urbi Ambohimahavelona loca ; regione circum sinum maritimum "St Augustin".*

**Typus :** Reynolds 7857, 9/7/1955, ( Holo, P).

**Diagnosis :** *A. antandroi affinis sed sequentibus characteribus praecipue differt : planta quatuor surculos maxime emittente ; foliis et caulibus tenuioribus ; foliis presentibus unice in ultima parte caulis ; caule emittente surculos solum ad basem ; floris colore dissimile.*

The main differences between both subspecies are given in the following table:

| Taxon                                       | Leaves   | Stems   | Flowers and Shape                                     |
|---|--|---|---|
| <i>Aloe antandroi</i>                       | Caulicent, arranged on all the stem, in more important number, up to 25; often larger.           | Longer and emitting many offsets, not only at the base but also higher, to the middle of the stem.. 2m L., 5cm in diam. | Flowers red scarlet. Big clumps of hundreds of plants |
| <i>Aloe antandroi</i> ssp. <i>toliarana</i> | Caulicent arranged only at the top of the stem, about 5-7, on the last 5-8cms; finer and longer. | Emitting offsets only at the base and in very limited number: 2-5; thinner.   | Flowers purplish red. Very small clumps.              |





*Aloe antandroi* (Photo : J.B. Castillon).



*Aloe antandroi* ssp. *toliarana*  
(Photo : J.B. Castillon).

## Comments

It is necessary to indicate that in cultivation and from seed, these different characters remain and as a consequence both forms are well stabilized. It is the repeated sight of these groups of Aloe in habitat which eventually convinced me that it was necessary to separate both types of plants, although my son who travelled a lot on motorcycle in these regions drew the attention to me about this for a long time.

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