

TRANSACTIONS
OF THE
LINNEAN SOCIETY.

I. *A new Arrangement of the Genus Aloe, with a chronological Sketch of the progressive Knowledge of that Genus, and of other succulent Genera.* By Adrian Hardy Haworth, Esq. F.L.S.

Read December 1, 1801.

THE genus *Aloe* is composed almost entirely of African plants, which are not less remarkable for their succulent and strange-shaped leaves, than for the very stately and magnificent flowers with which the species of the section *Grandifloræ* in the following arrangement, in particular, are annually adorned. It must however be confessed, that there is the least possible variety, either in the natural structure and position of those flowers, or in their colour, which in every species of that section (except *barbadensis*), and in every species of my section *Curvifloræ*, is of a lovely coral hue, often ending in highly softened shades of yellow and green. Dillenius bestows very great praise upon his *Aloe mitræformis*: he says, (*Hort. Elth.* p. 21.) “Inter numerosas, quas Hortus Elthamensis alit, Aloes species, lætissime viget elegans hæc species, et singulis fere annis copiosa florum corona superbit.” Towards the close of this account he adds, “Odor floribus nullus, sed color et dispositio elegans, et tota planta venusta.”

The species in my section *Parvifloræ* have small unhandsome flowers; those of *A. reticulata*, indeed, may be excepted, which are pretty, and of a rosy-white colour, spangling to the sun; not very distantly resembling those of *Hyacinthus orientalis*. The pearly and odd-constructed forms, however, so frequently found in this division, abundantly compensate for their trifling blossoms. Their beauties are equal to others which are always in bloom.

Bradley, speaking of them in his *Dictionarium Botanicum*, says, "I don't know of any tribe of plants which afford a more pleasing variety than these, for the odd shape of their leaves and manner of spotting, and being some of them covered as it were with pearls."

Yet in spite of all these attractive recommendations and encomia, the whole genus, from a chain of occurrences very difficult to account for, has never been properly investigated or cherished, either by the botanists or horticulturists of our times; consequently, the numerous species which compose it are but little cultivated, and still less understood.

The probable reasons of this are, first, a somewhat natural propensity in several of the species to vary; and secondly, a predominant, but I believe an erroneous, idea, that few of them are truly and originally distinct; but fluctuating and inconstant if raised from seed.

This belief, so far as concerns two species, as likely as any others to vary from seed, I can practically contradict; having myself raised *A. margaritifera minima* and *A. Lingua angustifolia* from seed of my own saving, and found no variation whatever from the mother plants. A cause exists, of greater weight, in my opinion, than both the above mentioned, which prevents the botanist, unless he is likewise an horticulturist, from acquiring a competent knowledge of Aloes, and of all other succulent plants: I mean

mean the utter impracticability of their ever appearing in a *hortus siccus*; at least in any cognizable shape.

Impressed with these sensations, and a natural early-planted love of the succulent department of botany, and of gardening in all its branches, I have long collected and cultivated, and with unremitting assiduity still continue to collect and cultivate, all the Aloes and other succulent plants which it is possible to procure. Fifteen years ago with ardour I commenced the pleasing task; and the observations I have now the satisfaction of submitting to the Linnean Society, I give as the result of all the experience I have acquired on this subject from that period to the present time.

In the beginning and middle of the late century, when the management of green-house and hot-house plants was in its infancy; when collections of exotics were neither so numerous nor so extensive as at present; not only succulent plants in general, but those of the genus *Aloe* in particular, were held in the highest repute, both in Britain and on the continent, but more especially in Holland.

This arose partly from the smallness of the collections of those times, and partly from the well-known facility with which plants of this description are usually managed and kept. Besides, the strange and impressive forms assumed by them (so widely different from the other branches of the vegetable kingdom) at those periods, from the circumstance of novelty alone, attracted the attention of botanists and gardeners more than they can now be expected to do. That indeed was the golden age of the succulent plants. In this country, Bradley, by his well known *Decades*; and Dillenius, who with matchless skill exhausted the subject as far as then known; and Miller, by his celebrated *Dictionary*, incorporating with unusual facility all their knowledge with his own, and with

that of Ray, Petiver, and Plukenet, extended the history of succulent plants to a far greater degree than it had before arrived at.

On the continent also, particularly in Holland, the subject had rapidly advanced; and multitudes of species had been collected and cherished, and many of them figured and described by Muntingius, in his *Aloidarium*; by Breynius, Burman, and Boerhaave; by the two Commelines, father and son; and by Volckamer, Tilli, Herman, and others.

Yet, notwithstanding the force of such bright examples as these, the whole subject, for more than half a century, has not by any means kept pace with the other departments of botany, but has been almost entirely neglected; no work on succulent plants, exclusively, having appeared during all that time, nor any other publication which has much advanced our knowledge of them, except, indeed, the *Hortus Kewensis* of the late Mr. Aiton, and my own *Observations on the Genus Mesembryanthemum*; in which, after regretting my inability to figure the numerous species of that genus, I recollect expressing an anxious wish, that some other person more able than myself would take up the business, and do so.

At length I have the happiness to say, that this wish has been more than complied with in France, by the authors of a periodical work now publishing in Paris under the title of *Plantes Grasses*, who appear to have undertaken the figuring not only of this my favourite genus, but of all other succulent genera. An impartial account of some errors attending those figures and their accompanying descriptions I have already had the honour of laying before the Linnean Society.

I shall conclude this preface with observing, that the Aloes, like all other intricate or extensive families of plants, require sections and subdivisions to render the investigation of their component

nent species certain and easy ; and although this has not hitherto been attempted by any one, yet it is much to be wondered that it has not, from the uniformity so remarkable in the structure of their flowers. This I have noticed above ; and it did not completely escape the keen eye of Linnæus, although he did not make that use of it which I am about to do. What are sections in my arrangement were little more than species with him. Speaking of his *Aloe pumila*, which includes three species and two varieties, he says, “ Flores, in hoc genere certissimi indices, conjungunt margaritifera et arachnoidea.”

The extensive value of this decisive criterion, as important for a section as it is fallacious for a species, I with pleasure beheld in the living plants, long before I ever saw the remark itself.

On this natural and obvious principle all my sections and subdivisions are founded ; and I have the satisfaction of asserting, that they are at once absolute and easy ; which all good sections ought to be. Otherwise, instead of facilitating that examination they are intended for, they have an evident tendency to perplex and obstruct it.

That this paper, already too long, may not be further swelled in an unnecessary manner, I shall avoid detailed descriptions, and give but a few synonyma to each described species and variety ; but they shall be the best in my possession, and all very carefully examined.

The species and varieties which I have not referred to Professor Willdenow's edition of *Species Plantarum*, now publishing, are not enumerated in that work ; and those which have not hitherto had specific names I have marked with an asterisk.

All the species and varieties which I have described are at this present time alive in my own collection, except only *A. aspera* and *striata*, and those of the Appendix. For several of the new sorts,
and

and for much valuable and liberal information concerning the old ones, I am under great obligations to my good and much respected friend Mr. Aiton, of Kew, to whom my best thanks and best wishes, on this occasion, are but a trifling and inadequate reward.

The *loci natales*, or *habitats* as they are usually, but perhaps inaccurately called, of the new species, and the names of their introducers into the British gardens, I have carefully given, under their proper heads, as far as I am acquainted with them.

Little Chelsea,
November 1801.

SYNOPSIS SPECIERUM.

ALOE.

* PARVIFLORÆ. *Corollis plerumque virescentibus, laciniis sæpius revolutis.*

† Rigidæ, *plerumque caulescentes, foliis rigidissimis integris.*

viscosa.
1 ALOE foliis trifariis ovatis acutis perviridibus minime tuberculatis, caule stricto.

A. *viscosa.* Willd. *Sp. Pl.* 2. 191. excluso synonymo et icone Tillii.

A. *africana erecta triangularis et viscosa.* Comm. *Prael.* f. 31.

A. *africana, &c.* Dill. *Elth. t.* 13. f. 13.

A. *viscosa.* *Plantes Grasses*, p. 16, cum icone.

* *aspera.*
2 ALOE foliis trifariis orbiculato-ovatis acuminatis viridibus; supra subconcavis; subtus valde tuberculatis, caule stricto.

Habitat ad Cap. Bon. Sp. D. Masson.

Obs. This species is of difficult culture, and probably will not long remain alive in Europe.

* *foliolosa*. *ALOE* foliis multifariis brevissimis orbiculato-ovatis lævigatis horizontalibus læte-viridibus, caule stricto.

³ Habitat ad Cap. Bon. Sp. *D. Masson*.

Obs. This is the least-leaved of all the Aloes; the leaves are at the same time the thinnest, the most numerous, and most crowded.

imbricata. *ALOE* foliis multifariis erectiusculis lævigatis immaculatis, caule stricto.

⁴ *A. spiralis* α . *imbricata*. *Willd. Sp. Pl.* 2. 191. *Ait. Kew.* 1. 471.

A. africana erecta rotunda, folio acuminato. *Comm. Præl. t.* 32.

A. africana, &c. *Dill. Elth. t.* 13. *f.* 14.

A. spiralis. *Plantes Grasses*, p. 55, cum icone.

* *tortuosa*. *ALOE* foliis spiraliter trifariis patulis nigricantibus; externe minime tuberculatis, caule valde tortuoso.

⁵ Habitat ad Cap. Bon. Sp. *D. Lewis*.

pentagona. *ALOE* foliis quinquefariis patentibus glabris viridibus; subtus obsolete maculatis, caule rectiusculo rarissime subtortuoso.

⁶ *A. spiralis* β . *pentagona*. *Willd. Sp. Pl.* 2. 191. *Ait. Kew.* 1. 471.

* *spiralis*. *ALOE* foliis spiraliter quinquefariis patentibus glabris viridibus; subtus obsolete maculatis, caule valde tortuoso.

Obs. This species has not yet been in any collection but my own: it is very much like *A. pentagona*, but somewhat larger: the plant is so much twisted as to make the position of the leaves seem multifarious: in *pentagona* they are usually in five regular angles.

* *expansa*.

- * *expansa*. ALOE subacaulis, foliis multifariis viridibus immacu-
 8 latis; junioribus patulis; senioribus horizontalibus
 rugosiusculis.

Obs. This species is exceedingly like the *Aloe rigida* of the *Plantes Grasses*, p. 62; yet I can hardly suppose they are the same: the leaves of *rigida* seem more erect.

* *major*. β. paulo major.

Habitat ad Cap. Bon. Sp. D. *Malcolm*.

- * *albicans*. ALOE acaulis, foliis multifariis lævigatis mucronatis
 9 albicantibus: marginibus carinaque cartilagineis.
 A. africana humilis, folio triangulari rigido albicante.
Comm. Præl. t. 30.

A. africana folio glabro et rigidissimo flore subviridi.

Comm. Hort. Amst. pars altera, t. 7?

Habitat ad Cap. Bon. Sp. D. *Masson*.

Obs. This is the largest-leaved species, and by far the finest of this section: its stemless habit approximates it to the next subdivision; from which, however, it is excluded by the extreme rigidity of its leaves.

†† Acaules, foliis mollioribus integris radicalibus.

- * *cymbiformis*. ALOE foliis multifariis cymbiformibus obtusis mu-
 10 cronatis glaucis; supra valde concavis: apicibus
 carinatis obsolete reticulatis.

Habitat ad Cap. Bon. Sp. D. *Masson*.

Obs. This odd species has very much the air of a *Sempervivum*; its excavated leaves communicate a strange appearance to it: it produces offsets amazingly.

* *reticulata*.

* *reticulata*. *ALOE* foliis multifariis æquilateri-triquetris obtusiusculis glaucescentibus reticulatis; supra subconcavis.

11

Obs. This is a pretty species, and perhaps the smallest of all: its appearance, as well as size, very much resembles the lesser species of *Sempervivum*.

retusa. *ALOE* foliis quinquefariis retuso-deltoides pallide viridibus; apice perviridibus; supra lineatis.

12

A. retusa. *Willd. Sp. Pl.* 2. 191. *Plantes Grasses*, p. 45, cum icone. *Curt. Bot. Mag.* 455.

A. africana, brevissimo crassissimoque folio, flore subviridi. *Comm. Hort. Amst.* 2. t. 6.

A. africana, brevissimo crassissimoque folio, flore candido. *Till. Pis.* t. 5.

Obs. There is an icon of this very odd species without flowers in the frontispiece to *Blair's Botanic Essays*, between the two *Stapelias*.

††† *Ciliatæ*, foliis ciliato-spinosis radicalibus.

* *mirabilis*. *ALOE* foliis quinquefariis retuso-deltoides cuspidatis: marginibus carinaque ciliato-spinosis; supra glabriusculis; subtus subtuberculatis obsolete reticulatis.

13

Habitat ad Cap. Bon. Sp. *D. Masson*.

Obs. This and *A. cymbiformis* are two extremely singular species; and such, had they been figured in the dark ages of botany, as we should have fancied more like the productions of art than the genuine children of nature: *A. mirabilis* is a connecting, but very abrupt link, between the remote species *retusa* and *pumila*.

pumila. ALOE foliis multifariis perviridibus: spinis herbaceis
14 tuberculisque numerosis.

A. arachnoides β . *pumila.* Willd. Sp. Pl. 2. 188.

A. atrovirens. *Plantes Grasses*, p. 51, cum icone.

A. africana minima atroviridis spinis herbaceis numerosis ornata. *Boerh. Ind. Alt.* 2. 131. t. 131.

Obs. This species produces offsets prodigiously, and soon forms very convex, compact, and circular tufts.

* *translucens.* ALOE prolifera, foliis multifariis lanceolatis terti-
15 tiusculis eleganter ciliatis; apice maculis oblongis valde pellucidis.

Habitat ad Cap. Bon. Sp. D. Masson.

Obs. This species is very much like the next; but differs, in constantly producing numerous offsets, in being smaller, having finer ciliæ, being much more pellucid, and having no cartilaginous substance on the margins of its leaves. It is an elegant species.

arachnoides. ALOE foliis multifariis lanceolatis; supra planiusculis
16 grosse ciliatis: marginibus cartilagineis.

A. arachnoides α . communis. Willd. Sp. Pl. 2. 188.

A. humilis africana, arachnoidea. *Comm. Præl.* t. 27.

A. arachnoides. *Plantes Grasses*, p. 50, cum icone.

Obs. This species very rarely produces any offsets.

†††† Margaritaceæ. *Acaules*, foliis multifariis margaritaceo-tuberculatis.

* *recurva.* ALOE foliis subulatis recurvatis; supra concavis; sub-
17 tus sub-tuberculatis: marginibus margaritaceo-tuberculatis.

Habitat

Habitat ad Cap. Bon. Sp. *D. Masson*.

Obs. This is a very singular species, and has not a very distant affinity to the rigid section; but clearly belongs to this.

* *attenuata*. *ALOE* foliis subulatis elongatis; subtus tuberculis
18 margaritaceis majoribus; supra minutissimis, capsulis oblongis triquetris.

A. africana margaritifera minor, foliis multo longioribus. *Boerh. Ind. Alt. 2. 130. no. 27.*

margaritifera. *ALOE* foliis multifariis undique sparsis tuberculis
19 magnis margaritaceis, capsulis sphæroideo-oblongis triquetris.

* *maxima*. *A. africana* folio in summitate triangulari margaritifera, flore subviridi. *Hort. Amst. 2. f. 10. Comm. Præl. 43. Boerh. Ind. Alt. 2. 130. no. 29.*

major. *A. margaritifera* α . major. *Willd. Sp. Pl. 2. 188.* (excluso synonymo *Commelini*.) *Ait. Kew. 1. 468. Plantes Grasses, p. 57, cum icone.* (excluso synonymo *Commelini*, quæ ad varietatem maximam pertinet.) *Brad. Succ. t. 21.* (excluso synonymo *Boerhaavii*, quæ ad varietatem maximam pertinet.)

A. africana eadem (29) folio undique verrucis numerosissimis ornato. *Boerh. Ind. Alt. 2. 131. no. 30.*

minor. *A. margaritifera* β . minor. *Willd. Sp. Pl. 2. 188.* (excluso synonymo *Commelini*, quæ ad varietatem majorem pertinet.) *Ait. Kew. 1. 468.*

A. africana margaritifera minor. *Dill. Elth. 19.*

t. 16. f. 17. *Comm. Hort. Amst.* 2. 21. f. 11. *Boerh. Ind. Alt.* 2. 130. no. 26.

minima.

A. margaritifera γ. minima. *Willd. Sp. Pl.* 2. 189. *Ait. Kew.* 1. 468.

A. africana margaritifera minima. *Comm. Præl.* 43. *Dill. Elth.* t. 16. f. 18.

Aloes ejusdem (29; 30.) *varietas multiplex nata ex diversitate figuræ, magnitudinis verrucarum distinctis coloribus nitentium.* *Boerh. Ind. Alt.* 2. 131. no. 31. Icon at the lower right-hand corner of the frontispiece to *Blair's Bot. Essays.*

** CURVIFLORÆ. *Corollis ob-clavatis curvatis, corallii colore, apicibus virescentibus.*

† Bifariæ. *Acaules, foliis plerumque bifariis.*

verrucosa.

20

ALOE foliis bifariis ensiformibus acutis perviridibus supra concavis: undique tuberculis margaritaceis numerosissimis sparsis.

A. verrucosa. *Willd. Sp. Pl.* 2. 189. (excluso synonymo *Commelini.*) *Ait. Kew.* 1. 468. *Mill. Dic. ed.* 8. no. 20.

A. africana floribus rubris tenuissimis pediculis folio plano margaritifera. *Till. Pis.* t. 8.

A. carinata. *Plantes Grasses*, p. 63, cum icone.

* intermedia. *ALOE foliis bifariis subensiformibus læte viridibus: tuberculis numerosissimis albicantibus sparsis.*

21

A. africana foliis planis conjugatis carinatis verrucosis, caule et flore corallii colore. *Boerh. Ind. Alt.* 131. cum fig.?

A. ramosa flore rubro, folio maculis ab utraque parte ex albo-viridi notato. *Till. Pis.* t. 9.

Obs. This is an intermediate plant between *A. verrucosa* and *A. Lingua angustifolia.*

Lingua.

- Lingua.* 22 *ALOE* foliis plerumque bifariis linguæformibus obtusis lævibus undique maculatis: marginibus cartilagineis obsolete serrulatis.
- angustifolia.* *A.* foliis angustioribus.
A. linguiformis verrucosa. *Plantes Grasses*, p. 68, cum icone. (exclusis synonymis *Boerhaavii* et *Milleri*, quæ ad *A. intermediam* et *A. verrucosam* nobis pertinent.)
- * *latifolia.* *A.* foliis latioribus.
A. linguiformis angustifolia. *Plantes Grasses*, p. 68, cum icone. *Martyno Rar.* 11. cum fig. (excluso synonymo *Boerhaavii*.)
- * *longifolia.* *A.* foliis longioribus..
A. africana flore rubro, folio maculis ab utraque parte albicantibus notato. *Comm. Hort. Amst.* 2. 15. f. 8.
- * *angulata.* *A.* foliis bifariis vel oblique bifariis sæpius angulatis late linguæformibus.
A. africana flore rubro, folio triangulari et verrucis ab utraque parte albicantibus notato. *Comm. Hort. Amst.* 2. 17. t. 9. ?
- * *multifaria.* *A.* foliis sæpius spiraliter-multifariis.
- * *nigricans.* 23 *ALOE* foliis imbricatis bifariis late linguæformibus obtusissimis nigricantibus lævigatis obsolete maculatis: marginibus integerrimis.
A. *Lingua crassifolia.* *Willd. Sp. Pl.* 2. 190.
A. *Lingua crassifolia*, foliis latioribus brevioribus. *Ait. Kew.* 2. 469.
- carinata.* 24 *ALOE* foliis multifariis acinaciformibus valde tuberculatis.
A. *carinata.* *Willd. Sp. Pl.* 2. 189. (excluso synonymo *Martyni*.) *Ait. Kew.* 1. 469. *Mill. Dic.* ed. 8. no. 21.

*A. africana sessilis, foliis carinatis verrucosis. Dill.
Elth. t. 18. fig. optima.*

* subglabra. β . tuberculis fere oblitteratis.

†† *Pictæ. Caulescentes foliis pictis, caule tortuoso.*

pulchra.

ALOE foliis ensiformibus acutis.

25

*A. maculata pulchra. Willd. Sp. Pl. 2. 189. Ait.
Kew. 1. 469.*

obliqua.

*ALOE foliis anguste-linguæformibus obtusissimis
cum mucrone.*

26

*A. maculata obliqua. Willd. Sp. Pl. 2. 189. Ait.
Kew. 1. 469.*

*** *GRANDIFLORÆ. Corollis cylindræceo-ovatis, corallii colore, apicibus
virescentibus.*

† *Anomalæ, foliis bi- vel tri-fariis integris.*

variegata.

ALOE foliis trifariis pictis.

27

α . stylo staminibusque corolla brevioribus, fasciis
viridibus foliorum angustioribus.

β . stylo staminibusque corolla longioribus, fasciis
viridibus latioribus.

*A. variegata. Willd. Sp. Pl. 2. 190. (excluso syno-
nymo Tillii.) Ait. Kew. 1. 470. Curt. Bot. Mag.
f. 513. Plantes Grasses, p. 21, cum icone. (excluso
synonymo Tillii.)*

*A. africana humilis, folio ex albo et viridi variegato.
Comm. Præl. t. 28. Icon, the middle one, at the
bottom of the frontispiece to Blair's Botanic
Essays.*

Obs. Perhaps this species and the two last are
the most beautiful of all the Aloes. This has a

creeping root, and has not one species nearly allied to it in all the genus.

plicatilis. 28 *ALOE* foliis bifariis glaucis, caule fruticoso dichotomo.

A. plicatilis. Willd. *Sp. Pl.* 2. 190. *Ait. Kew.* 1. 470. *Curt. Bot. Mag.* f. 457.

A. africana arborescens montana non spinosa, folio longissimo plicatili, flore rubro. *Comm. Hort.* 2. p. 5. t. 3.

A. caulescens palmæ facie. *Pet. Gaz. Cat.* 467. t. 89. f. 3. *mala*.

Obs. This is the most branched and thickest-stemmed of all: in the habit of its bifarious leaves it resembles the species of the last section, but the structure of the flowers unerringly refers it to the present one.

†† *Acaules, foliis multifariis ciliato-dentatis radicalibus.*

humilis. 29 *ALOE* foliis subulatis supra turgidis undique inerme tuberculato-spinosis.

α. foliis supra turgidis inerme spinosis; infra tuberculatis; apicibus rectiusculis, bracteis internodio longioribus, stylo staminibus brevioribus.

A. humilis α. Willd. *Sp. Pl.* 2. 187.

A. humilis. *Plant. Grasses*, p. 39, *cum icone*.

A. perfoliata ξ. *humilis*. *Ait. Kew.* 1. 467.

A. africana *humilis*, spinis inermibus et verrucis obsita. *Comm. Præl.* 77. t. 26. *Till. Pis.* t. 6. *mala*.

* *incurva*. β. foliis subulatis teretiusculis undique valde tuberculatis: apicibus incurvatis, bracteis internodio brevioribus, stylo staminibus longioribus.

* *tuberculata*.

* *tuberculata*. ALOE foliis acuminatis; supra concaviusculis; undique numerosissime tuberculatis.

30

suberecta. ALOE foliis acuminatis; supra planis lævibus; subtus tuberculatis.

31

α. foliis glaucescentibus; subtus valde tuberculatis.

A. perfoliata suberecta, foliis planis suberectis: marginibus et pagina inferiore spinosis. *Ait. Kew.* 1. 467.

* β. foliis glaucis supra lævibus; subtus versus apicem tuberculatis.

††† Subacaules, foliis multifariis ciliato-spinosis propaginibus radicalibus.

* *prolifera*. ALOE foliis lanceolatis acutis glaucis: marginibus carinaque apice spinosis vix cartilagineis; subtus subtuberculatis.

32

A. perfoliata δ. africana caulescens, foliis glaucis brevissimis, foliorum summitate interna et externa nonnihil spinosa. *Willd. Sp. Pl.* 2. 185. *Comm. Præl.* t. 22.

A. brevioribus. *Mill. Dic.* no. 8.

Obs. This is the most abundant producer of offsets in this section.

depressa. ALOE foliis oblongo-ovatis acutis glaucis; subtus tuberculatis: marginibus carinaque apice cartilagineis dentatis.

33

A. perfoliata ζ. africana caulescens, foliis glaucis brevioribus: foliorum parte interna et externa nonnihil spinosa. *Willd. Sp. Pl.* 2. 186. (exclusis synonymis *Comm. Hort.* 2. t. 14. et *Mill. Dic.* no. 3.) *Comm. Præl.* 71. t. 21.

A. perfoliata.

A. perfoliata depressa. *Ait. Kew.* 1. 467. (excluso synonymo *Milleri*.)

A. glauca. *Mill. Dic.* No. 16.

Obs. This species was well named by Aiton: it is clearly the most depressed of all the genus. Like the last, it is also an abundant producer of offsets.

* *virens.* *ALOE* foliis oblongo-lanceolatis viridibus; subtus maculatis: marginibus remote spinosis; spinis viridibus, floribus thyrso-spicatis.

34

†††† Suffrutescentes, foliis multifariis, dentato- vel denticulato-spinosis.

← *Propaginibus radicalibus.*

saponaria. *ALOE* foliis oblongo-ovatis acutis valde maculatis: spinis rubro-fulvis.

35

minor. *A.* foliis lanceolato-oblongis virescentibus: maculis majoribus validioribus subfasciatis; spinis rubris, floribus thyrso-capitatis.

A. picta β. *minor.* *Willd. Sp. Pl.* 2. 187.

A. perfoliata saponaria. *Ait. Kew.* 1. 467.

A. disticha. *Mill. Dic.* No. 5.

A. africana maculata spinosa minor. *Dill. Elth.* t. 14. *Till. Pis.* t. 10. *mala.*

obscura. *A.* foliis ovato-ellipticis glaucescentibus: maculis minoribus et obsoletioribus sparsis; spinis ruberrimis, floribus thyrso-spicatis.

A. picta α. *major.* *Willd. Sp. Pl.* 2. 186.

A. perfoliata obscura, foliis latioribus amplexicaulibus maculatis margine spinosis, floribus spicatis. *Ait. Kew.* 1. 467.

A. obscura. *Mill. Dic.* No. 6.

A. africana caulescens foliis spinosis maculis ab utraque parte albicantibus notatis. *Hort. Amst.* 2. f. 5.

A. africana maculata spinosa major. *Dill. Elth.* t. 15.

A. africana caulescens foliis caulem amplexantibus, floribus aurantiacis. *Brad. Succ. dec.* 4. p. 11. cum icone.

* *latifolia.*

A. foliis ovatis acuminatis: maculis valde obscuris sparsis; spinis rufescentibus, floribus thyrsocapitatis.

Obs. This variety and *Aloe striata* have the broadest leaves of all the Aloes.

serrulata.

36

ALOE foliis maculatis: marginibus carinaque apice serrulatis.

A. perfoliata serrulata. *Ait. Kew.* 1. 467.

Obs. This and the two next species very seldom produce any offsets.

* *striata.*

37

ALOE foliis glaucis substriatis: marginibus obsolete denticulatis.

Habitat ad Cap. Bon. Sp. *D. Masson.*

Obs. This and the last species have the least marginal spines of the whole section.

lineata.

38

ALOE foliis viridibus lineatis: spinis rubris.

A. perfoliata lineata. *Ait. Kew.* 1. 467.

Obs. This is the greenest-leaved of all this section. There is only one plant of it alive in Britain.

glauca.

39

ALOE foliis valde glaucis: spinis rubris.

α . foliis dealbatis: spinis junioribus pallidioribus adscendentibus.

A. perfoliata

A. perfoliata glauca. *Ait. Kew.* 1. 466. (excluso synonymo *Milleri*.)

A. africana foliis glaucis margine et dorsi parte superiore spinosis. *Hort. Amst.* 2. f. 12. *Comm. Præl.* 75. f. 24.

* β . foliis cærulescenti-glaucis subtus versus apicem subtuberculatis: spinis junioribus virescentibus respicientibus.

barbadensis. *ALOE* foliis ensiformibus sinuato-serratis, corollis luteis.

40

A. barbadensis. *Mill. Dic.* No. 2.

A. perfoliata barbadensis. *Ait. Kew.* 1. 466.

A. vulgaris. *Plantes Grasses*, p. 27. *cum icone*.

A. vera vulgaris. *Munting. Aloïdar. cum icone*.

Obs. This species and *striata* are the softest-leaved and most succulent of all the Aloes: the former is the only species whose flowers are yellow. In the course of my studying this genus, I have found the *structure* and *colour* of the flowers, and the *position* and *colour* of the leaves, tubercles, and spines, of more consequence, as specific criteria, than the *shapes* of those leaves, arms, or flowers.

+ + *Dichotomæ, propaginibus caulinis, caule senecto percrasso dichotomo.*

socotrina. *ALOE* foliis ensiformibus virescentibus: apicibus subincurvatis; serraturis marginalibus parvis albis numerosis.

41

A. perfoliata vera. *Willd. Sp. Pl.* 2. 186.

A. perfoliata socotrina. *Ait. Kew.* 1. 466. *Curt. Bot. Mag. f.* 472.

A. vera. *Mill. Dic. No. 15.*

A. rubescens? *Plantes Grasses, p. 15. cum icone mala.*

A. americana ananifolia floribus suave-rubentibus.
Pluk. Phyt. t. 240. f. 4.

A. vera minor. *Munting. Aloidar. cum icone.*

A. soccotrina. *Woodv. Med. Bot. with a figure and full account of the medicinal qualities of this and other Aloes.*

Obs. By age becomes dichotomous, but has no radical offsets like all the species of this section which precede it.

purpurascens. ALOE foliis ensiformibus glaucis: apicibus recurvis;
42 serraturis marginalibus albis.

A. sinuata. *Willd. Sp. Pl. 2. 187. (exclusis synonymis.)*

I have not the synonym of *Comm. Hort. 1. t. 48.* to examine, but I suppose it belongs to *soccotrina*.

A. perfoliata purpurascens. *Ait. Kew. 1. 466.*

Obs. Like the last, when aged, it has a dichotomous stem, and no radical offsets.

††††† Frutescentes, foliis multifariis ciliato-dentatis.

arborescens. ALOE foliis aggregatis ensiformibus glaucescentibus:
43 apicibus reflexis; dentibus marginalibus virescentibus.

A. perfoliata β . *Willd. Sp. Pl. 2. 185.*

A. perfoliata arborescens. *Ait. Kew. 1. 466.*

A. arborescens. *Plantes Grasses, p. 38. cum icone.*
Mill. Dic. No. 3. (excluso synonymo Commelini.)

A. caulescens foliis reflexis margine spinosis. *Pluk. Phyt. t. 129. f. 3. Idem, Pet. Gaz. t. 88. f. 3.*

Obs.

Obs. This species (after *ferox*) is the tallest of the Aloes.

africana. 44 *ALOE* foliis ensiformibus glaucis: inferioribus distantibus; apicibus reflexis; dentibus marginalibus igneis.

A. perfoliata α . *Willd. Sp. Pl.* 2. 185. (excluso synonymo *Comm. Pr. t.* 17. et forte, *rar. t.* 44. quæ non vidi.)

A. perfoliata africana. *Ait. Kew.* 1. 466.

A. africana. *Mill. Dic.* No. 4.

A. africana caulescens, foliis glaucis caulem amplexantibus. *Com. Hort. Amst.* 2. f. 14.?

A. africana caulescens, foliis minus glaucis caulem amplexantibus. *Comm. Pr. f.* 18.?

Obs. Never produces any offsets, and very rarely flowers.

dichotoma. 45 *ALOE* caule dichotomo, foliis ensiformibus serrulatis glaucis: apicibus erectis. *Willd. Sp. Pl.* 2. 184. *Ait. Kew.* 1. 466. *Paterson Iter.* p. 56, *tabulis tribus.*

A. africana caulescens, foliis magis glaucis caulem amplexantibus. *Comm. Pr. t.* 17.?

Obs. This is the smoothest-stemmed of all the Aloes. There is only one plant of it now in Britain.

ferox. 46 *ALOE* foliis ovato-ensiformibus rigidiusculis glaucis: paginis præcipue inferiore regulariter spinosis-simis.

A. perfoliata γ . *Willd. Sp. Pl.* 2. 185.

A. perfoliata ferox. *Ait. Kew.* 1. 467.

A. ferox.

A. ferox. *Mill. Dic. No. 22.* (excluso synonymo *Muntingii.*) *Plantas Grasses, p. 32. cum icone.*

A. africana caulescens, foliis glaucis caulem amplectentibus spinosis. *Comm. Pr. t. 19.*

Obs. This is the loftiest of the Aloes: I have seen it near 20 feet high. It is also the roughest-leaved.

* *supralævis.* *ALOE foliis oblongo-ensiformibus rigidis glaucescentibus; supra lævibus; infra irregulariter spinosis.*

47

A. perfoliata ϵ . *Willd. Sp. Pl. 2. 186.*

A. africana caulescens foliis glaucis caulem amplectentibus: dorso spinoso. *Comm. Pr. t. 20. Hort. 2. t. 13.*

Obs. This species and the last never produce any offsets, and very rarely flower.

* *flavispina.* *ALOE foliis oblongo-acuminatis glaucis; junioribus patulis; senioribus horizontalibus: lateribus dorsoque interrupte spinosis; spinis latissimis fulvicantibus.*

48

Obs. This species is not much unlike the figure of Dillenius's *A. mitraformis*, but the spines are not of the same colour.

* *albispina.* *ALOE foliis ovato-oblongis acutis virescentibus: marginibus carinaque valde spinosis; spinis longis; junioribus albissimis; senioribus apice flavicantibus.*

49

Habitat ad Cap. Bon. Sp.

Obs. This is a very fine species, and the largest-spined of all the genus. It never produces any offsets, and has not yet flowered in Europe.

mitraformis.

- mitræformis*. *ALOE* foliis imbricatis erectis ovato-acutis.
 50
 elatior. *A. foliis virescentibus majoribus: spinis margina-*
libus rarioribus apice flavicantibus.
A. perfoliata *z. Willd. Sp. Pl. 2. 186.*
A. africana mitræformis spinosa. Dill. Elth. t. 17.?
foliis magis patentibus.
A. perfoliata mitræformis. Ait. Kew. 1. 467.
A. mitræformis. Mill. Dic. No. 1.
 * humilior. *A. foliis glaucescentibus: spinis numerosioribus albis.*
 * spinosior. *A. foliis paulo minoribus et distantioribus: spinis*
numerosioribus flavicantibus.
Obs. This is perhaps the most stately species
in the genus.
brevifolia. ALOE foliis distantibus patulis ovato-acutis.
 51 *A. perfoliata brevifolia. Ait. Kew. 1. 467.*
Obs. This has the most distant leaves of all;
they are also the smallest of this section, except,
perhaps, those of A. prolifera.

APPENDIX.

HAVING now described all the species and varieties of *Aloe* which I have ever beheld, I rejoice not a little at the ending of the task.

I have given, amongst other select synonyma, a reference to every figured *Aloe* in my possession; so far at least as they belong to the plants I have described. This is more than I intended, in the outset of the business, to have done; but finding the very involved

involved and intricate state of the whole genus absolutely required it, I redoubled my exertions and new modelled the whole; and, with the assistance of the living plants themselves (which I found indispensably necessary to have always before me), have given to my *specificæ differentiae* that decisive kind of perspicuity which they could not possibly have received in any other way. I claim no merit on this account, because any other person, of equal diligence, might have done as much, perhaps more, had he been in possession of the same advantageous materials.

Exclusive of all the foregoing species and varieties, which I have described from the living plants, I have still a knowledge, from figures and their accompanying descriptions only, of the following species; an account of which, in a systematical manner, I am advised to add as a necessary appendix to my *Arrangement*, that they may no longer remain the opprobrious impediment of such as are engaged in the study of this genus. The reader must accept them, as I have done, upon the fidelity alone of the authors from whose works I have taken them up; whose names (long since enrolled in the Nomenclature of the science) are at once familiar and respectable to the ear of a botanist, viz. *Muntingius*, *Plukenet*, and *Petiver*, *Commeline* and *Tilli*. For the most part they appear to me tolerable figures; and, from the accuracy which some well-known species accompanying them are represented with, I am inclined to believe that they are themselves not very imperfect. This, however, must be left for time to develop. They are all, without a doubt, specifically distinct from each other; and probably from all my preceding species and varieties also. I do not think any of them have hitherto been in the British collections; neither have they, as yet, been named by any systematic writer, although some of them have been erroneously referred to well-known species.

anomala.

anomala. *ALOE* subcaulescens foliis trifariis albo et viridi variegatis, laciniis corollæ rubris.

A. africana humilis, folio ex albo et viridi variegato, florum petalis reflexis rubris. *Till. Pis. t. 7.*

Obs. This very singular species, although it has been referred to *A. variegata* and *A. viscosa*, is indisputably as remote from the former in the structure of its corolla, as it is from the latter in the size and variegation of its leaves. It must, notwithstanding the colour of the corolla, be inserted in the first subdivision of my arrangement, after *A. aspera*.

tricolor. *ALOE* foliis sub-linguiformibus acutis reflexis; supra lineatis; apice obsolete crenulatis, corolla albo et viridi variegata.

A. africana humilis, folio nonnihil reflexo. *Comm. Præl. t. 29.*

Obs. This curious plant should be inserted after *A. albicans* in the same subdivision.

pertusa. *ALOE* foliis ensiformibus glabris numerosissime pertusopunctatis.

A. africana glabra, folio minutissimis cavitatibus notato. *Comm. Præl. t. 25. sine flore.*

Obs. This odd species, whose flowers we know not, and which is the only *Aloe* with hollowed dots, should probably be inserted in my arrangement in the same section as *A. verrucosa*, but before it.

muricata. *ALOE* foliis subulatis; supra planis; undique numerosissime spinosis: apicibus recurvantibus.

A. africana foliis erectis superficie spinosis. *Pluk. Phyt.*

Phyt. t. 129. f. 2.—"Aloe capensis valde aculeata. *Pet. Gaz. Cat. no. 463. t. 88. f. 2.* Common prickly cape Aloe. The flowers are wholly purple in my Lord's (the Bishop of London's) paintings, and the stalk all green; in mine, the first are partly yellow, and the last reddish, which may proceed from different growths."

Obs. This plant comes near my *A. tuberculata*, and may follow that species in my arrangement.

ramosa. 5 ALOE foliis lanceolato-ovatis acutis erectiusculis lævibus serrato-spinosis, caule frutescente dichotomo.
A. spinosa arborescens ramosa. Pluk. Phyt. t. 129. f. 4.
A. capensis arborescens ramosa. Pet. Gaz. Cat. no. 264. t. 87. f. 9.

Obs. This plant, if it does not belong to *A. soccotrina* or *purpurascens*, will range in my system after the latter, in the same subdivision: *A. arborescens*, which is figured on the same plate in *Plukenet*, (*f. 4.*) is the first of the next subdivision.

punctata. 6 ALOE subacaulis foliis imbricatis carinatis incurvatis undique albo maculato-punctatis.

A. africana vulgari similis, floribus rubris et paucioribus. Pluk. Phyt. 129. 1.

"*A. maculata lævis. Pet. Gaz. Cat. no. 463. t. 88. f. 1.* Common smooth Cape Aloe. The leaves edged and spotted with white; the flowers red, but yellow next the stalk. Father *Tachard's* figure seems the same, but that he has omitted the white spots in the leaves. The flowers in the Bishop of London's paintings are all

all red, and somewhat longer; nevertheless I take them to be the same."

Obs. This plant must follow *A. variegata* in my arrangement: if it should prove a variety of that species, the figures are miserably bad.

Petiver, in speaking of the three last-mentioned figures, and his figure of *A. arborescens* (above cited), informs us that his paintings of them do not much differ from the figures of *Plukenet*, which were made from paintings of Father *Tachard's* in the Bishop of London's possession; and *Plukenet* says the Bishop's paintings were done at the Cape itself, from life.

horrida.

7

ALOE acaulis? foliis ovato-ensiformibus undique numerosissime spinosis et tuberculatis.

A. ex Goa foliis crassissimis latissime mucronatis rubentibus: spinis undique sparsis et verrucis tumetibus obsitis. *Till. Pis. t. 11. sine flore.*

Obs. If this is a stemless species, it will come into my arrangement before *A. suberecta*; if it is frutescent, (which from its large leaves is very probable,) it is possibly no more than a strong seedling variety of *A. ferox*; from which, however, it differs very much in the erectness of those leaves.

rhodocantha. *ALOE* of the *Plantes Grasses*, p. 44.

8

Obs. If this should not prove a variety of *A. glauca*, it should be inserted in my arrangement after *A. depressa*. It differs very much from the latter in its high-coloured spines; those of *depressa*

are white. Colour, I have observed above, although unstable and not to be depended on in most plants, is often in Aloes the best and most permanent mark of specific distinction.

dorsalis.

ALOE foliis ensiformibus acuminatis: marginibus dorsoque valde spinosis. *Munting. Aloidar. cum icone.*

Obs. This species may follow *A. barbadensis* in my arrangement.



Haworth, Adrian Hardy. 1804. "A new Arrangement of the Genus Aloe, with a chronological Sketch of the progressive Knowledge of that Genus, and of other succulent Genera." *Transactions of the Linnean Society of London* 7, 1–28.
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