

THE  
ALOES  
OF  
TROPICAL AFRICA  
AND  
MADAGASCAR

*By*  
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Published by  
THE TRUSTEES  
THE ALOES BOOK FUND  
P.O. BOX 234, MBABANE, SWAZILAND

*September 1966*

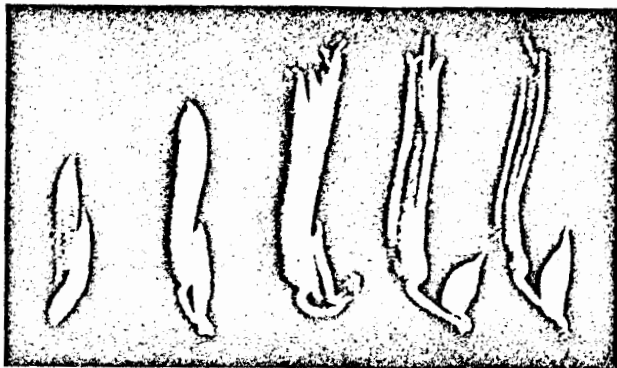


FIG. 145.

*A. audhalica* Lavranos et Hardy. Flowers natural size.

Photo: Mr. J. Lavranos.

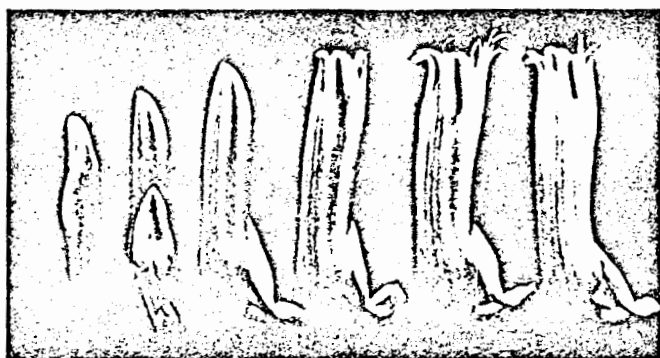


FIG. 145A.

*A. audhalica* Lavranos et Hardy. Flowers 1/1 from a plant flowering at Mbabane Swaziland originally collected by Mr. J. Lavranos on the Audhali Plateau, SW Arabia.

SOUTH-WESTERN ARABIA: Audhali Plateau, near Mukeiras, 6,900 ft. (2100m.), lat. 45° 41' N, long. 13° 56' E, coll. 25 Dec. 1961, fl. Johannesburg April 1964, Meintjies in Lavranos 1652 (PRE) holotype; Mukeiras, 16 Aug. 1962, Lavranos 1817; Karish, 7,100 ft. (2160m.), 18 Aug. 1962, Lavranos 1896; Wadi Idhi, 6,800 ft. (2070m.), 4 March, 1964, Rauh et Lavranos 2789; Wadi Salul, 6,800ft. (2070m.), 5 March 1964, Rauh et Lavranos 2800.

*A. audhalica* is widespread in rocky, sunny places throughout the Audhali plateau at altitudes exceeding 6,650 ft. (2000m.). Its distribution probably extends into the adjacent district of Beidha. This species, while widely distributed on the plateau itself was nowhere found within less than a half-mile from the edge of the escarpment which, in turn, is the habitat of another species as yet unidentified. In its habitat, which enjoys an average annual rainfall of some 12 inches, and is subject to occasional frosts during the winter months, *A. audhalica* grows in exposed positions in association with various low Acanthaceae and Labiatae, *Dracaena serrulata* Bak., *Euphorbia balsamifera* Ait., *Caralluma quadrangula* (Forsk.), N.E. Br., *C. plicatiloba* Lavranos, etc. It is nowhere common but is found in isolated individuals or small groups.

*A. audhalica* seems to be rather closely allied to *A. vacillans* Forsk., which was collected at various places in the central region of the Western Yemeni escarpment. *A. vacillans* however, differs in the shape of its leaves, which are longer and narrower, in having inflorescences 1.5—2m. tall, while its racemes are said to be 35—40cm. long and more laxly flowered and finally by the fact that its flowers are described by Forskal as subsessile, whereas Berger states the pedicels are 5—7mm. long.

55. *A. barbadensis* Mill. *Gard. Dict.* ed. 8, No. 2 (1768); Haw. in *Trans. Linn. Soc.* 7: 19 (1804), in *Synops.* 79 (1812); R & S *Syst. veg.* 7: 693 (1892), Kunth *Enum.* 4: 521 (1843).

— *Aloe perfoliata* (var.)  $\pi$  *vera* L. *Spec. Pl.* 1: 320 (1753).

— *A. perfoliata* L. (var.)  $\gamma$  *barbadensis* Ait. *Hort. Kew.* 1: 466 (1789).

— *A. perfoliata* L. (var.)  $\lambda$  *vera* Willdenow *Sp. Pl.* 2: 186 (1799).

— *A. vera* "L" of many authors, not of Miller (1768); Webb et Berth, *Hist. Nat. II Canar.* iii, 2, 3, 348 (1848); Baker in *Journ. Linn. Soc.* 18: 176 (1880); Non Schweinfurth in *Bull. Herb. Boiss.* App. 2, 59 (1894); Berger in Engler's *Pflanzenr. Liliac.-Aloin.* 229 (1908).

— *A. vera* "L" var. *littoralis* Koenig ex Baker in *Journ. Linn. Soc.* 176 (1880) — *vide* Berger.

— *A. vera* "L" var. *chinensis* Berger *l.c.* 230.

— *A. vera* "L" var. *lanzae* Berger *l.c.* 230.

- *A. lanzae* Todaro *Hort. Bot. Panorm.* 55, t. 39 (1891) — *vide* Berger.
- *A. chinensis* Bak. in *Bot. Mag.* t. 6301 (1877). *Note*: Received at Kew in 1817 from China (where it had in all probability been introduced from the West previously), also received from other sources but never with any definite information as to its native country; not worth upholding. — G.W.R.
- *A. barbadensis* Mill. var. *chinensis* Haw. *Supp. pl. succ.* 45 (1819); *Kunth Enum. pl.* 4: 522 (1843).
- *A. indica* Royle *Ill. Pl. Himal.* 1: 390 (1839) — a reddish-flowered form from the north-western Provinces of India, *vide* Bentley et Trimen *Medic. Plants* 4: 282 (1805) — Royle did not publish any full description or figure of his *A. indica*; he merely mentions it had red flowers.
- *A. elongata* Murray in *Comm. Goett.* 9: 191, t. 2 (1789).
- *A. vulgaris* Lam. *Encycl.* 1: 86 (1783) — excl. syn. *A. officinalis* Forsk.; Sibth. et Smith *Fl. Graec.* 1: 238, t. 341 (1806); Aiton *Hort. Kew* 2: 292 (1811); Salm Dyck *Cat. rais.* 25, 58 (1817); *Monogr. gen. Al. sect.* 18, fig. 2 (1849); Stephenson et Churchill *Medic. Bot.* 2: t. 109 (1835); Bentley et Trimen *Medic. Pl.* 4: t. 282 (1805).
- *A. rubescens* D.C. *Plant. grass* p. 15 (1799) — appears to be a red-flowered form of *A. barbadensis* Mill.
- *A. flava* Persoon *Synops.* 1: 378 (1805).

## PRE-LINNEAN CITATIONS

- *Aloe foliis spinosis confertis dentatis, vaginantibus planis maculatis* — *Hort. Cliff.* 130 (1736); *Hort. Upsal.* 86 (1748). *Hort. Cliff.* cites the Aloe figure on p. 335 of Dodonaeus's *Stirpium Historiae* (1583).
- *Aloe vulgaris sive Sempervivum marinum*, Common Aloe or Sea Houseleeke — under this name Dodonaeus's figure is exactly reproduced in *The Herball*, first published by John Gerard, in 1597, amended by Thos. Johnson in 1633, London.
- *A. vulgaris* in Caspar Bauhinus's *Pinax* to his *Theatre of Plants* 386 (1671) — cited by Linnaeus in *Hort. Cliff.* (1736), *Spec. pl.* 1: 321 (1753), Miller, Lamarck and others.
- *Aloe vera vulgaris* Muntingius *Adoidarium* t. 19 (1680), cited by Lamarck, Haworth and others.
- *Aloe Vulgaris* B.P.H.L.H.A. etc., *Aloe Hispanica* & *Aloe vera vulgo* listed in *Hort. Beaumont.* 6, no. 17 (1690) appear to belong here.

## NOTE ON NOMENCLATURE

Many authors have incorrectly assumed that this species was published under the name *Aloe vera* Linnaeus. In his *Spec. pl.* 1: 320 (1753), Linnaeus originally described it as a variety, i.e. *A. perfoliata* (var.) *vera*, not as a numbered species. In Ed. 2 (1762), and again in Ed. 3 (1764), Linnaeus lists it as *A. perfoliata* (var.)  $\pi$  *vera*.

The International Code of Botanical Nomenclature lays down "When the rank of a genus or infrageneric taxon is changed, the correct name or epithet is the earliest legitimate one in the new rank. In no case does an epithet have priority outside its own rank".

The earliest legitimate name in the new rank (of species) is *A. barbadensis* Mill. and that is the name that must be used. *Note*: *A. vera* Mill. (*non* L.) is a very different species, in all ways distinct from *A. barbadensis* Mill.

✓ **DESCRIPTION**: Based mostly on plants from Masca, Tenerife, Canary Islands.

*Plants* with fibrous fleshy roots, acaulescent, or with short stems, freely suckering and forming dense groups.

*Leaves* about 16, densely rosulate, erectly spreading and forming rather compact rosettes, averaging 40–50cm. long, 6–7cm. broad at base, gradually narrowing to the apex, rather thick and fleshy; *upper surface* grey-green with reddish tinge, without spots or markings but sometimes at first spotted in young plants, rather flat low down, slightly canaliculate towards apex; *lower surface* convex, otherwise as in upper surface; *margins* with slightly pinkish edge armed with firm deltoid pale teeth about 2mm. long, more crowded and 10mm. apart low down, wider apart (15–20mm.) upwards. *Sap* dries yellow.

*Inflorescence* simple or 1–2-branched, 60–90cm. high.

*Peduncle* basally plano-convex and 20mm. broad, terete upwards, simple or compactly 2–3-branched from about the middle.

*Racemes* narrowly cylindrical-acuminate, the terminal averaging 30–40cm. long, 5–6cm. diam., the lateral a little shorter, rather densely flowered, the apex a tuft of dried bracts, youngest buds suberect, older buds spreading, greenish-nerved, open flowers stiffly pendulous, almost as if appressed to the axis.

*Bracts* ovate-acute, deflexed, thin, dry, rather white, 10mm. long, 5—6mm. broad, 5—7-nerved, twice as long as the pedicels.

*Pedicels* averaging 5mm. long.

*Perianth* yellow, cylindric, slightly ventricose, averaging 28—30mm. long, basally obconic, 7mm. diam. across the ovary, enlarging at the middle, narrowing to the throat, with the mouth somewhat closed and slightly up-turned; *outer segments* free for 18mm., thinner at the edges, with 3 greenish nerves to base; *inner segments* themselves free but dorsally adnate to the outer for one-third their length. broader than the outer, with 3 crowded yellowish nerves forming a keel in upper two-thirds, the apices more obtuse than the outer.

*Anthers* in turn exserted 3—4mm.; *stigma* at length exserted 5mm.; *ovary* pale green, 5—6mm. long, 3mm. diam. (Figs. 146—151).

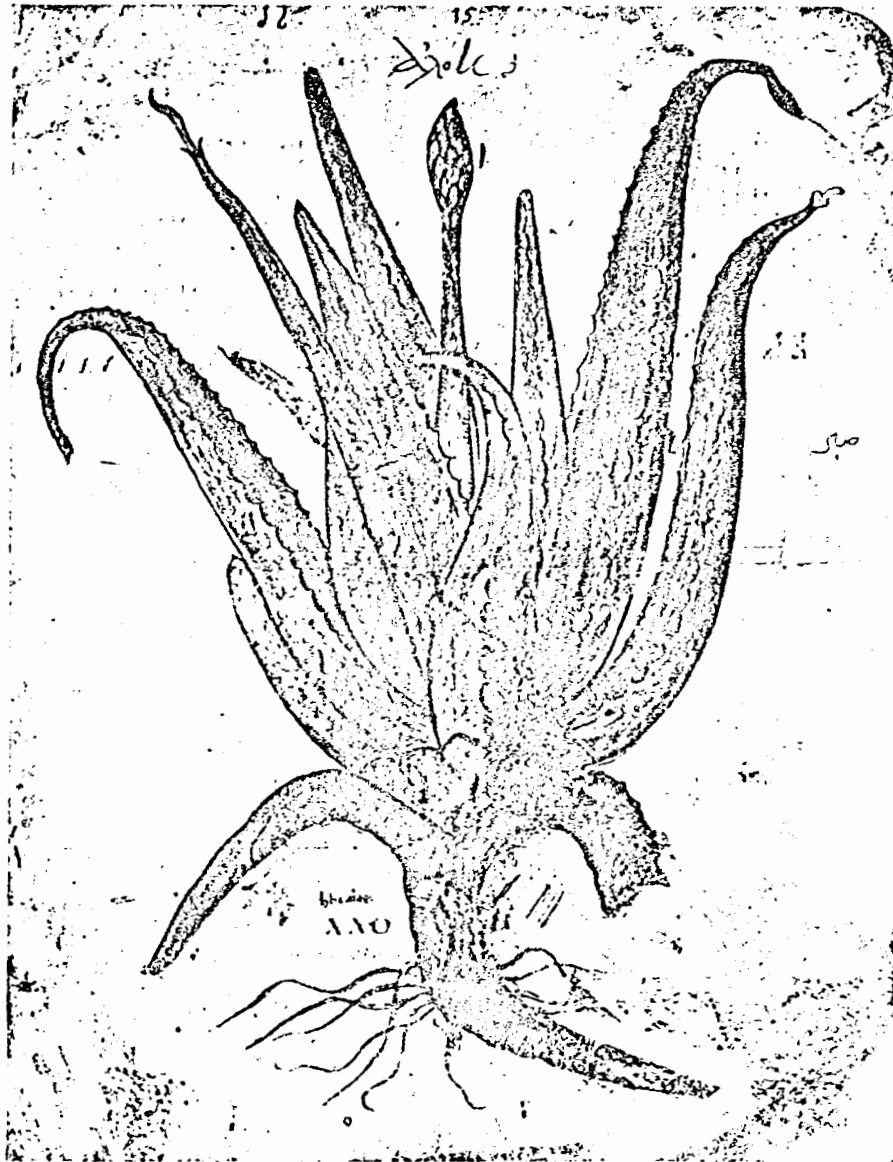


FIG. 146.

*A. barbadensis* Mill. (= "*A. vera* L."). The earliest known illustration of any species of Aloe. This is a photographic reproduction (reduced) of the original coloured figure of "Aloe" included in the *Codex Aniciae Julianae* - the earliest illustrated Herbal, made at Constantinople about the year 512 AD. The original parchment Codex which includes the Greek text of Dioscorides's Herbal (1st cent. AD.) is in the Osterreichische Nationalbibliothek, Vienna.

Photo by courtesy The General Director.

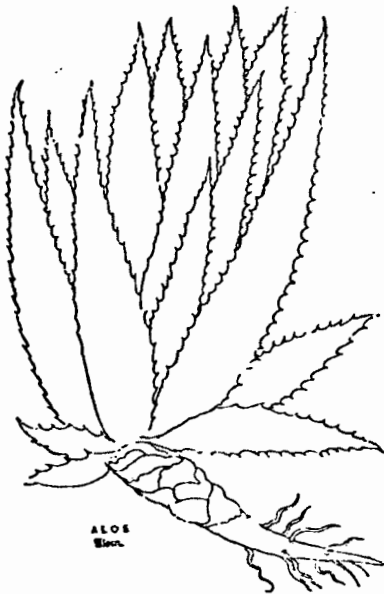


FIG. 147.

*A. barbadensis* Mill. *Aloe sempervivum marinum* from Leonard Fuchs *De Historia Stirpium* p. 138 (1542) - this appears to be founded on the *Codex Aniciae Julianae* figure of 512 AD.  
Photo: By courtesy The Director, Kew.

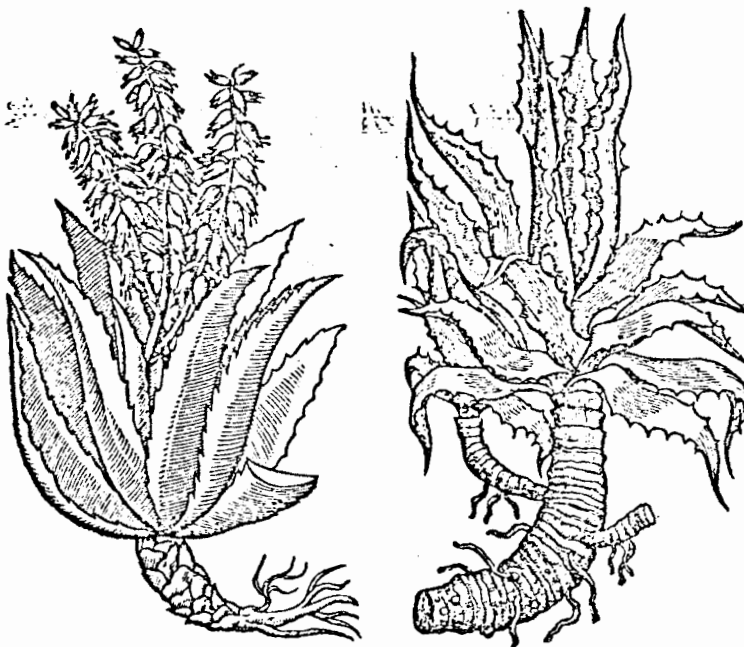


FIG. 148.

From Dodonaeus *Stirpium Historiae* Pemptades Sex, p. 355, published at Antwerp in 1583. The figure on the left was named "Aloe" and is obviously based on Fuchs's figure (1542) - with flowers added. (The figure on right is *Agave* sp.). - Reproduction by courtesy The Chief, Botanical Research Institute, Pretoria.



FIG. 149.

*A. barbadensis* Mill. *Aloe vera vulgaris* in Muntingius *Aloidarium* t. 19 (1680). - Photo: By courtesy, The Chief, Botanical Research Inst. Pretoria.

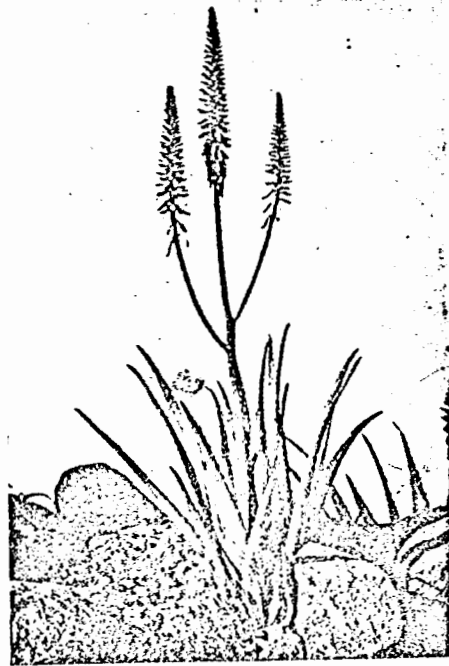


FIG. 150.

*A. barbadensis* Mill.

FIG. 150. Plant from Masca, Tenerife, Canary Islands flowering in the author's garden. Height 1m.

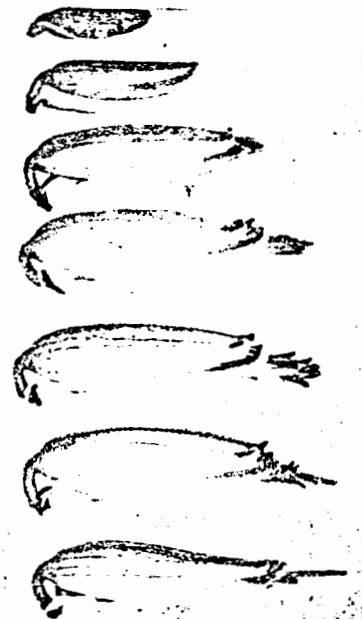


FIG. 151.

FIG. 151. Flowers (Yellow) natural size.

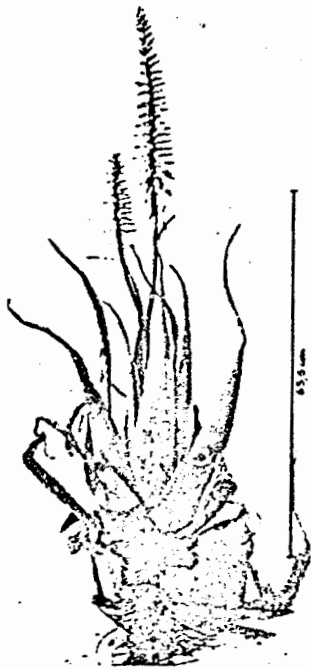


FIG. 151A.

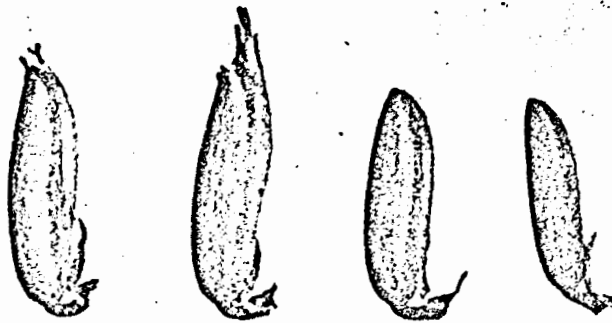


FIG. 151B.

*A. barbadensis* Mill.

FIG. 151A. Plant collected by Dr. E. J. Mendes on the escarpment at Sines, south of Lisbon, Alentejo Prov., Portugal; fl. May 1965.

FIG. 151B. Flowers 1/1.

Photos: Dr. E. J. Mendes

CANARY ISLANDS. Tenerife, April 1846, E. Bourgeau 358! (K); Garachio, maritime bush, 19 June 1855, E. Bourgeau 1533! (K); El Campo, above Sta. Cruz, 22 Feb. 1859, Rev. R. T. Lowe s.n.! (K); Road to Realijo, 500m., flowers yellow, 8 June 1903, Th. J. Dinn 265! (K).

The following are considered to have been introduced to the New World, and subsequently naturalised:

CUBA. Oil fields near Havana, 13 March 1905, A. R. Curtis 664! (K).

BARBADOS. Bel Air; St. Philip, March 1940; H. B. Gooding 558! (BM).

BERMUDA. Castle Harbour, Walsingham Bay, 22 March 1933, A. B. Rendle 377! (BM).

JAMAICA. Fort Clarence, Port Henderson Hill, 200 ft., 3 May 1956, W. T. Stearn 812! (BM).

### EARLY HISTORY

Plants of the species of *Aloe* now to be known as *Aloe barbadensis* Mill. (formerly known as *A. vera* "L" for nearly 200 years) were known in the 1st century A.D. In his Greek Herbal (which describes plants then reputed to have healing virtues), Dioscorides gives the medicinal qualities of the dried juices of *A. barbadensis*, while a coloured illustration of a plant in bud was included in 512 A.D.

Pedanius Dioscorides, from Anazarba in Asia Minor, travelled widely in the 1st century A.D. The illustrations included with his Herbal, are the oldest surviving representatives of many Eastern Mediterranean plants, and these include a coloured plate of *A. barbadensis*, which presumably then came from the Eastern Mediterranean.

Of the early illustrated botanical manuscripts the most important is the *Codex Aniciae Julianae*, made at Constantinople (Istanbul) about the year 512 A.D. The original parchment Codex, consisting of 491 yellowish-white sheets, roughly a foot square, and containing the Greek text of Dioscorides' Herbal is in the Osterreichische Nationalbibliothek at Vienna. It seems that at least seven books originally went into the making of the text and illustrations, the most important being the original Greek text of Dioscorides. (Note: The foregoing is culled from an article dealing with the *Codex Aniciae Julianae*, the earliest illustrated herbal, by Dr. Win. T. Stearn, published in Zurich in *Graphia* Vol. 10, No. 34, 1954. I am grateful to Dr. Stearn for providing me with a photostat copy of his article. - G.W.R.)

The *Flora of Egypt* 3: 249 (1954) states that the Egyptian name for *A. barbadensis* (= *A. vera* "L") is *Saber*, *Sabr*, also *Sabbara*, literally meaning "endurance" and "bitter medicine".



*A. barbadensis* has been cultivated in Egypt since remote times, especially as a cemetery plant, and sometimes as boundary marks demarcating fields. Aloe plants planted on graves is a fairly common practice in parts of Somalia, Ethiopia and Eritrea today, where the present author has seen it repeatedly.

In Egypt the plant has always been connected with superstitions. It is stated to be a common custom in Cairo, also among the fallahin in the country to hang an aloe plant over the door of a house, particularly that of a new house. This is regarded as a charm to ensure long and flourishing lives for the inmates. The Aloe plant thus hung will live for some years and even flower. Hence the name *Sabr.* signifying patience. The same authority records that R. Campbell Thompson in *A Dictionary of Assyrian Botany*, p. 192, London (1949), states "the custom of hanging Aloe plants over house doors is apparently of very ancient origin. '*Aloe vera*' is spoken of in Akkadian texts of Ancient Assyria-Babylonia as the 'plant for the adornment of a door.' Its Akkadian name was *Si-ba-ru* from which originated the Syriac *sabhra* and the Arabic *sabr.*". If this is actually the case, then the history of *A. barbadensis* goes back 2000 years B.C.

The Aloes of commerce must not be confused with "Aloes" of the Old Testament of the Bible. The references to Aloes in *Psalms* 45: 8, *Proverbs* 7: 17, and *Solomon* 4: 14, are to a perfume, the produce of some Judean gum-tree, generally supposed to be *Aquilaria agallocha*, Roxb., which gave off a fragrant odour when decaying.

In the New Testament, *John* 19: 39 refers to Nicodemus coming by night and bringing "a mixture of myrrh and aloes about an hundred pound weight" for the embalming of the body of Jesus. The aloes mentioned here might possibly have been derived from either *A. barbadensis* or *A. perryi* from Socotra.

#### MODERN HISTORY

After Dioscorides (c. 78 A.D.) and the Aloe plant figured in the *Codex Aniciae Julianae* (c. 512 A.D.), 1,000 years were to pass before the next figure of an Aloe plant representing *A. barbadensis* saw the light of day. This is found on page 138 of Leonard Fuchs's *De Historia Stirpium*, Basle, 1542. The figure was founded on a plant without flowers, and was named *Aloe Sempervivum marinum*. Fuchs followed Dioscorides rather closely in his description of the species and its locality of origin, for example "Plentiful in India also in Arabia, Asia, and maritime places and Islands, as in (the Greek island) Andros."

The next figure was on p. 355 of Dodonaeus *Stirpium Historiae* Pemptades Sex, published in Antwerp in 1583. This is obviously based on Fuchs's figure of the plant, but has the flowers added. This figure is cited by Linnaeus in *Hort. Cliff.* 130 (1736).

In *The Herball or Generall Historie of Plantes*, first published by John Gerard in 1597, amended by Thos. Johnson in 1633, London, the Aloe figure on p. 507 is an exact copy of Dodonaeus's figure, but he calls it "*Aloe vulgaris, sive Sempervivum Marinum, Common Aloe or Sea Houseleek.*" It seems that Gerard took over much of Dodonaeus's work and passed it off as his own.

Abraham Munting or Muntingius, figured three aloes in his *Aloidarium* (1680), one of them being *Aloe vera vulgaris* on fol. 19. This is generally accepted by Lamarck, Haworth and others as representing *A. barbadensis*.

#### TYPE LOCALITY AND DISTRIBUTION

In his original listing of *Aloe perfoliata* (var.  $\pi$ ) *vera*, in *Spec. pl.* 1: 321 (1753), Linnaeus gives "*Habitat in Indiis*" which is almost certainly India. Whether his plant grew wild in India, or whether it originated elsewhere and was merely shipped from India (Bombay) is not known. In ed. 3: 458 (1764) Linnaeus states: "In Indiis, Africa, and  $\pi$  in Italy and Sicily."

Against this, *A. indica* Royle (which might or might not be a form of *A. barbadensis*) is stated by Royle to be common in the North-Western Provinces of India, and also frequently cultivated in gardens. Miller, in *Gard. Dict.* no. 2 (1768) says: "The second sort (*A. barbadensis*) is very common in the Islands of America where the plants are propagated to obtain the Hepatic Aloes which are brought to England and used chiefly for horses, being too coarse for medicine."

In *Trans. Linn. Soc.* 18: 176 (1880) Baker records that "*A. vera*" was introduced into English gardens in 1596 from the Island of Barbados (where it had doubtless been taken by earlier travellers).

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