THE BOTANY OF THE COMMELINS

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THE BOTANY OF THE COMMELINS

PROEFSCHRIFT TER VERKRIJGING VAN DE GRAAD VAN
DOCTOR IN DE LANDBOUWWETENSCHAPPEN,
OP GEZAG VAN DE RECTOR MAGNIFICUS, DR. C.C.OOSTERLEE,
HOOGLERAAR IN DE VEETEELTWETENSCHAP,
IN HET OPENBAAR TE VERDEDIGEN
OP WOENSDAG 21 SEPTEMBER 1983
DES NAMIDDAGS TE VIER UUR IN DE AULA
VAN DE LANDBOUWHOGESCHOOL TE WAGENINGEN

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Aan hoveniers en bloemschilders,
voor de lafenis die zij schenken bij de nomenclatuur

Curriculum vitae

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Samenvatting/Summary

In *The Botany of the Commelins* worden de planten behandeld, die afgebeeld zijn in de Moninckx Atlas en de vier geillustreerde werken van Jan en Caspar Commelin over de exotische planten in de Hortus Medicus van Amsterdam. Afbeeldingen van deze planten zijn tussen 1686 en 1709 gemaakt door een aantal schilders, vooral Jan en Maria Moninckx.

De eerste taak die de auteur zich gesteld heeft, is de afgebeelde planten te identificeren en die determinaties te bediscussiëren met betrekking tot eerdere interpretaties in de literatuur. Hieruit resulteren conclusies over de interpretatie en typificatie van vele plantnamen, die door 18e en 19e eeuwse botanici, vooral door Linnaeus, gepubliceerd zijn. Van dertien soorten uit Zuid Afrika, Europa en tropisch Amerika moet de nomenclatuur veranderen.

De inleidende hoofdstukken behandelen de geschiedenis van de Hortus, de botanici die er werkten en de verzameling aquarellen die in de Hortus gemaakt zijn.

Appendix A geeft een gereconstrueerde catalogus van de Hortus-bibliotheek ten tijde van de Commelins, die tevens een index is op de door hen geciteerde literatuur.

Appendix B bevat biografische aantekeningen over bestuurders, kunstenaars, verzamelaars, hoveniers en botanici, die met de Hortus, de planten en de boeken erover te maken hadden.

The Botany of the Commelins deals with the plants pictured in the Moninckx Atlas and the four books by Jan and Caspar Commelin on the exotic plants in the Hortus Medicus of Amsterdam. Water-colours were painted of 420 plants during the years 1686-1709 by a number of artists, mainly by Jan and Maria Moninckx. The author's main purpose is to identify these plants and to discuss these interpretations in connection with previously published comments, resulting in conclusions on the interpretation and typification of plant names published by 18th and 19th century botanists, mainly by Linnaeus. Thirteen species from South Africa, Europe and tropical America have their nomenclature amended.

Introductory chapters give surveys of the history of the Hortus, the botanists who worked there, and the Moninckx Atlas.

Appendix A provides a reconstructed catalogue of the institutional library of the Hortus at the time of the Commelins, which is also an index to the literature cited by them.

Appendix B lists biographical notes on governors, artists, collectors, gardeners and botanists, who contributed to the garden, its plants and books.

Inleiding

GESCHIEDENIS

De Hortus Medicus Amstelodamensis werd in 1682 door het stadsbestuur gesticht in een nieuwe uitleg van de stad Amsterdam, de Plantage, als een tuin voor het onderwijs in de medicinale planten. Frederik Ruysch (1638-1731) fungeerde vanaf 1685 als hoogleraar om dit onderwijs te geven.

Twee, later drie, 'commissarissen' bestuurden de Hortus. Joan Huydecoper en Jan Commelin werden in 1683 als eersten in die functie benoemd. Huydecoper (1625-1704) was een vooraanstaand lid van de Amsterdamse regentenkringen als burgemeester van Amsterdam en directeur van de VOC. Jan Commelin (1629-1692) kwam voort uit een geslacht van drukkers. Hij handelde in farmaceutische artikelen, werd in 1672 benoemd in de Vroedschap van Amsterdam, en publiceerde over gekweekte en wilde planten. Zo werd Commelin wel een vooraanstaand lid van de Amsterdamse samenleving, maar niet zo voornaam als Huydecoper.

De internationale contacten van de Hortus werden vooral in de eerste jaren door Huydecoper behartigd; Commelin zorgde meer voor de tuin zelf. In 1690 volgde Commelins benoeming tot 'commissaris-practicus'. De Hortus ontwikkelde een acquisitie-beleid, dat naast een collectie medicinale planten, leidde tot een aanzienlijke, internationaal toonaangevende collectie exotische gewassen. Deze planten kwamen uit de tropen en subtropen, vooral uit gebieden waar de VOC en WIC het bewind voerden (zie kaart op p.5). Vele correspondenten stuurden zaden en planten; de belangrijkste onder hen waren: Cornelis van Aerssen van Sommelsdijk (Suriname), Andreas Cleyer (Java), Laurentius Pijl (Ceylon), Simon en Willem Adriaen van der Stel (Kaap de Goede Hoop) en Joseph Pitton de Tournefort met Andreas Gundelsheimer (Turkije). De Amsterdamse regenten bemiddelden soms via hun relaties met de VOC en de WIC voor de Hortus, zoals Joannes Hudde, Joan Huydecoper, Gerbrand Pancras, Jacob Scott, Pieter Ranst Valckenier en François de Vroede. Ook bezitters van particuliere tuinen leverden planten aan de Amsterdamse Hortus, zoals Simon van Beaumont (Den Haag), Agnes Block (Loenen) en Gerard Röver (Velsen). Amerikaanse planten kreeg de Hortus via de tuin van Bisschop Henry Compton uit Londen.

Dikwijls blijkt, dat de introductiedata in Amsterdam vroeger zijn dan in de literatuur wordt opgegeven, b.v. *Caladium bicolor* 1704 tegen 1773, *Hexaglottis lewisiae* 1688 tegen 1766, *Homeria flaccida* 1690 tegen 1810, *Coreopsis grandiflora* 1706 tegen 1821.

Na de dood van Jan Commelin in 1692 werd Petrus Hotton (1648-1709) aangesteld als botanicus aan de Hortus. Hotton had in Leiden gestudeerd en daar Paul Hermann's professoraat waargenomen tijdens diens verblijf op Ceylon. Na de dood van Hermann (1646-1695) nam Hotton definitief diens plaats in. Caspar Commelin (1668-1731) werd in 1696 aangesteld als opvolger van Petrus Hotton. Caspar was de zoon van Caspar Commelin sr., die uitgever-drukker en historicus was en een broer van Jan Commelin. Caspar had in tegenstelling tot zijn oom Jan een academische opleiding gevolgd bij Paul Hermann in Leiden.

DE MONINCKX ATLAS

Vanaf 1686 zijn er in de Hortus afbeeldingen gemaakt van planten uit de tuin. Meestal betrof het zeldzame planten, die waarschijnlijk eerst sinds korte tijd in cultuur waren, maar ook enkele al meer algemeen bekende planten zijn afgebeeld. In de periode 1686-1709 hebben vier schilders 420 aquarellen vervaardigd. Deze zijn in acht banden verzameld en staan bekend als de Moninckx Atlas, omdat Jan Moninckx de meeste 'afteekeningen' had vervaardigd: 271 zijn er door hem gesigneerd.

Wie Jan Moninckx was, blijft een nu nauwelijks te beantwoorden vraag. Waarschijnlijk was hij de 'schilder' Johannis Moninckx, die in of voor 1698 huwde met Adriaentje Uchtenbroeck en te Amsterdam werd begraven op 20 mei 1714.

Maria Moninckx werd in Den Haag geboren in 1673 of 1676 en overleed in 1757 te Amsterdam. Zij huwde in 1723 met Martinus de la Ruel te Amsterdam op 47-jarige leeftijd. Wat haar verwantschap met Jan Moninckx was, is niet duidelijk. Mogelijk stammen zij beiden uit het Haagse schildersgeslacht Moninckx. Maria signeerde 101 aquarellen.

Alida Withoos, dochter van de schilder Matthias Withoos, werd in 1659 of 1660 geboren en overleed in 1730 te Amsterdam. Dertien aquarellen zijn door haar gesigneerd.

Johanna Helena Herolt-Graff was een dochter van de vermaarde schilderes Maria Sibylla Merian. Zij maakte twee aquarellen.

Werk van deze vier schilders is ook aanwezig (geweest) in de verzameling schilderingen, die Agnes Block liet vervaardigen van de planten in haar collectie op 'De Vijverhof' te Loenen, zie Van de Graft (1943).

Een 9e deel, bestaande uit vijf aquarellen, completeert de Atlas. Vier zijn gemaakt door Jan Matthias Cock (1720-1770) in 1749 en één, vermoedelijk iets later, door Dorothea Storm-Kreps, die in 1758 trouwde met Johannes Storm, de hortulanus van de Hortus, en in 1772 overleed.

De aquarellen in de Moninckx Atlas meten 53 bij 36 cm en zijn op perkament geschilderd. Naast het historisch-botanisch belang, dat zij vertegenwoordigen, zijn het vaak artistiek fraaie werkstukken, die de aandacht van de kunsthistorici verdienen.

DE GEILLUSTREERDE BOEKEN VAN DE COMMELINS

De botanici Jan en Caspar Commelin hebben vier boeken gepubliceerd over de zeldzame planten in de Hortus (1697, 1701, 1703, 1706). Hierin zijn 305 afbeeldingen opgenomen, waarvan er 273 gebaseerd zijn op de aquarellen uit de Moninckx Atlas.

Jan Commelin schreef het eerste deel van de *Horti medici Amstelodamensis rariorum plantarum historia.* Waarschijnlijk was dit boek in 1691 al goeddeels klaar, maar het overlijden van Jan Commelin op 19 januari 1692 heeft de publicatie blijkbaar vertraagd. In 1697 is het tenslotte toch verschenen met aantekeningen van de professor aan de Hortus, Frederik Ruysch en de Haagse apotheker-botanicus, Frans Kiggelaer (1648-1722).

Caspar Commelin schreef het tweede deel van dit folio-werk (1701) in dezelfde trant als zijn oom, maar met een sterker accent op de taxonomie. De *Praeludia botanica* (1703) geven de tekst van twee van zijn colleges, die vooral *Euphorbia* en *Aloe* behandelen. In 1701 was Caspar tot lector benoemd en in 1706 volgde zijn benoeming tot professor naast Frederik Ruysch. In dat zelfde jaar verscheen ook *Plantae rariores et exoticae*, het laatste botanische werk van de Commelins, afgezien van een heruitgave in 1715 van de *Praeludia botanica* met de *Plantae rariores et exoticae.* In 1707 werd Caspar Commelin benoemd tot 'Compagnies Doctor' van de VOC en in 1711 volgde zijn benoeming tot inspecteur van het Collegium Medicum. Hierdoor raakte hij steeds verder verwijderd van de taxonomische botanie in de richting van de medicinale plantkunde, zoals onder meer blijkt uit de uitgave in 1726 van de *Pharmacopaea Amstelredamensis renovata* in samenwerking met anderen.

NOMENCLATUUR

De afbeeldingen en beschrijvingen in de boeken van Jan en Caspar Commelin zijn dikwijls geciteerd en geinterpreteerd in de botanische literatuur. De interprestaties door Linnaeus zijn van groot belang voor de huidige nomenclatuur van de betreffende planten. Zijn *Species plantarum* (1 mei 1753) geldt als het startpunt voor de wetenschappelijke naamgeving van vaatplanten. Linnaeus interpreteerde 259 van de 305 door de Commelins gepubliceerde platen, in *Species plantarum* en in latere werken. Soms verschilden zijn interpretaties aanzienlijk in de loop der tijd. Zo heeft Linnaeus *Jacobaea Africana frutescens crassis & succulentis foliis* Caspar Commelin 1701, p.147 t.74, geciteerd voor *Othonna cheirifolia* L. in 1753, voor *Cineraria othonnites* L. in 1763, voor *Othonna crassifolia* L. in 1767 en voor *Othonna frutescens* Bergius (1767) in 1771. De laatste interpretatie deel ik.

Voor 60 namen die Linnaeus gepubliceerd heeft is de afbeelding bij de Commelins als lectotype aangewezen. Ook voor namen van N.L.Burman, Miller, Allioni, Jacquin, Lamarck, Aiton, Haworth, Poiret, Boissier en De Candolle gelden afbeeldingen bij de Commelins als lectotype. Een (lecto-) type is dat element (herbarium-exemplaar, afbeelding, beschrijving) waaraan de naam van een taxon verbonden is, zodat de interpretatie van die naam samenvalt met de interpretatie van het type.

In de meeste gevallen blijkt mijn identificatie van de Commelin-platen conform te zijn aan wat al uit de literatuur bekend was, en zijn er geen nomenclatorische problemen. De bestaande nomenclatuur blijkt dikwijls nog vaster verankerd te kunnen worden door middel van typificatie van de betreffende naam. Soms echter doen zich verrassingen voor, meestal van onaangename aard. Bij de behandeling van soorten waarvoor recente monografieën beschikbaar zijn doen zich de minste problemen voor. Toch konden niet altijd de nomenclatorische beslissingen van monografen gevolgd worden (*Chrysocoma ciliata, Ursinia paleacea* en *Drimia capensis*). Vaak ontbreekt de leidraad van een monografie, met des te meer omzichtigheid dienen de problemen dan behandeld te worden. In een aantal gevallen is een beslissing genomen (*Melianthus comosus* en *M.elongatus; Senecio linifolius* en *S.lythroides; Senecio rigens; Talinum fruticosum; Annesorhiza inebrians* en *Peucedanum gummiferum*), terwijl in andere gevallen van een beslissing is afgezien. Een apart probleem vormen de nomenclatorische belangrijke platen die niet of nauwelijks te identificeren zijn (*Euphorbia trigona, Gleditsia javanica, Varronia alba*).

De naam *Chrysocoma ciliata* L. werd door Bayer (1981) verworpen omdat de naam niet te typificeren zou zijn. Ik meen daarentegen dat deze naam getypificeerd dient te worden met no. 982.4 in Linnaeus

herbarium te Londen. Dit exemplaar behoort tot de soort die tegenwoordig benaamd wordt als *Chrysocoma tenuifolia* Bergius, een naam die thuis hoort in de synonymie van *Chrysocoma ciliata* L.

Commelin's plaat 32 (1701) stelt een *Ursinia* voor (en niet een *Euryops* waarvoor hij tot op heden doorgaat). Prassler (1967) noemt de betreffende soort *Ursinia crithmoides* (Berg.) Poir. Ik beschouw *Ursinia paleacea* (L.) Moench als de juiste naam voor dezelfde soort.

Drimia forsteri (Baker) Oberm. blijkt in 1768 al gepubliceerd te zijn door N.L.Burman als *Scilla capensis*, zodat de correcte naam voor dit forse bolgewas nu *Drimia capensis* (Burm.f.) Wijnands moet luiden. Jessop (1977) voegde deze soort ten onrechte bij *Drimia altissima.*

Melianthus comosus Vahl blijkt een synonym te zijn van *Melianthus minor* L. Deze laatste naam wordt tegenwoordig gebruikt voor een soort die de beschrijvende auteur, Linnaeus, waarschijnlijk nooit gezien heeft. Omdat het verhuizen van de naam *Melianthus minor* van de ene Kaapse soort naar de andere hoogst ongewenst is, wordt voorgesteld de naam te verwerpen en de huidige *'Melianthus minor'* wordt beschreven als een nieuwe soort, *Melianthus elongatus* Wijnands.

Senecio longifolius L., een soort kruiskruid van de Kaap de Goede Hoop, blijkt een ongeldig synoniem te zijn van *Senecio linifolius* L. Deze laatste naam wordt tegenwoordig gebruikt voor een soort uit Marokko, Spanje en de Balearen. De Zuidafrikaanse *Senecio longifolius* L. moet dus nu *Senecio linifolius* L. heten, terwijl voor de mediterrane *Senecio linifolius* (L.) L. de nieuwe naam *Senecio lythroides* Wijnands wordt voorgesteld.

Nog een Kaapse *Senecio* moet van naam veranderen. De reden hiervan is dat *Senecio rigens* L. onjuist geinterpreteerd wordt. Levyns bracht deze naam onder in *Othonna* als *Othonna rigens* (L.) Levyns in Adamson & Salter (1950), niet L. 1760. De juiste naam voor deze *Othonna* is *O.parviflora* Bergius. *Senecio rigens* L. dient mijns inziens getypificeerd te worden met Caspar Commelin's plaat 72 (1701) die de soort toont die nu bekend staat als *Senecio lanceus* Ait.

Jan Commelin's plaat 4 (1697) is geinterpreteerd als *Talinum paniculatum* (Jacq.) Gaertn. en ook als *Talinum triangulare* (Jacq.) Willd. De laatste interpretatie is juist, maar de naam helaas niet. Het basionym *Portulaca triangularis* Jacquin is een jaar jonger dan *Portulaca fruticosa* L. Omdat beide namen op hetzelfde type gebaseerd zijn, Plumiers plaat 150 figuur 2 in de editie van Burman (1757), is de juiste naam voor deze tropische groente *Talinum fruticosum* (L.) Juss.

Commelin's plaat 94 (1701) is het lectotype van *Bubon gummiferum* L. De afbeelding toont de soort die nu als *Peucedanum tenuifolium* Thunb. bekend staat; voor deze soort wordt de naam *Peucedanum gummiferum* (L.) Wijnands voorgesteld. *Bubon gummiferum* werd ten onrechte beschouwd de plant te zijn die nu als *Glia gummifera* (L.) Sonder te boek staat; voor deze laatste soort wordt de naam *Annesorhiza inebrians* (Thunb.) Wijnands voorgesteld. De genusnamen *Bubon* en *Glia* zijn synoniemen van *Peucedanum* en daarom niet voor deze soort geëigend.

Namen waaraan problemen verbonden zijn, staan er nog wel meer in dit boek. Die problemen worden gesignaleerd, maar ik heb afgezien van ingrijpende nomenclatorische beslissingen omdat ik er nog niet geheel van overtuigd ben dat er geen oplossing gevonden kan worden die de huidige nomenclatuur intact laat. Voorbeelden zijn *Dracaena fragrans* (L.) Ker-Gawl. tegen *Aloe fragrantissima* Jacq.; *Aloe glauca* Mill. tegen *Aloe rhodacantha* DC.; *Agave fourcroydes* Lem. tegen *Agave rigida* Mill.; *Aloe saponaria* (Ait.) Haw. tegen *Aloe obscura* Mill.; *Aloe* × *principis* (Haw.) Stearn tegen *Aloe caesia* Salm-Dyck; *Crinum commelynii* Jacq. tegen *Amaryllis propinqua* Salisb.; *Pedilanthus tithymaloides* (L.) Poit. met als neotype Jacquin's figuur 92 (1763) tegen het lectotype in het Clifford herbarium 198.10; *Linaria pyramidata* sensu Davis waarschijnlijk niet sensu Ventenat.

Lang niet alle afbeeldingen van de Commelins kunnen met zekerheid geidentificeerd worden. Dit is vooral hinderlijk bij platen die verband houden met de typificatie van soortnamen: plaat 5 (1703) die als lectotype kan dienen voor *Euphorbia trigona* Haw., en plaat 106 (1697), het lectotype van *Gleditsia javanica* Lam.

Bijzonder gecompliceerd is de problematiek rond Jan Commelin's plaat 80 (1697). Johnston (1940) stelde deze afbeelding voor als het type van *Varronia alba* Jacquin (nu *Cordia alba* (Jacq.) Roem. & Schult., *Boraginaceae*). De plaat is moeilijk te identificeren, maar ik meen erin *Trema micranthum* (L.) Blume, *Ulmaceae,* te herkennen. Commelin's beschrijving echter, die hij ontleende aan mededelingen uit Curaçao, kan zeer wel op de *Cordia* betrekking hebben. *Varronia alba* Jacquin dient daarom als naam verworpen te worden, de juiste naam voor de *Cordia* is dan *Cordia dentata* Poiret.

STELLINGEN

1

Bij de typificatie van Linneaanse soortnamen spelen alleen die elementen een rol, waarvan aangetoond kan worden dat ze mede vorm gegeven hebben aan de omgrenzing die Linnaeus aan het betreffende taxon gaf.

Stelling II bij het proefschrift van B.E.E.de Wilde-Duyfjes, 1977, Wageningen

2

De rol van Nederland in de geschiedenis van de introductie van exotische planten wordt dikwijls onderschat. Dit wordt mede veroorzaakt doordat de rijke botanische verzamelingen uit de 17e en 18e eeuw in Nederland slechts fragmentarisch bewaard zijn gebleven.

Dit proefschrift

3

De sterke groei van de botanische collecties in Engeland in het laatste decennium van de 17e eeuw, is in belangrijke mate gevoed vanuit Holland, vooral gedurende de regering van Koning-Stadhouder Willem III.

W.L.Tjaden, 1981, *Taxon* 30:295 eerste alinea

4

Het gebruik van de term 'taxonomie' als synoniem voor een fylogenetisch begrepen systematiek is historisch onjuist.

H.J.Lam, 1957, *Taxon* 6:213-215

5

Voor de ontwikkeling van de systematiek en nomenclatuur van cultuurplanten is uitbreiding van het netwerk van competente registratie-autoriteiten van primair belang.

6

Herbaria, genenbanken en botanische tuinen kunnen hun sterk aan elkaar verwante doelstellingen het best in een hechte samenwerking realiseren. Zij dienen niet verenigd te worden tot 'phytotheken'.

Stelling 8 bij het proefschrift van J.S.Siemonsma, 1982, Wageningen

7

Bij het onderzoek naar de bruikbaarheid van *Aster tripolium* als bladgroente, dient het verschil tussen de populaties in het variërende aantal secundaire bladrozetten, de aandacht te krijgen.

D.O.Wijnands, 1969, *Een onderzoek naar de variabiliteit van* Aster tripolium *in Nederland*

8

Bomen en heesters die op oude buitenplaatsen en landgoederen hun groeikracht en gezondheid hebben bewezen, dienen, meer dan nu gebeurt, in de Nederlandse boomkwekerijen vermeerderd te worden. Zulk materiaal dient ook gebruikt te worden bij historisch verantwoord herstel van oude buitenplaatsen.

9

Het opnemen van het Museumbeleid in de Kaderwet specifiek welzijn houdt een ernstige bedreiging in voor het voortbestaan van die Natuurhistorisch Musea, die niet door de Rijksoverheid gesubsidieerd zullen worden.

Naar een nieuw Museumbeleid, 1976, Tweede Kamer zitting 1976-1977, 14290 nr. 2. Kaderwet specifiek welzijn, Tweede Kamer zitting 1980-1981, 14493 nr. 167

10

In de op handen zijnde Wet bedreigde uitheemse dier- en plantesoorten dient een zodanig onderscheid gemaakt te worden tussen uit het wild afkomstige planten van te beschermen soorten en kunstmatig gekweekte planten van deze soorten, dat in elk geval de uitvoer van Nederlandse sierteelt-producten zoals planten van *Cyclamen*-rassen en snijbloemen van orchideeën, geen belemmeringen zal ondervinden.

11

Het zal steeds moeilijker worden, onderzoek als in dit proefschrift beschreven is uit te voeren, als gevolg van de verminderende dienstverlening van de Nederlandse Universiteits-bibliotheken.

12

Het begrip 'selfish gene' vertroebelt de discussie over sociobiologie.

F.B.M.de Waal (red.), 1981, *Sociobiologie ter discussie*

13

De verwoestingen die het feminisme aanricht, zijn een begeleidend verschijnsel van een noodzakelijk historisch proces.

G.Grass, 1979, *Der Butt*

Proefschrift van D.O.Wijnands: The botany of the Commelins. Wageningen, 21 september 1983

Table of contents

Introduction

This book deals with the plants grown in the Hortus Medicus of Amsterdam around 1700 as represented by a collection of water-colours, the Moninckx Atlas, and also in the published volumes on these plants by Jan and Caspar Commelin.

The present author made his acquaintance with the Moninckx Atlas and the works of the Commelins in 1967 when he was appointed scientific officer at the Hortus Botanicus of the University of Amsterdam. A display cabinet in the first floor gallery of the main hall of the Hugo de Vries-laboratory contained the nine volumes of the Moninckx Atlas. These volumes intrigued him. Apart from his normal duties in the garden, he gradually began to assemble the material for this book and its contents grew equally in the process.

Conditions changed in 1977 when he left Amsterdam for Wageningen. The Moninckx Atlas was no longer within immediate reach. However, the rich herbarium collections in Wageningen added a new dimension. As his colleagues in Wageningen gave him permission to spend some time during office hours on this project in the course of 1981 and 1982, the book finally took shape.

The primary purpose of this book is to establish the identity of the plants pictured in the Moninckx Atlas and in the published works of the Commelins. The interpretations of these plates in the botanical literature have been traced. This survey is, of necessity, incomplete, but all references that could be of nomenclatural importance are included; at least this was the goal of the author. The nomenclatural status of the plates as regards typification has been another major issue.

Historical data on the Hortus Medicus, the Commelins, and many other related subjects are intended to supply some background information. It is left to others to describe and analyse these subjects more comprehensively.

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Part 1

History

1

The Hortus Medicus Amstelodamensis 1682-1710

The history of the Hortus Medicus in Amsterdam prior to 1682 has been described by several authors (Stomps 1932 and 1951, Van Seters 1954, Jeurissen & Fournier 1970). Several medical gardens have existed in Amsterdam successively from about 1638 onward, at different locations. Catalogues of the collections were published by Johannes Snippendael (1646): *Horti Amstelodamensis alphabetico ordine exhibens . . . stirpes*, and by Herman Cornelisz (1661): *Catalogus plantarum horti publici Amstelodamensis*, respectively.

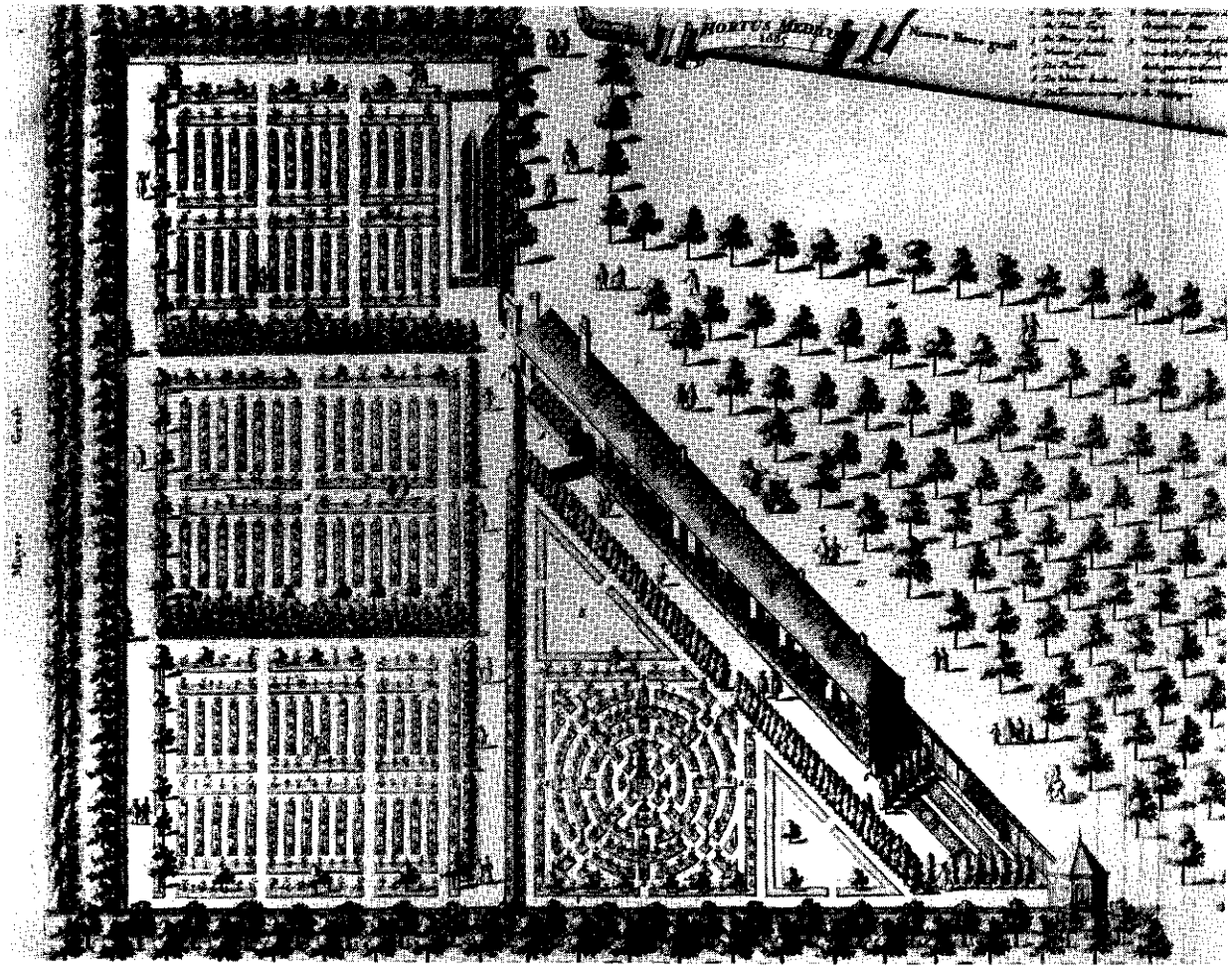
The Hortus Medicus where the Commelins grew their plants was founded on November 12, 1682 by decree of the city council of Amsterdam. It was situated in a new extension of the city, 'De Plantage'. The present Hortus Botanicus of the University of Amsterdam still occupies the same site. Jan Commelin and Joan Huydecoper van Maarseveen were nominated as 'Commissarissen' ('Commissioners') of the Hortus Medicus. Both men were leading citizens occupying important positions in the city council and they owned private estates incorporating botanical collections. In city and state affairs, Huydecoper was by far the most influential of the two. Commelin probably was responsible for the daily management of the Hortus, certainly from 1690 onward when he was nominated 'commissaris practicus'. Jan de Vlieger was appointed as first gardener in the new Hortus Medicus.

As the Hortus was to serve the medical profession, the 'Collegium Medicum' and the 'Collegium Chirurgicum' paid a substantial annual contribution towards its budget. The garden contributed to the training and examination of surgeons, apothecaries and their assistants and plants could be purchased by apothecaries.

The Burgomasters of Amsterdam arranged for lessons to be given in medicinal botany in connection with the newly established Hortus Medicus. Frederik Ruysch was appointed in 1685 as the first Professor Botanicis to lecture on medicinal plants. The Hortus was an independent institution governed by the Commissarissen; it did not form part of the Athenaeum Illustre. As such the Hortus had its own library. A reconstructed catalogue of this library is listed in Appendix A.

Although the garden was primarily founded for medical purposes, the Commissarissen demonstrated a purely botanical interest from the very beginning as well. Huydecoper and Commelin made use of their connections with owners of private collections in Holland and abroad to enrich the garden with exotic plants.

Title-page of *Horti medici Amstelodamensis rariorum plantarum historia*, volume I, 1697. Seated is Flora with the coat of arms of Amsterdam. Europa, America, Asia and Africa offer her flowers, which are passed on to the public. The botanical garden shown in the background certainly does not represent the Hortus Medicus of Amsterdam. Two vases adorn the lower corners, one with *Ananas comosus*, the other with *Euphorbia antiquorum*. The book was printed by the famous house of Blaeu and distributed by A.van Someren. The first copies were distributed in January 1697.



Plan of the Hortus Medicus in 1685 as published by Caspar Commelin sr. in *Beschrijvinge van Amsterdam* (1693).

However, the main source for such novelties was their relation with the Dutch East and West India Companies, VOC and WIC. During the first years Huydecoper maintained these contacts personally, but later on he advised his correspondents to send the plants directly to Commelin. The persons who supplied the Hortus with plants are listed in Appendix B, together with others who were connected with the published works of the Commelins on plants grown in the Hortus.

From 1686 onward, water-colours were made of the exotic plants in the Hortus, resulting in the first eight volumes of the Moninckx Atlas. This collection served as the main source for the illustrations of the four volumes published by Jan and Caspar Commelin (in 1697, 1701, 1703, 1706 respectively). Jan Commelin died in 1692, his volume on rare and exotic plants grown in the Hortus was posthumously edited by Frederik Ruysch and Frans Kiggelaer (1697).

Jan Commelin's successor as Horti Medici botanicus was Petrus Hotton, who kept this post until 1695. No publications by Hotton on the Amsterdam Hortus are known to exist, nor are the results of his activities apparent from contemporary publications. The production of water-colours for the Moninckx Atlas virtually ceased during his years in office in Amsterdam.

After Hotton had left for Leiden in 1695, Caspar Commelin was nominated in 1696 as Horti Medici botanicus. Caspar showed an interest in systematic botany as is evident from his elaborate discussions in the second volume on rare and exotic plants of the Hortus (1701), and by his two published serial lectures (1703). He was much more of a taxonomist than his uncle Jan, who based his taxonomy mainly on Ray. From Caspar's work appears a more critical and independent attitude. However, the medical qualities of plants certainly held his interest and after his appointment as Professor Botanicis in 1706, he confined his published efforts to this field.

Map showing the areas from where plants have been introduced into the Hortus Medicus Amstelodamensis, 1682-1710. Europe and Mediterranean (44 species); Near East (13); S.Asia (24); E.Indies (12); Japan (2); S.W.Cape (227); E.Cape (2); tropical Africa (7); Macaronesia and Morocco (16); S.America (48); C.America (9); W.Indies (30); N.America (10).

Chief gardener (nowadays he would be called curator or in Holland 'hortulanus'*) Jan de Vlieger died in 1697; he was succeeded by Hendrik Gerritsz who held this post till 1709. Stomps (1932:396) has it that Hendrik Gerritsz was succeeded by H.G.Kruyper, but since the memoriael** of, for example, November 19, 1709 refers to Hendrik Gerritsz Kruijper, only one person seems to be involved. Cornelis Vos was chief gardener from 1709 to 1734. In Vos' days the position seems to have been a rather prominent one, as can be inferred from the fact that Tilli (1723) acknowledged both Commelin and Vos ('Foss') for plants he had received from them in the Hortus of Pisa. Commelin may have delegated some of his responsibilities to Vos when his involvement in medical affairs became predominant.

The Amsterdam Hortus was just a 'morgen' (circa one hectare) in size, and was laid out on a wet peaty soil that first had to be raised. Its lay-out is shown on a plan published by Caspar Commelin sr. in 1693. The main features are formal, rectangular and circular beds, cold frames, an orangery, and a stove ('warmstoof'). This last facility made it possible to cultivate tropical plants.

Many more data about the history of the Hortus Medicus are still available, published and unpublished. The present note is merely intended to supply some relevant data concerning the garden at the time of the Commelins.

* The first 'hortulanus' who had the title was Lambert van Cathagen in Leiden (1667), see Karstens & Kleibrink 1982:29.
** The cash-book of the Hortus, see 'The production of the water-colours'.

2

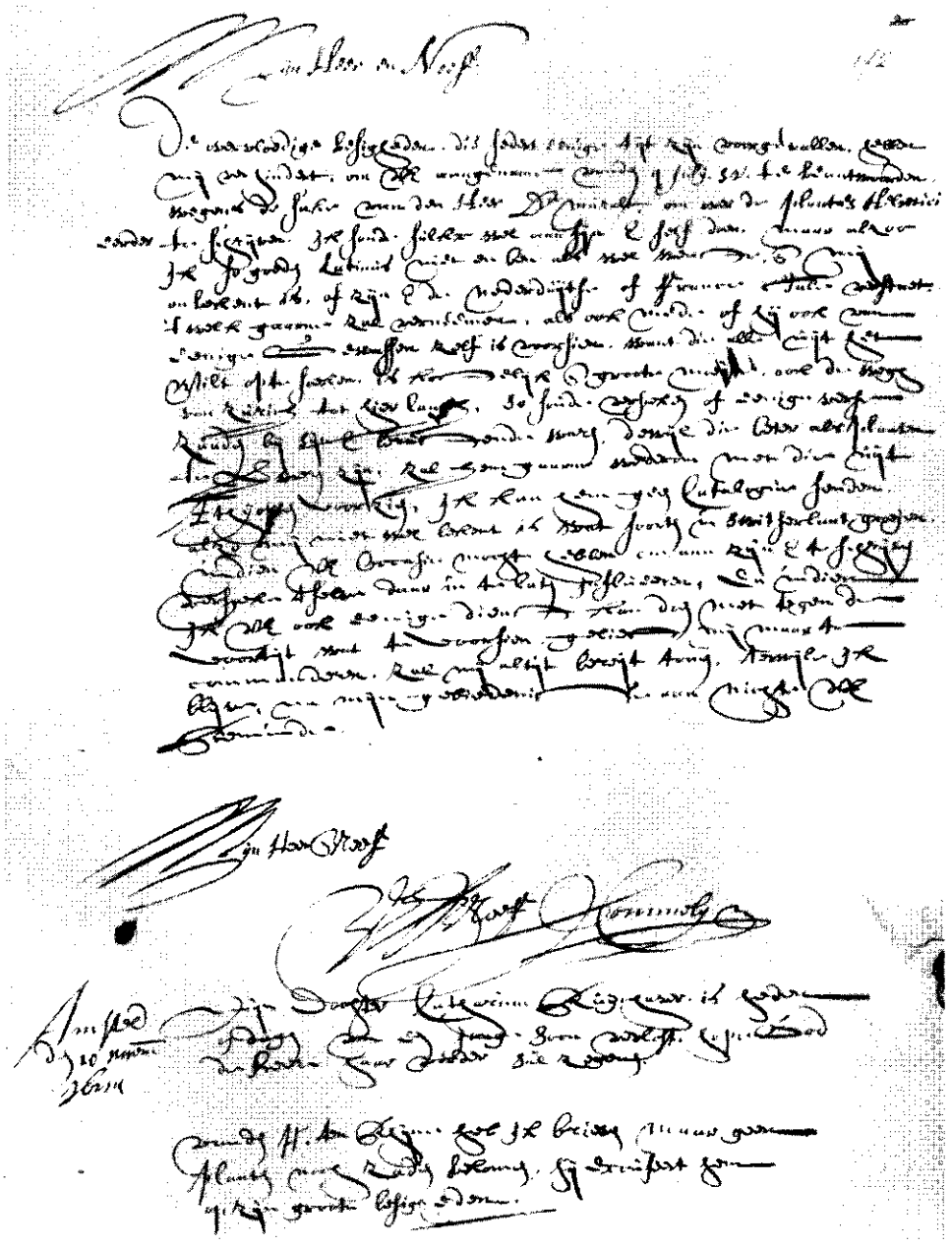
Jan Commelin

This account is based on Hunger (1924) and Jeurissen & Fournier (1970). The literature references in these papers are not repeated here. Much more is to be found in several archives and in correspondence. This material will be sorted, published and discussed by J.Heniger, Biohistorisch Instituut, Universiteit van Utrecht. I will restrict this chronological survey to essentials, to provide some background for the understanding of his work, and of the Hortus Medicus and the books.

Coat of arms of Jan Commelin in Atlas volume 1.

Orthography of the name. Various spellings of the name are used, contemporarily, as was common in the period, and later. His christian name is spelled Johannes, Joan or Jan, his surname as Commelin, Commelyn, Commelijn, Comelijn or latinised as Commelinus. I selected the version Jan Commelin.

1629. Jan was born at Leiden on April 23 or July 23 and baptised July 27 in the Pieterskerk, belonging to the Dutch Reformed Church. He was the son of Isaac Commelin (Amsterdam 1598 Oct.19 - Amsterdam 1676 Jan.13), owner of a publishing company with his brother Jacob, from 1624 onward; and of Cornelia Bouwer (Amsterdam 1607 Oct.16 [baptised] - Amsterdam 1641 Nov.11 [dead or buried]).
1641. The Commelin family moved to Amsterdam, where they lived at the Gelderse Kade. Jan's mother died in the same year.
1649. The family moved to 'achter de Oude Kerk' ('behind the Old Church').
1652. On August 13 he married Digna van Wissel (1633-1671 July 24 [buried] Amsterdam), daughter of Johannes van Wissel (druggist) and Petronella Hondius.
1652. On December 28 Commelin was registered as 'poorter', i.e. citizen with all civil rights.
1655. Commelin is 'coopman'; he was an important merchant in pharmaceuticals, supplying the Amsterdam drugstores and hospitals but also elsewhere in Holland, e.g. in Gouda.
1666. He was nominated a trustee of the 'Spin- en Werkhuis', a punitive municipal establishment. It is the first official post he held in the Amsterdam administration. As a trustee, he is shown on the painting of 1669 of the trustees by K.du Jardin, in the Rijksmuseum, Amsterdam.
1670. On September 9 he was nominated lieutenant of the Municipal Artillery, another office marking his acceptance in the Amsterdam leading circles.
1671. Digna, Commelin's wife, died. Only two of their 10 children survived to witness this.
1672. On Sept.10 Commelin was nominated 'Raad' (Council) in 'de Vroedschap' (City Council) by Stadtholder Willem III (who became King William of England in 1688). Political turmoil in Amsterdam prompted



Handwriting of Jan Commelin in a letter of November 10, 1684 to Caspar Sibelius van Goor, Deventer. Sloane Manuscripts 2729, fol.164. Courtesy British Library, Department of Western Manuscripts.

the nomination of many new councillors. Relatives of Commelin took part in the political activities of the winning party. Commelin is now one of the 36 Councillors and, therefore, a leading member of the Amsterdam society. He never reached the top: to become one of the four Burgomasters. Commelin sat on several other committees between 1672 and 1692.

1675. On Feb.5 Commelin remarried Belia Vinck (1630-1697), widow of Willem Ruychaver.

1676. His first book, on the cultivation of citrus fruits, was published. It is based on J.J.Pontanus, *Horti Hesperidum libri II*, Florentinae 1514 and, for a greater part, on J.B.Ferrarius, *Hesperides*, Romae 1646. Commelin named his book *Nederlantze hesperides, dat is, oeffening en gebruik van de limoen- en oranjebomen, gestelt na den aardt en climaat der Nederlanden.* It was published by Marcus Doornik, Amsterdam, as a folio. In 1695 a duodecimo edition was published, without the illustrations, at Gendt by Hendrick Saetreuver.

On Dec.13 Belia Commelin bought an estate 'Zuyder-

Jan Commelin (the second from right) in 1669 as a trustee of the 'Spin- en Werkhuis'. Painting by Karel du Jardin. Courtesy Rijksmuseum, Amsterdam.

hout' south of Haarlem. There Commelin developed a collection of exotic plants.

1678. The first volume of *Hortus Malabaricus* was published in April or May. This book, organised by Hendrik Adriaan van Reede tot Drakenstein, was written largely in Cochin, the Dutch VOC headquarters in Malabar, in the years 1674-1677, to be emended and augmented afterwards. The first volume was edited by Johannes Casearius, who died in 1677, and Arnold Syen, a professor of medicine and botany at Leiden. Syen died 1678, Oct.21, shortly after the publication of the first volume. Commelin took Syen's place and annotated and arranged the volumes 2-11 and part of volume 12. He died before he could finish volume 12 (1692). Volume 12 was published in 1693 (not in 1703 as the title-page has it and as is commonly accepted). The years of publication are as follows: I:1678, II:1679, III:1682, IV:1683, V:1685, VI:1686, VII:1688, VIII: 1688, IX:1689, X:1690, XI:1692 and XII:1693. See Fournier (1980), for a detailed account of *Hortus Malabaricus.*

1682. On Nov.12 the city council decided to establish the Hortus Medicus in 'De Plantage', the new outlay of the city. Jan Commelin and Joan Huydecoper van Maarseveen, his colleague in the council, were nominated commissioners in 1683.

1683. The first flora of Holland, with many ecological data, was written by Jan Commelin: *Catalogus plantarum indigenarum Hollandiae,* 115 pages in duodecimo, published by Henr. and Vidua Theod.Boom, Amsterdam. It was published in one volume with Lambertus Bidloo, *Dissertatio de re herbaria,* 79 pp. A second, only slightly different edition, was published in 1709 by Johannes Arnoldus Langerack, Leiden.

1683. An English translation of *Nederlantze Hesperides* is published in London by Holford: *The Belgick, or Netherlandish Hesperides, that is the Management, Ordering and Use of the Limon and Orange Trees* by J.Commelin made English by G.V.N.

1684. *Nederlantze Hesperides* was reprinted (published by Gijsbert de Groot, Amsterdam).

1686. Work on the water-colours of plants in the Hortus Medicus was started, before July.

1687. Commelin translated and annotated a book on fruit trees by LeGendre: *Manière de cultiver les arbres frutiers où il est traitée des pépinières, des espaliers, des coutres-paliers des arbres en buissons et à haute tige,* Paris 1652.

It was published by Jan Rieuwerstsz de Jonge, Amsterdam in octavo entitled: *Oeffening van Vrught-boomen* Door den Heer LeGendre Parochiaan van Henonville Uyt het Frans vertaalt, en met eenige Aantekeningen

verrykt, Door Jan Commelin. XXXVI + 166 + 11 pp.*
1689. Johannes Commelin's *Catalogus plantarum Horti medici Amstelodamensis pars prior* was published by Arnold Oosaen, Amsterdam as an octavo with 371 numbered pages; some 2200 kinds of plants are enumerated. It was printed 'ex typographia Commeliniana', i.e. by his brother Caspar Commelin. The second part was never produced. The book is arranged according to John Ray's system, *Methodus Plantarum* (1682) and *Historia Plantarum* (1686-1688). A title-edition was produced in 1702 in Amsterdam, printed by Rudolf and Gerhard Wetstenios.
1689. Commelin was nominated 'Houtvester' (forester) of Amsterdam, which function gave him authority over all of the 'Plantage', and all other plantations in Amsterdam, not of the Hortus alone.
1690. On April 29 Commelin was nominated commissaris-practicus of the Hortus, a title confirming his leadership of the garden, an annuity of *f* 500,– giving it some substance.
1690. The first volume of the Moninckx Atlas was completed, compiled and written up.
1691. Preparations for the production of *Hortus Amstelodamensis* were made since 'Swarte Kunst', i.e. drawings in ink for the engraver – not a mezzotint in this case – were being made. It was published in 1697.
1692. Commelin died on Jan.19. He was buried on Jan.26 in the Oude Kerk. His private collection of living plants at Zuyderhout was auctioned on June 5. The estate was sold in 1695. His wife Belia died in August 1697.

Summing up, Jan Commelin made his career as a merchant in pharmaceutical commodities. His way into the government of Amsterdam was due to his success as a merchant, in good Amsterdam capitalist tradition. Political changes in 1672 further promoted his career. The botanical know-how he acquired in his trade and by his keen interest made him a well-known and accomplished botanist. A professor he never was, although that is generally assumed. The professor of botany at the Hortus was Frederik Ruysch.

* This work was often published with various editions and translations of: P.van Aengelen, *De verstandige hovenier, over de twaelf maenden van 't jaer.* M.W.Doornick Amsterdam, 1661. Commelin probably was involved in (some of) these editions and translations; a bibliographical analysis is needed to elucidate Commelin's rôle.

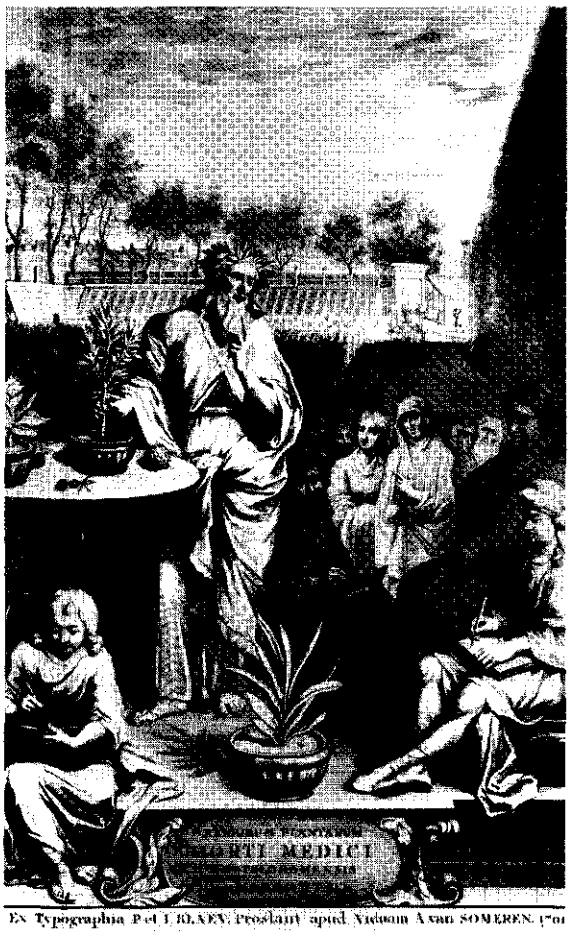
3

Caspar Commelin

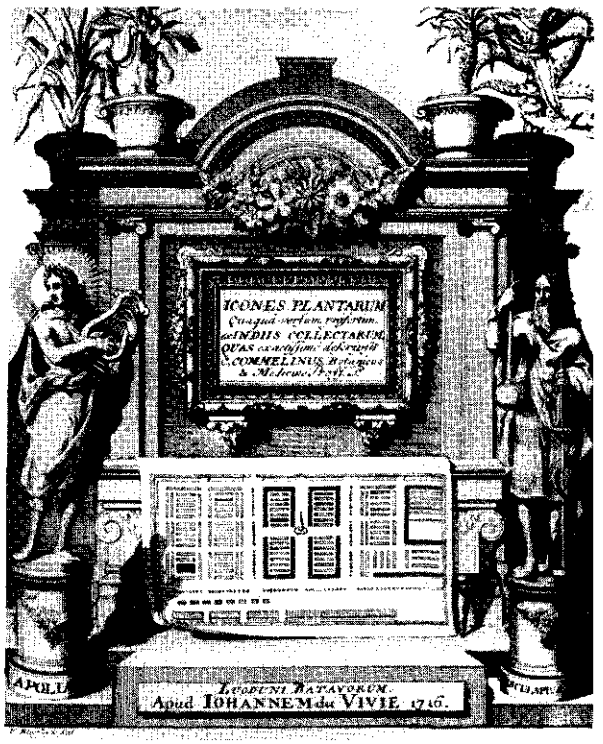
1667. Commonly Caspar is said to be born in 1667, but this date is probably erroneous.
1668. Caspar was baptized on October 14 in the Oude Kerk, Amsterdam. His father was Caspar Commelin (Leiden 1636 - Amsterdam 1693), his mother Margrieta Heydanus (1639-1669). Caspar sr. was a brother of Jan Commelin. He was a printer, publisher and bookseller. Besides he was a historian who wrote *Beschrijvinge van Amsterdam . . .*, published posthumously in 1693. Margrieta was a daughter of Johannes Heydanus, a minister of the Dutch Reformed Church who became librarian of the Amsterdam Athenaeum Illustre in 1667.
1692. On Sept.12 Caspar was immatriculated as a student of medicine in Leiden. Paul Hermann was the professor of botany at that moment.

Caspar Commelin jr 1700-1734 (water-colour and crayon). Courtesy Municipal Archives Amsterdam, Album Backer.

1694. On Feb.27 Caspar took his doctor's degree on a thesis *Disputatio medica inauguralis de lumbricis,* Abraham Elzevier, Leiden. The main text covers only 12 pages.
1695. Petrus Hotton was called to Leiden to take the chair of botany as successor of Paul Hermann. Hotton resigned from his position in Amsterdam on April 1.
On April 14 Commelin acquired the rights of 'poorter', i.e. citizen of Amsterdam. He practised as a medical doctor.
1696. On Sept.18 Caspar Commelin was appointed in Hotton's place as botanist of the Hortus Medicus. This position had been vacant for a year and a half.
Caspar's first book on botany clearly leans heavily on his uncle's work. It is an index to Reede's *Hortus Malabaricus* with synonyms given by other botanists. It certainly made access to this 12-volume work much easier. The title is: *Flora Malabarica sive horti Malabarici catalogus exhibens omnium ejusdem plantarum nomina, tum veteribus tum recentioribus botanicis collegit, et in ordinem alphabeticum digessit. Casparus Commelin, Med. Doctor, et in Horti medici Amstelodamensis Botanicus. Lugduni Batavorum apud Fredericum Haaringh Bibliopolam MDCXCVI.* The main text covers 284 octavo pages. A folio edition was published simultaneously, the text covering 71 pages.
1698. Commelin's catalogue of medicinal plants in the Hortus Medicus was published: *Horti medici Amstelaedamensis plantarum usualium catalogus.*
During this year, work on the preparation of volume 2 of the *Hortus Amstelodamensis* gained impetus again. After some years with but little production (1691-1697), some 65 water-colours were done in 1698, and also 'swarte kunst', drawings for the engraver, was produced.
1699. Johanna Helena Herolt was paid for two water-colours, which proves that there was contact with the daughter of Maria Sibylla Merian. This relationship grew into a co-operation, see the entry on 1705.
The preparations of the drawings for volume 2 of the *Hortus Amstelodamensis* were completed.
On Feb.27 Caspar married Johanna de Vogel. It was her second marriage.
1701. The second volume of the *Hortus Amstelodamensis* came from the press.



Title-page of *Rariorum plantarum horti medici Amstelaedamensis historia*, volume II, 1701. The plate shows a pseudo-classically garbed lecturer (Theophrastos?) with his students. The discussion is on *Leucadendron argenteum*. The background shows a part of the Hortus Medicus, looking northwards to the gate. The trees behind the fence are in 'De Plantage'. The façade of the Nieuwe Herengracht is shown in the background.



Title-page of 1716, present in some copies of the combined issue (cf. 1715) of *Praeludia botanica* (1703) and *Plantae rariores exoticae* (1706), published in Leiden by Johannes du Vivie, under the collective title *Icones plantarum quaquaversum praesertim ex Indiis collectarum* . . . The engraving by F.van Bleyswyk shows the main gate of the Hortus Medicus(?). On top of the gate vases are shown with, from left to right, *Yucca aloifolia* var. *draconis, Euphorbia nivulia, Euphorbia clava* and *Aloe ferox*. Statues of Apollo and of Aesculapius symbolise the scientific and medical components of the Hortus. A plan shows the rectangular part of the Hortus only, and differs in some details from that shown in Commelin 1693. In general design this lay-out shows a strong resemblance to the one of the Hortus in Leiden (Boerhaave 1719 t.18) and to that of the company's garden at the Cape as shown in P.Kolbe, *Naaukeurige en uitvoerige beschryving van de Kaap de Goede Hoop* (1727).

Caspar Commelin was nominated 'praelector exoticis'; Frederik Ruysch still was the professor. The work was divided, so that Commelin lectured on exotic plants and Ruysch on indigenous species.

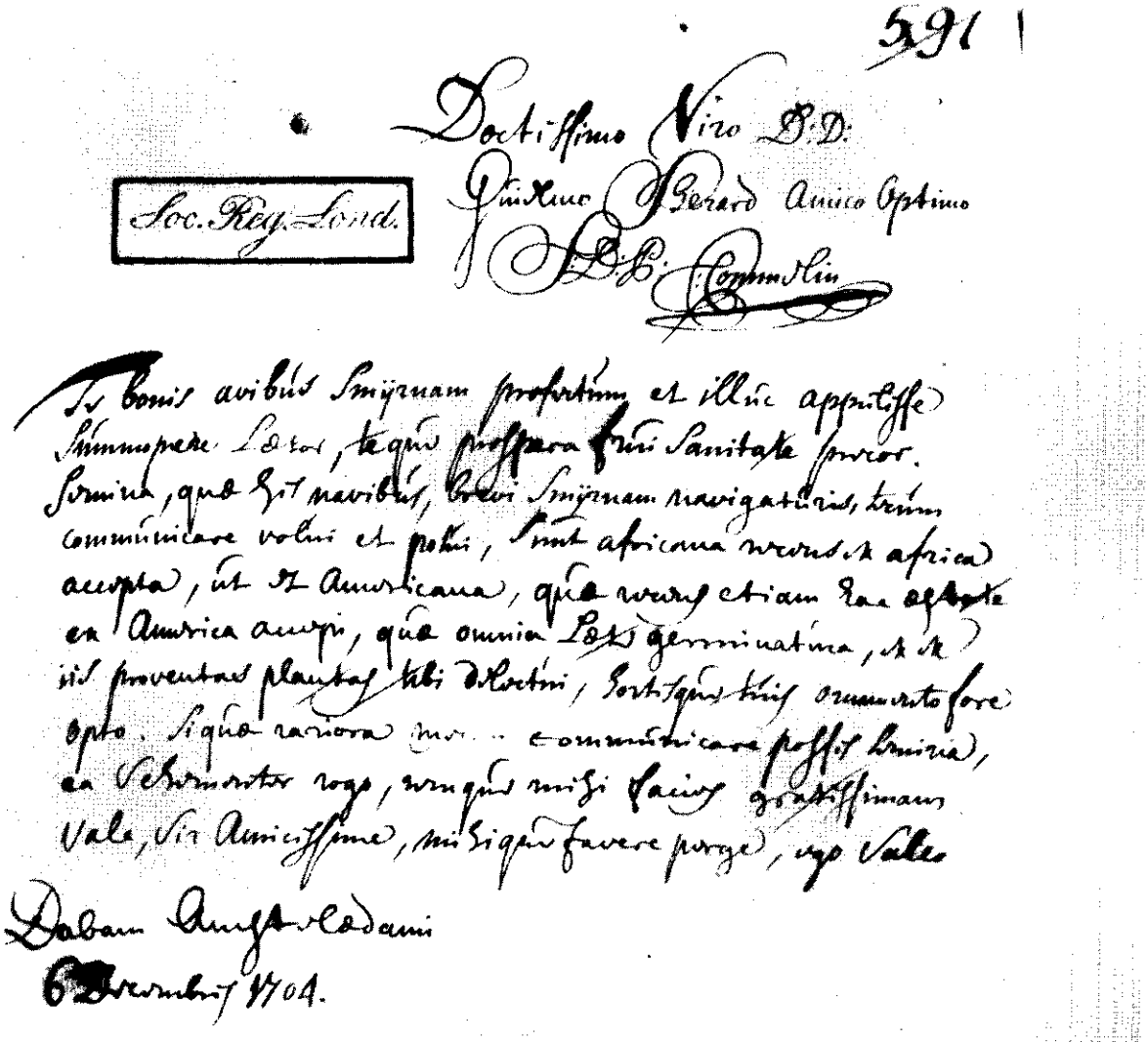
1703. Two of Commelin's serial lectures were published as *Praeludia botanica*.

1704. Johanna, Caspar's wife, was buried on October 17. Only two of their five sons were still alive at the moment. The youngest, Johannes, was born in September 1704 and died in December 1705. Only the first son, Casparus, born in February 1700 as one of a twin, survived his infancy. He studied medicine in Leiden, took his doctor's degree in 1719 on a dissertation *De angina* and practised medicine in Amsterdam. He died in Amsterdam, November 1734. This Caspar Commelin was referred to by Linnaeus in *Critica botanica*: '*Commelina* has flowers with three petals, two of which are showy [Jan and Caspar], while the third is not conspicuous [Caspar jr.]; from the two botanists called Commelin, for the third died before accomplishing anything in botany'. Actually *Commelina* was coined by Plumier, who probably was not aware of the existence of Caspar jr.

In 1704 Caspar was nominated as a fellow of the Academia Caesarea Leopoldina Carolina Naturae Curiosorum, as 'Mantias'.

1705. Commelin remarried on July 17 with Maria van den Bosch, widow of Jan Oorthoorn. No children were born out of this marriage.

Commelin provided the botanical annotations in Maria



Handwriting of Caspar Commelin in a letter of December 6, 1704 to William Sherard, Smyrna. Dr Sherard's Philosophical Letters, fol.152. Courtesy Royal Society of London.

Sibylla Merian's book *Metamorphosis insectorum Surinamensium* . . ., published simultaneously in a Latin and in a Dutch edition. The work was based on observations made by Maria and her daughter Dorothea in Surinam, 1699-1701; see Stearn 1982.

1706. Caspar was nominated professor at the Hortus Medicus. This did not bring about a change in the responsibilities as devided with Ruysch. It meant, however, the end of his activities as a publishing botanist. Commelin's last book on botany was published: *Plantae rariores et exoticae.*

1707. Commelin was nominated 'Compagnies Doctor', i.e. Physician of the Dutch East India Company. No salary was paid as long as his predecessor Verwou was still alive, but Commelin received an annual share of spices. In April 1708 Commelin was allowed the fee of *f*500,–. Caspar's successor to the office after his death in 1731 was W.Roël (Rijks Archief, Koloniaal Archief inv.no.376 and 384, d.d.15.9.1707, 16.4.1708, 18.2. 1732; I owe these references to drs J.Heniger).

1711. Commelin was nominated inspector of the Collegium Medicum, since 1641 the committee that surveyed the medical and pharmaceutical practice in Amsterdam. There is a painting by Cornelis Troost of 1724, showing Commelin in this function with his four colleagues. It is now in the Amsterdams Historisch Museum, Amsterdam.

1715. The *Praeludia Botanica* and the *Plantae Rariores et Exoticae* were republished in Leiden by Joh.du Vivie.

1718. A new edition of the *Flora Malabarica* appeared

Caspar Commelin (the second from right) in 1724 as an inspector of the Collegium Medicum; his hand rests on a copy of his catalogue, third edition 1724. Painting by Cornelis Troost. Courtesy Amsterdams Historisch Museum, Amsterdam.

under the title: *Botano-graphia a nominum barbarismis, kai mypehkion obtentu, Restituta, quam Florae malabaricae nomine celebram, recentior virorum illustrium industria succesive illustrando, ad publicum usum, adornavit, quae quaquaversum, praesertim, e celeberrimis, orientalis indicae, regionibus, malabarici, horti titulo, duodecim tomis, oriunda, et mira, saluberrimerum herbarum, copia, Excellit, Hanc, ut genuina medicae artis depositum, kai antarcheias, Alphabetice ordinatem, recensente, cuisque iterationis medico-physica restituente, viro in botanicis, expertissimo, Casparo Commelino, Med.D. et Horti medicio Amstelodamensis Botanico.* Lugduni Batavorum apud John.Arnold Langerak MDCCXVIII. Despite the new and pretentious title it is merely a reprint.

1724. A third edition of the *Horti medici Amstelaedamensis plantarum usualium catalogus* was published. The work is not dated on the title-page but the preface is dated '1724'.

1726. As inspector of the Collegium Medicum, Commelin was one of the co-signers of the preface to the *Pharmacopaea Amstelredamensis renovata.* It replaced the previous *Pharmacopaea* compiled in 1636 by Nicolaas Tulp.

1731. On Dec.25 Caspar Commelin died. He was buried in the Oude Kerk. His wife Maria died Oct.24, 1736.

4

The Moninckx Atlas

SOME HISTORICAL NOTES ON PREVIOUS AND CONTEMPORARY CODICES

Codices, i.e. collections of botanical drawings, have a long history. The *Codex Vindobonensis* which dates from about AD 512 is a splendid monument of botanical art. The drawings by Hans Weiditz for Otto Brunfels, *Herbarium Vivae Eicones* (1530) are a more recent example of this tradition. I refer to Blunt (1950) for a scholarly survey.

'Les vélins du Roi' form a codex that was started in 1631 for Gaston, Duc d'Orleans, a younger brother of Louis XIII. The artist was Nicolas Robert; some of his drawings were known to Jan Commelin in the edition of Dodart (1676). The collection was extended until the revolution of 1792, the Dutchman Gerard van Spaendonck and his pupil Pierre-Joseph Redouté being responsible for the last contributions (Segal 1980).

The tradition of making codices was well developed in Holland in the late 17th century. 'Compton', 'Witsen', 'Bentinck', 'Claudius', 'Breyne', 'Huydecoper', 'Agnes Block', these and other names are associated with codices from that period. Which ones are in essence identical or mere copies from one another is not my purpose to unravel. It is at any rate quite clear that the Moninckx Atlas was not an isolated enterprise.

The reason for producing the water-colours in the *Hortus Medicus* is not known with certainty. It may have been simply in preparation for books to be made. But since some 160 water-colours, representing a considerable amount in production costs, have not been used for publication, this is not a compelling explanation. Moreover, a simpler method could have been used, as was the case with the 32 published engravings of which no corresponding original water-colour is known.

'In those days the painting in water-colour on paper, and especially on vellum, was the best and most commonly employed method to register the fleeting existence of flowers in their natural colours and to the finest details' (Van de Graft 1943:116, my translation).

Another point to consider is that no herbarium was made in the *Hortus*, at least nothing of the kind is known to have existed. Herbaria were well known in the period: Commelin, Kiggelaer, Ruysch and Huydecoper all owned herbaria, which are now, at least partly, incorporated in the Sloane Herbarium (BM). It might be inferred that Amsterdam considered it more dignified to have the plants painted rather than pressed and dried.

In the present volume, I refer to the original drawings in the Moninckx Atlas as 'water-colours'. In a modern technical sense, the drawings are not strictly water-colours, probably also elements of the gouache technique have been used. I leave it to art historians to elaborate on this.

A volume comparable to the Moninckx Atlas was made at about the same time for the Duchess of Beaufort at Badminton between 1703 and 1705. The artist was Everhardus Kickius, or Kychious, a Dutch artist who had worked also for Hans Sloane on his Jamaican plants. Another Kick, Cornelis (1635-1681), made the illustrations in Jan Commelin's *Nederlantze Hesperides* (1676). I have not seen the volume in question, but from the notes published on it by Britten (1920), Blunt (1950:129-130) and Dandy (1958:209-215), it appears that it resembles the Moninckx Atlas. Many drawings are annotated with Commelin's phrase names. The Duchess of Beaufort (?1630-1714) maintained collections of living plants at Badminton and at Chelsea and she knew Hans Sloane well, so that some plants from her gardens are preserved in the Sloane herbarium (BM). Also Plukenet mentioned plants from the Duchess's collection in his *Phytographia*.

The drawings in the Codex of the Duchess were identified at Kew in 1912. The list of identifications was kindly sent to me by the chief librarian, Miss S.M.D. FitzGerald. My notes on the species represented in both this Codex and in the Moninckx Atlas are based on this list (R.B.G. Kew Archives: Director's Correspondence vol.118).

The published references to the Moninckx Atlas include: C.Commelin sr. 1693,2:657; C.Commelin 1701 preface; Van Hall 1830:154; Von Haller 1760:161; Catalogue of the municipal library of Amsterdam 1861 no.1351; Pritzel 1872-1877 sub Commelin; Hunger 1924 (Hunger announced a separate paper on the Atlas, but none has been published); Stomps 1932; Nieuw Nederlandsch Biographisch Woordenboek vol.10:202, 1937; Janse & Uitewaal 1939 (Uitewaal left a MS with notes on the succulents in the Atlas, which has been at


AFTEEKENINGEN
VAN
Verſcheyden,
VREEMDE
GEWASSEN;
IN DE
MEDICYN-HOFF
Der Stadt
AMSTELDAM.
Door Ordre vande
HEEREN
JOAN HUYDEKOPER, *Ridder, Heer van Maarſeveen*
en Neerdyck, Burgemeeſter en Raad.
EN
JAN COMMELIN, *Raad.*
Als Commiſſariſſen vanden voorn:
Hoff; Inden Jaaren 1687. 88. en 89.

Title-page of Atlas volume 1.

my disposal); Kooiman & Venema 1942; Blunt 1950: 137; Reynolds 1950; Nissen 1951:389; Karsten 1951: 87; Jeurissen & Fournier 1970; Wijnands 1972, 1973, 1981; Stafleu & Cowan 1976 sub Commelin; Sprenger 1978; Edwards 1978; Van der Walt & Vorster 1980; Gunn & Codd 1981; Siemonsma 1982.

COMPOSITION OF THE ATLAS

The Atlas consists of nine volumes, of which only the first eight are related to the Commelin period.

Volume 1 is inscribed '1687-1689', volume 2 '1690-1692', the other ones do not bear dates. All volumes bear the names of commissioners of the *Hortus Medicus*. From 1683 onward, Jan Commelin and Joan Huydecoper van Maarseveen held these posts. Commelin was succeeded after his death (January 19, 1692) by François de Vroede. The first two volumes bear the names of Huydecoper and Commelin, the third and fourth volumes give Huydecoper, François de Vroede and Gerbrand Pancras. Huydecoper died December 1, 1704; Pancras was commissioner from 1698 until his death on January 1, 1716; De Vroede died on June 21, 1706. Therefore, the third and fourth volume were compiled between 1698 and 1704.

The entry in the Memoriael (see: Production of the water-colours) on April 28, 1690 for the writing of names 'in the drawing book' by Barent Dionijs, probably refers to the first volume of the Atlas. Also the entry of Xb[r] 19, 1690 for the painting of two coats of arms and for the pasting of the herbal most likely relates to the first volume. It should be noted that the water-colours on vellum were pasted in the volumes. According to the entry of September 2, 1698, Dionijs was paid again for calligraphy, in the second volume in my reconstruction. The entry in the memoriael of September 8, 1701 for the calligraphy in two books by Dionijs probably refers to the volumes 3 and 4.

The volumes 5, 6, 7 and 8 all bear the names of P. Rendorp, F.van Collen and G.Clifford. Rendorp and Van Collen were nominated 'commissaris' in 1749 or earlier, Clifford in 1751. Therefore, these volumes were compiled in 1751 or later, probably not before 1756 (see the note on volume 8) and not after 1760. An entry in the memoriael in 1758 of *f* 105.16 paid to Gerret and Joannes de Broen, bookbinders, might pertain to these Atlas volumes. Other payments to bookbinders in those years are to Hendrik Boussiere and involve much smaller sums of money.

All evidence combined provides a picture admittedly still with some uncertainties, but the most probable I can compose:

Vol.	Commissarissen	Published plates	Memoriael	Artists	Compilation
1	1683-1692	1697	1690	–	1690
2	1683-1692	1697	1698	1694	1698
3	1698-1704	1701, 1703	1701	1694	1701
4	1698-1704	1701	1701	1699	1701
5	1751-1760	1697, 1701, 1703	–	1699	1756→
6	1751-1760	1703, 1706	–	–	1756→
7	1751-1760	1706	–	1694	1756→
8	1751-1760	[1697]	–	1694	1756→
9	–	–	–	1749	1756→

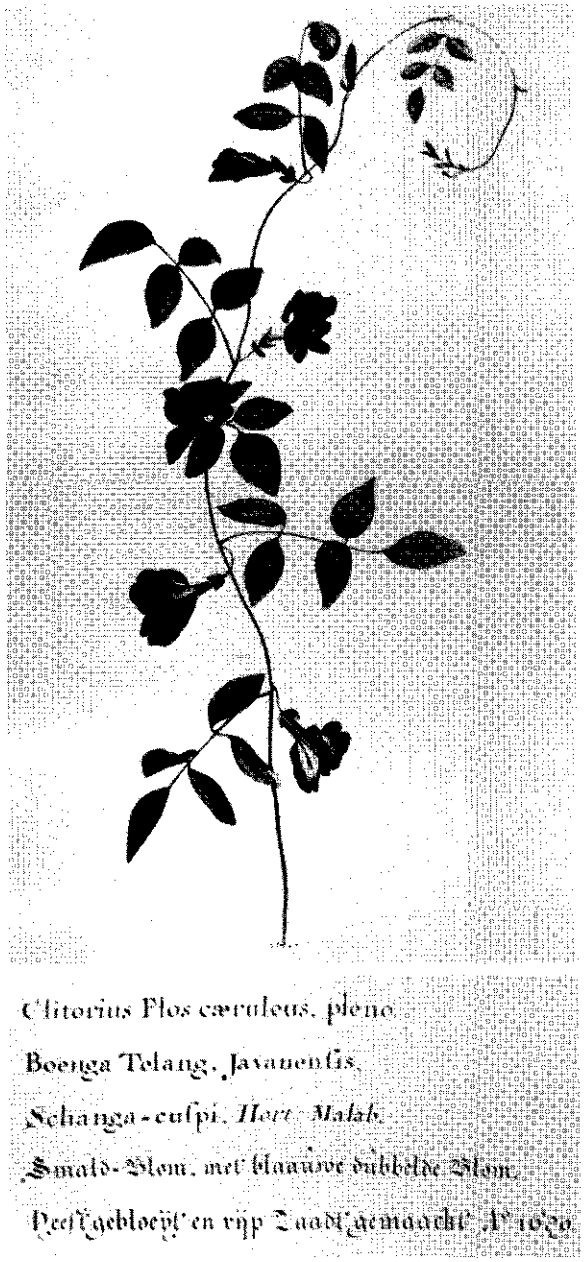
DESCRIPTION

Volume 1

Afteekeningen / van verscheyden vreemde gewassen; in de / Medicyn-Hoff / der Stadt / Amsteldam / door Ordre / van de Heeren / Joan Huydecoper, Ridder, Heer van Maarseveen en Neerdyk, Burgemeester en Raad / en / Jan Commelin, Raad, / als Commissarissen van den voorn. / Hof. / In den jaare 1687 .88 en .89 / eerste deel.

Translation. Portraits of several exotic plants in the Physic-Garden of the city of Amsterdam by order of the gentlemen Joan Huydecoper, Knight, Lord of Maarseveen and Neerdyk, burgomaster and council and Jan Commelin, council, as commissioners of the aforesaid garden. In the years 1687 .88 and .89 / first volume.

The volume consists of 102 unnumbered pages: 2 blank, 1 title-page, 1 blank, Huydecoper's coat of arms,



Clitorius Flos cæruleus, plene
Boenga Telang, Javanensis.
Schanga-cuspi. Herr. Malab.
Smalb-Blom, met blaauwe dubbelde Blom.
Peel Gebloeyt en rijp Zaad gemaackt A° 1690.

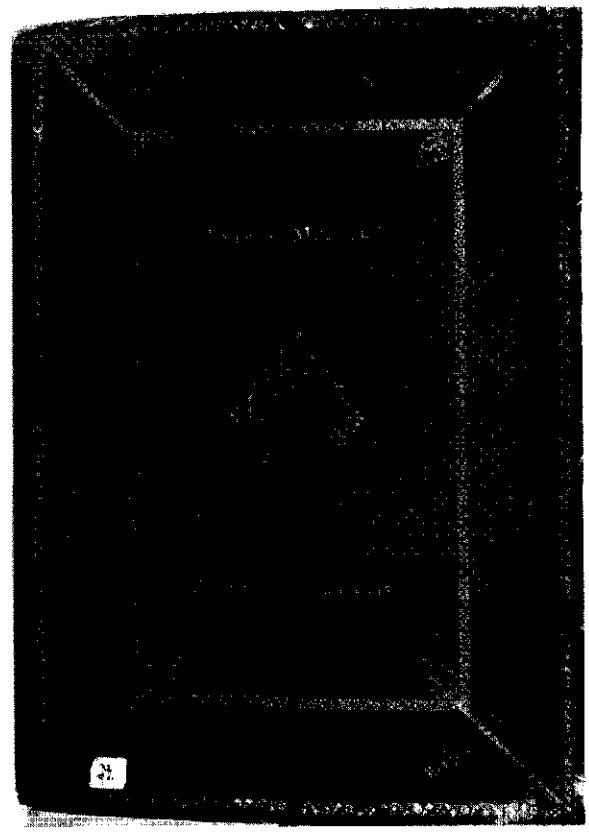
Clitoria ternatea, water-colour and text. Atlas 1 t.42.

1 blank, Commelin's coat of arms, 2 blank, 44 double pages, the right one with a water-colour pasted on, the left one with its phrase name and synonyms, 5 blank.

The volume measures 58,5 x 42 cm, the water-colours 53 x 36 cm as a rule.

Jan Moninckx signed 42 vellums, Maria Moninckx 1, 1 is not signed. Of these, 28 were published as engravings based on the water-colours, all in 1697, and 16 remained unpublished, viz, the nos.1, 2, 4, 9, 10, 11, 12, 14, 15, 17, 20, 22, 24, 32, 39 and 43.

This volume was compiled in 1690.



Binding of Atlas volume 1.

Volume 2

It bears the same title, and gives the same commissioners, **'in de jaare 1690 .91 en .92, tweede deel'.**

The volume consists of 102 unnumbered pages: 2 blank, 1 title-page, 2 blank, 48 double pages, the right one with a water-colour pasted on, the left one with its phrase name and synonyms, 1 blank.

Jan Moninckx signed 45 vellums, Alida Withoos 3. The first 29 and no.41 served for publication in 1697, the remaining 18 were not published.

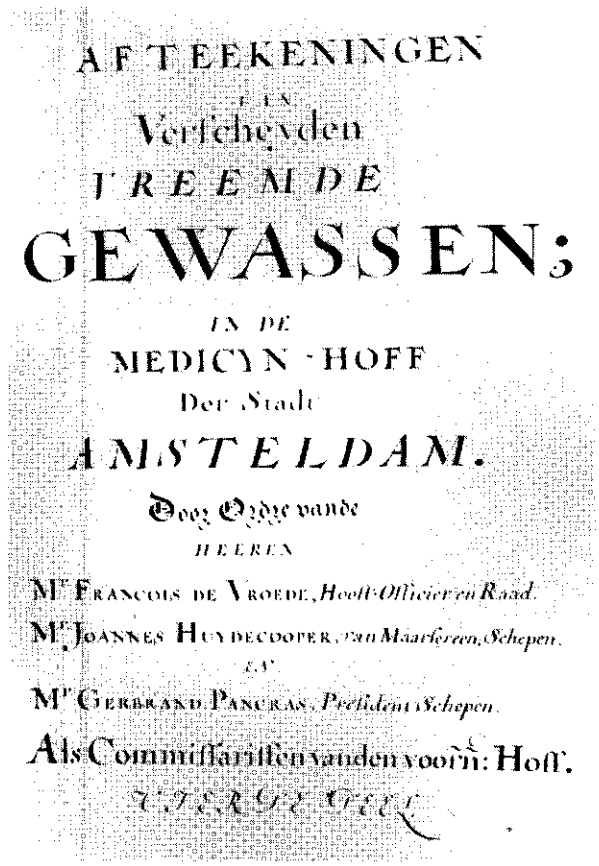
This volume was compiled in 1698.

Volume 3

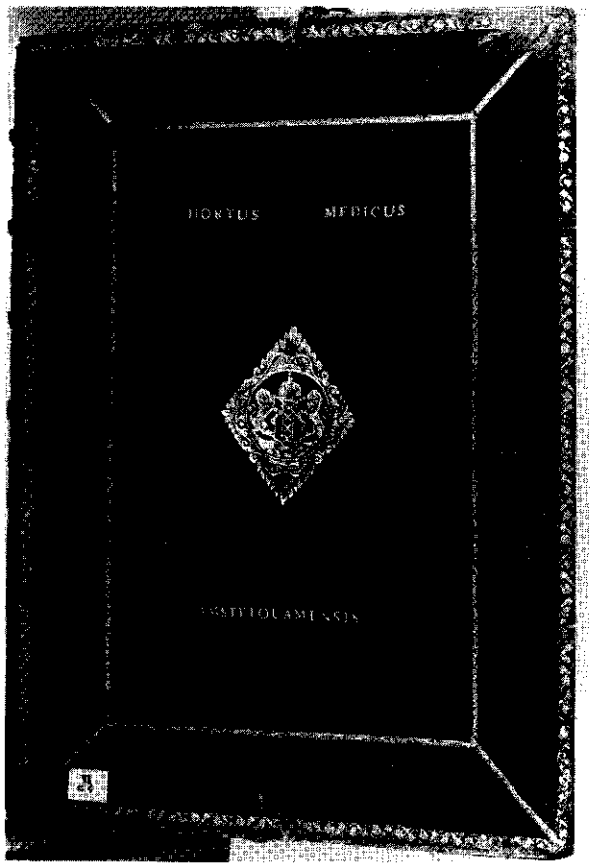
The same title is used but now 'op ordre van de Heeren François de Vroede, Hooft off. en Raad, Joan Huydecoper, Ridder van Maarseveen en Neerdyk, Schepen en Gerbrand Pancras, presidentschepen, als commissarissen van de voorn. Hoff. III deel'.

The volume consists of 11 unnumbered pages: 2 blank, 1 title-page, 1 blank, De Vroede's coat of arms, 1 blank, Huydecoper's coat of arms, 1 blank, Pancras' coat of arms, 2 blank.

102 numbered pages, 1-51, the right-hand page with the water-colour pasted on and the left-hand page with its phrase name and synonyms bearing the same page number, 3 blank.


AFTEEKENINGEN
VAN
Verscheyden
TREEMDE
GEWASSEN;
IN DE
MEDICYN-HOFF
Der Stadt
AMSTELDAM.
Door Ordre vande
HEEREN
Mr FRANCOIS DE VROEDE, Hooft-Officier en Raad.
Mr JOANNES HUYDECOOPER, van Maarseveen, Schepen.
EN
Mr GERBRAND PANCRAS, Present-Schepen.
Als Commissarissen vanden voorn: Hoff.

Title-page of Atlas volume 4.



Binding of Atlas volume 4.

Jan Moninckx signed 37 vellums, Maria Moninckx 7, Alida Withoos 3 and 4 are not signed. All water-colours were used for publication in 1701, except no.9 which remained unpublished.

The volume was compiled in 1701.

Volume 4

This is entitled as vol.3, except of course 'IV deel'.

The volume consists of 5 unnumbered pages: 2 blank, 1 title-page, 2 blank. 100 numbered pages 1-50, the water-colour pasted on the right one, the phrase name and synonyms on the left one, here either the left or the right page is numbered, 3 unnumbered pages.

Jan Moninckx signed 35 vellums, Maria Moninckx 4, Alida Withoos 1, Johanna Helena Herolt 1; 9 were not signed.

All water-colours were used for publications in 1701 except the nos.27, 28 and 46 that were never published.

The volume was compiled in 1701.

Volume 5

The same title is used but now 'op Ordre van de Heeren Mr Pieter Rendorp, Heer van Marquette etc., Burgomeester en Raad, Mr Ferdinand van Collen, Heer van Gunterstyn en Tienhoven etc., Burgemeester en Mr George Clifford. V deel'.

The volume consists of 8 unnumbered pages: 2 blank, 1 title-page, 2 blank. 100 numbered pages, 1-50 as in volume 4, 3 unnumbered blank pages.

Jan Moninckx signed 22 vellums, Maria Moninckx 26, Johanna Helena Herolt 1 and 1 is not signed.

The first 25 water-colours were used for publication in 1697, the nos.25-39 in 1701, and nos.40-50 in 1703. There is no unpublished material in this volume, so all water-colours it contains were made before 1704. This volume probably was compiled after 1755.

Volume 6

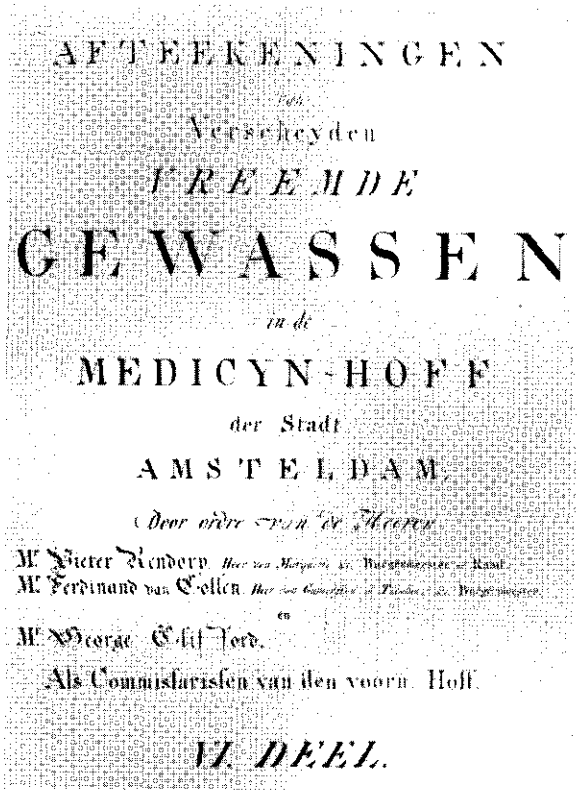
The title is identical to that of volume 5, except 'VI deel'.

Its composition is also as that of volume 5.

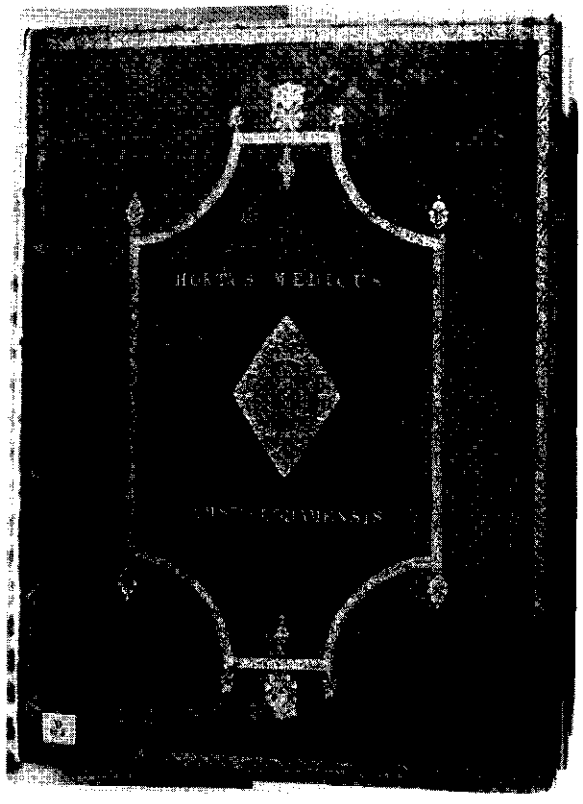
Jan Moninckx signed 20 vellums, Maria Moninckx 27; 3 are not signed.

All water-colours were used for publication, 16 of them in 1703 and 34 in 1706.

Since this volume does not contain unpublished material, it must have been completed in 1706, or rather in 1705 already. The compilation was done after 1755.


AFTEEKENINGEN
van
Verscheyden
VREEMDE
GEWASSEN
in de
MEDICYN-HOFF
der Stadt
AMSTELDAM.
Door order van de Heeren
M. Pieter Rendorp
M. Ferdinand van Collen
en
M. George Clifford.
Als Commissarissen van den voorn. Hoff.
VI. DEEL.

Title-page of Atlas volume 6.



Binding of Atlas volume 8.

Volume 7
The title is identical to that of volume 5, except 'VII deel'.

This volume consists of 9 unnumbered pages: 6 blank, 1 title-page, 2 blank. 100 numbered pages, 1-50 as in volume 5. 5 blank unnumbered pages.

Jan Moninckx signed 28 vellums, Maria Moninckx 19, Alida Withoos 1; 2 are not signed.

Only the first 8 water-colours have been used for publication in 1706, the remaining 42 have never been published. The first 29 water-colours have a phrase name on the left hand page, from t.30 onward no names are given.

This volume was not compiled before 1732 (see the discussion on *Mesembryanthemaceae*) probably even after 1755.

Volume 8
The title is identical to that of volume 5, except 'VIII deel'.

The composition is as follows: 160 unnumbered pages: 2 blank, 1 title-page, 2 blank, 77 double pages, the right one with the water-colour pasted on, the left one blank, 1 blank.

Jan Moninckx signed 42 vellums, Maria Moninckx 17, Alida Withoos 5; 13 are not signed.

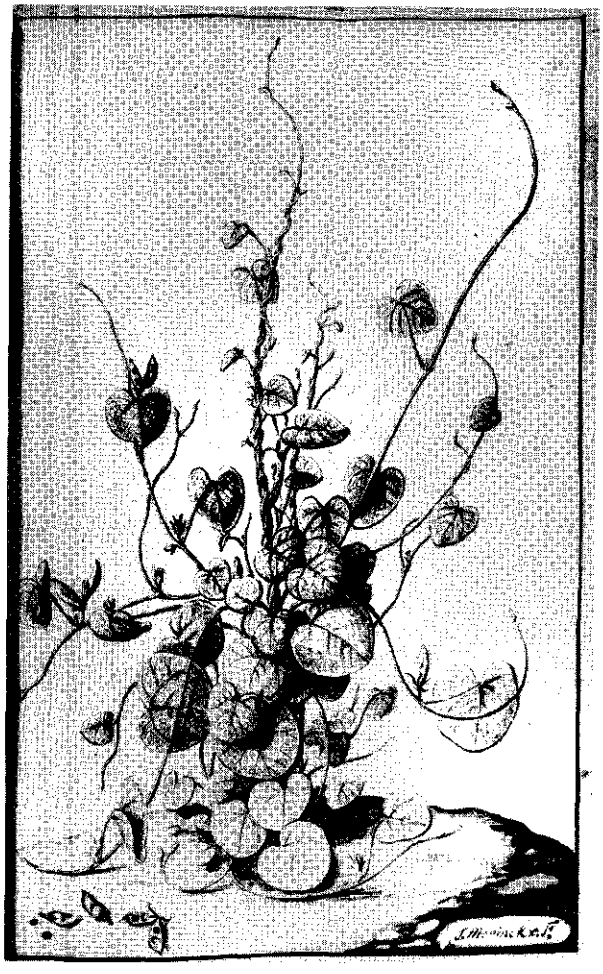
None of the 77 water-colours was used for publication, with the possible exception of t.19, that may partly have been used for t.84 in 1967. None of the plants is named.

The 25 water-colours of orchids in this volume were sent by J.Burman to A.von Haller in 1756 (Van Hall 1830:154, Von Haller 1760:161). Burman wrote in his accompanying letter that he had received the drawings only a few months previously. From this it might be inferred that the Moninckx Atlas was not available to Burman before 1755 or 1756. Therefore, it seems likely that the volumes 5, 6, 7, 8 and 9 were compiled after 1755.

The circumstance that Burman admitted his first acquaintance with the Moninckx Atlas as late as 1756 renders it unlikely that Linnaeus would have had access to it during his stay with Burman in Amsterdam in 1735.

Volume 9
No title is given, the volume consists of: 100 unnumbered pages: 1 blank, 5 water-colours on the next right-hand pages, the corresponding left pages blank, 89 blank pages.

Dorothea Storm signed 1 watercolour, J.M.Cok 4. The latter paintings are dated 1749. None were used for publication.



Rhynchosia americana from the volume of 'Swarte Kunst'. Flowers and fruits which are lacking in the original water-colour, were added in this drawing.

Ceanothus americanus from the volume of 'Swarte Kunst'. Commelin or his editors changed the shape of the stem from that in the water-colour to the one in the published engraving.

THE PRODUCTION OF THE WATER-COLOURS

The 420 water-colours in the Atlas are signed by four artists: Jan Moninckx (271), Maria Moninckx (101), Johanna Helena Herolt (2), and Alida Withoos (13). Thirty-three are not signed.

The archives of the municipality of Amsterdam, municipal institutions, inventory no.626, '*memoriael van de Hortus Medicus der Stad Amsteldam, Beginnende den 3 Febr.: A° 1684*', contain records of payment for the water-colours. The memoriael which covers the period 1684-1795, has no page numbers. I cite the memoriael from the transcript that drs J.Heniger put at my disposal. The first mention of payment to Moninckx is on July 19, 1686, the last on June 20, 1709. A last, detached entry of 1724 is undated. From 1686 until 1692, only Moninckx was mentioned. He was paid four guilders for a water-colour as a rule. From 1686 till 1690, only water-colours, 'tekeningen', are mentioned. It is not possible to extract the exact number of water-colours from the records, but probably 115 were painted.

In 1691 also 'tekeningen uit swart' or 'swarte kunst', i.e. drawing in ink, are listed. 24 Stuivers (= pennies) a piece was their price. About 100 ink drawings were made. No such drawings are known to have been preserved except those in the Central Library, Wageningen, to be discussed later. This would imply that the production of the first volume of *Hortus Amstelodamensis*, published in 1697, was started in 1691. Only two water-colours on vellum ('tekening op perkament') are listed in 1691.

In 1692 one water-colour was paid for to Jan de Vlieger, the chief gardener. From 1692 De Vlieger often was the recipient for Moninckx' fees. The year 1693 has entries for 4 water-colours only.

Alida Withoos was paid for 13 vellums in 1694. Moninckx made 5. During the next three years, 14 water-colours were made, the fee having gradually risen to 4 guilders and 14 pennies. 'Swarte Kunst' is again listed in 1698, probably in preparation of the second volume of *Hortus Amstelodamensis*. At least 54 ink-drawings were made and 65 water-colours, but there were probably more. Hendrik Gerritsz is the recipient in most cases. Johanna Helena Herolt is mentioned in 1699 for two water-colours. The production in this year amounts to 65 drawings and 50 water-colours.

Entries for some 60 water-colours exist for the period 1700-1701. 1702 reports 'swarte kunst' again, possibly for the *Praeludia botanica* of 1703; in all a sum of *f* 181.- was paid, unspecified for drawings and for water-colours. My estimate is: 33 drawings and 35 water-colours. 1703 shows *f* 140.- for water-colours, i.e. for about 30 vellums. Drawings were again made in 1704 and 1705, possibly for the *Rariores & exoticae*, no later drawings are listed. Water-colours are listed till 1707, Nov.30 being the last entry date of payment made to Jan Moninckx.

Maria Moninckx is only listed in 1709 for *f* 12.- and in 1724 for *f* 8.-. Several other entries related to the Atlas are included:

1690 April 28: *f* 18.18 to Barent Dionijs for the writing of names 'int teeken boek', i.e. 'in the drawing [or rather in the water-colour] book'.

1690 Xbr 19: Moninckx *f* 12.12 for the painting of two coats of arms and *f* 2.10 for the pasting of the herbal.

These entries might indicate that the first volume of the Atlas was completed and compiled by that time, notwithstanding the dating '1687-1689' calligraphed on the title-page.

1698 Sept.2: *f* 20.- to Barent Dionijs for the writing of names in the paint book.

This could relate to the second volume.

1701 Sept.8: *f* 46.12 to Barent Dionijs for the writing of names in two books and for repairs in other books.

The above data can be summarised as follows:

Year	A	B	C	D
1689	98	1	44	26
1697	160	2	48	30
1701	325	3 + 4	51 + 50	97
1702	360	5	50	50
1705	420	6	50	50
1707	437	7 + 8	50 + 77	8

A: Total number of water-colours estimated from the 'Memoriael'.
B: The volumes of the Atlas completed, as inferred from the 'Memoriael' and the relation between the contents of the Atlas and the published volumes.
C: Number of water-colours in these volumes of the Atlas.
D: Number of water-colours from these Atlas volumes used for publication.

There is no strictly sequential relation between the production of the water-colours and their use for publication. This relation is summarised here by citing the number of water-colours from each Atlas volume used in the published volumes:

		1	2	3	4	5	6	7	8
Hort. Amst. I	1697	28	30			26			[1]
Hort. Amst. II	1701			55	47	13			
Prael. Bot.	1703			1		12	18		
Rar. & Exot.	1706						33	8	

Discrepancies in the total numbers between both tables are caused by the fact that in some cases two water-colours have been used in one engraving, and in other cases different plants in one water-colour have been used in different engravings, sometimes even in different volumes.

I have deposited a full listing of the contents of the Atlas with a concordance to the published volumes in the library of the Hugo de Vries-laboratory in Amsterdam, to be kept with the Atlas itself.

Some 160 water-colours have not been used for publication. They could have been intended for the third volume of the *Hortus Amstelodamensis* that Caspar Commelin announced in his preface to the second volume and in his text on *Leucadendron argenteum*, but that volume was never published.

There are 32 published engravings not represented by a water-colour: 28 in *Hort. Amst.* vol.I, and 2 in both *Praeludia botanica* and *Plantae rariores et exoticae*. It is possible that these water-colours have got lost, but I consider it more likely that they never existed. Of all 28 plates in the volume of 1697 without a corresponding water-colour, drawings in ink, signed by Jan Moninckx, are found in a volume preserved in the Central Library of the Agricultural University in Wageningen (No.334A6). This volume contains drawings for all plates in volume I in exactly the same sequence; only plate 112 of *Moringa oleifera* is wanting. Kooiman & Venema (1942) interpreted these drawings as copies of the water-colours made for the engraver.

The drawing of plants directly for publication may have been caused by the fact that several plants that Commelin had originally intended for inclusion in his publication had been published a little earlier by other authors, e.g. by Hermann 1687: *Lonicera sempervirens* and *Tropaeolum majus* of which unpublished water-colours are present in the Atlas. Another reason may have been the pressure to complete the volume on account of Commelin's declining health (he died January 19, 1692). If my assumption is correct that the volume in Wageningen is identical with the 'swarte kunst' mentioned in the 'memoriael', the ink drawings were done in 1691.

ADORNMENTS IN THE WATER-COLOURS

Three water-colours in the Atlas show a butterfly as an ornament to the drawing of the plant. The animals are

clearly drawn from dead, distorted specimens. Butterflies are a frequent adornment in flower-paintings from the 17th and 18th centuries, see Segal 1970. All three butterflies are European species, shown in the Atlas with one European and two South African plant species. None of these water-colours has been used for publication by Commelin.

Vol.1 t.4	*Colias crocea* Geoffroy	Clouded Yellow
Vol.1 t.10	*Aglais urticae* (L.)	Small Tortoiseshell
Vol.7 t.33	*Vanessa atalanta* (L.)	Red Admiral

Another decorative element common in flower-paintings of that period is water-drops, see Segal 1970, 1980. Only on the water-colour vol.1 t.2, representing *Tropaeolum majus* L., is a water-drop very effectively shown on a leaf. However, this water-drop may reflect an observation of guttation in *Tropaeolum*.

THE ARTISTS

Jan Moninckx. Only a few data are available on Jan Moninckx, the main contributor to the Atlas. Bredius (1889) published a paper on 'De Schildersfamilie Moninckx'. In the 17th century, the Moninckx family had a painting tradition. The first was Gijsbert Moninckx, who became a member of the Guild of St Lucas in The Hague in 1605. The only Jan Moninckx mentioned is a painter who signed appraisements of lots of paintings in 1672 and 1673 in The Hague.

From the 'Memoriael' we learn, as was common in those days, that Moninckx' name has many variants: Monnikx, Munnikx, Monikx, Munikx, Moninx, Moninckx, Monnickx, Munnickx, Moninkx, Mooninghs, Moninksz, Moninks, Monnicx, and some more. His christian name is written as Jan, Joan, Johannes, Johannis and Johan. Also in the water-colours, various orthographies are used. I write 'Jan Moninckx'. Until November 30, 1707, all payments to Moninckx are to Jan; Maria is not mentioned, although she certainly did many paintings. Only in 1709 and 1724 was money paid to Maria.

Wildeman (1904) mentioned bills paid to Jan Moninckx by the High Office of the dike-reeve Delfland in 1672, 1673 and 1675 for the painting of coats of arms on flags and ships of the dike-reeve.

Van der Aa (1869) mentioned a Jan Moniks or Monix born in 1606 in The Hague and deceased in 1686 in Leiden, but this cannot be our painter.

The municipal archives of Amsterdam retain data on several persons named 'Jan Moninckx'.

A Johannes Monix married Susanna Branthout in April 1699 in Amsterdam (D.T.B. 493-224). This Monix was a clergyman at Leende in the province Noord-Brabant, it was his third marriage. He died in 1685.

From his first marriage with Maria Jan van Duysel he had a son Johannes, born ca 1656. This Johannes signed the betrothal-register in Amsterdam on May 23, 1682 (D.T.B. 150-159) with the intention to marry Anna Geestevelt. From Monix' signature in this document, I infer that he could be the same as the Jan Moninckx who signed the water-colours in the Atlas. Jan was born at 'Leent' (Leende) and 26 years old, while Anna was born in Amsterdam and 23 years old. Jan and Anna both lived 'op de Zingel' (Het Singel at present). This Johannes was in 1686 'gereformeerd luitenant in de garde van sijn hooheyt', a military officer therefore (R.A.Heeze no. 149 fol. 54v dd. 13.4.1686).

A Johannis Moninx had a notarial act written in 1698, authorizing Gerbrand Dop to sell the house of his deceased father-in-law at Voorburg. Johannis' wife was Adriaentje Uchtenbroeck, daughter of Pieter Jans Uchtenbroeck. He lived in the Leydsedwarsstraat in Amsterdam, (municipal archives Amsterdam, not. arch. W.Sijlvius 18 Jan. 1698). In this document Johannis' profession is stated to be 'schilder' (painter), his signature is very much like the ones in the Atlas. Adriana Ugtenbroek, widow of Johannes Moninckx, was buried on January 27, 1722 (D.T.B. 1234-6). A Johannis Moninckx was buried on May 20, 1714 (D.T.B. 1231-56), he had lived at the 'Noorderdwarsstraat bij de Princegracht'.

Summing up, I infer from the information I could glean from the sources at my disposal that Jan Moninckx the artist of the Atlas married Adriaentje Uchtenbroeck before or in 1698 and died in 1714. All we know for sure is that a painter Jan Moninckx produced 271 or more water-colours of plants between 1686 and 1708.

Maria Moninckx was baptised on April 22, 1673 in The Hague as the daughter of Johannes Moningx and Ariaentje Pieters (municipal archives The Hague, kerk. reg. 5 fol. 277). As the age of Maria is given as 47 years in 1723 it is possible that she was given the name of an older sister that died in infancy; no entry in the baptismal register for Maria is found in 1676. Maria Moninckx signed the betrothal register in Amsterdam on April 18, 1723 to be married with Martinus de la Ruel. Martinus was 46 years old and from Amsterdam, Maria 47 years old and from The Hague (D.T.B. 561-1). Her signature is the same as that on her water-colours. On February 26, 1757 Maria was buried, she had lived 'op de Burgwal bij het Ruslant' (D.T.B. 1096-100).

From the above it is clear that Bredius (1889) erroneously identified Maria with Machteld Moninckx, the widow of Paulus Dinant who probably died in 1685.

Alida Withoos is somewhat better known. She was born in 1659 or 1660 and died in 1730 in Amsterdam (D. T.B. 1103-74). She painted flowers, mushrooms, fruits, butterflies, snakes, etc. Her father Matthias Withoos (1621 or 1627 Amersfoort – 1703 Hoorn) was a paint-

er, and so were her sister Maria and her brothers Frans, Johannes and Pieter.

Three water-colours, representing *Orbea variegata, Haworthia retusa* and *Clitoria ternatea,* attributed to Alida Withoos, are in the Africana Museum in Johannesburg. Two of these were done in 1686. Seven of her water-colours, representing flowers and butterflies, are present in the Central Library of the Agricultural University, Wageningen. Other water-colours by Alida Withoos are in Museum Boymans-van Beuningen, Rotterdam, and three others were exhibited in 1982 in Amsterdams Historisch Museum.

Johanna Helena Herolt née Graff was a daughter of the famous artist Maria Sybilla Merian. She was born in Frankfurt in 1668, and married Jacob Hendrik Herolt in 1692.

Water-colours by all four painters in the first eight volumes of the Atlas are known from the 'groot konst boek' that belonged to Agnes Block. This collection was compiled at her estate 'Vijverhof', 1670-1700. Several artists contributed among which 'I.Monix' (2 paintings), 'Maria Monix' (5), 'Alida Withoos' (6) and 'J.H.Herolts' (2). The present location of this 'konst boek' is not known; probably its contents became dispersed. See Van de Graft 1943, Schulz 1977.

Jan Matthias Cok (1720-1770) was a painter in Amsterdam. See A.von Wurzbach, *Niederländisches Künstlerlexicon,* vol.1 p.304 (1906).

Dorothea Storm née Kreps. A Dorothea Kreps is mentioned as an artist in the 19th century by P.Scheen, *Nederlandse Beeldende Kunstenaars 1750-1950* (1969). The water-colour of *Catharanthus roseus* by Dorothea in Atlas 9 t.1 was done after 1750, I presume. The only 'Kreps' mentioned in the 'memoriael' was a firm where the Hortus bought bulbs.

Dorothea was a daughter of the owner of this nursery, Jean Kreps (†1777), and Eva Welpshof (†1779). The nursery 'het Hof van Flora' was situated west of the Kleine Houtweg in Haarlem.

Dorothea married Johannes Storm at Beverwijk on April 2, 1758. Storm was the 'hortulanus' of the Hortus Medicus in Amsterdam (1751-1803). Dorothea was buried on 5.11.1772, Johannes on 22.12.1803.

It is thus clear that Dorothea was the curators wife. and did drawings in the Hortus. One other drawing on vellum, showing pears, cherries, *Physalis* and *Aquilegia,* attributed to her is present in Museum Boymans-van Beuningen, Rotterdam.

See municipal archives Amsterdam D.T.B. 1088-86 and 1073-60; Haarlem D.T.B. 65 and not. arch. N.Gallé 1766 No. 101, will of Jean Kreps.

Part 2

Taxonomy and nomenclature

5

The influence of the books by the Commelins

BEFORE 1753

The rapid expansion of the collection of the Hortus Medicus soon made it one of the richest collections of exotic plants in Europe. Authors dealing with exotic botany frequently used the Commelin volumes as a major source of reference. In my discussions on the plants I have traced this influence in the published works of Volckamer (1700), Bradley (1716-1727), Boerhaave (1719), Tilli (1723), Burman (1737, 1738), Breyne (1739), Van Royen (1740) and several publications by Linnaeus prior to 1753.

In many cases, the Commelins published the first illustration of a species. Their plates have often been copied, e.g. in Rudbeck (1701), Bradley (1716-1727) and Hill (1757). The latter volume has not been analysed fully, a detailed study is recommended here.

A pre-Linnean interpretation of *Hortus Amstelodamensis* vol.I (1697) was published by James Petiver (1699). Also John Ray amply cited the Commelins; his volume of 1704 even contains a comprehensive account of *Hortus Amstelodamensis* vol.II (1701).

Other reviews were published in: *Acta Eruditorum* 1698:128-129; *Journal des Scavans* 7 May 1703 (ed. Paris), 14 May 1703 (ed. Amsterdam); 4 April 1707 (ed. Paris), 11 April 1703 (ed. Amsterdam).

FROM 1753 ONWARD

The Commelins published their work about half a century before May 1, 1753, i.e. the date before which no scientific plant name is validly published as ruled by the *International Code of Botanical Nomenclature* (ICBN).

Therefore, the books of the Commelins are of no direct relevance to the current nomenclature of plants. However, correct names published after May 1, 1753 that would be *nomina nuda* are valid if a pre-1753 description is cited (ICBN art.32). A case in point is *Scilla capensis* N.L.Burman, which name is validated solely by reference to Commelin's description and illustration (1701:187 t.94).

Less straightforward, however, is the situation in publications of the founder of the current system of botanical nomenclature, Carolus Linnaeus. Linnaeus made ample use of the, now pre-linnean, literature. In many cases, his species can only be interpreted by means of his references. Linnaeus cited 259 out of the 305 plates published by the Commelins, and, therefore, an understanding of these plates is of fundamental significance for the interpretation of many a Linnaean species. Moreover, Linnaeus' species concept was often rather wide, and one Linnaean 'species' may consist of several currently recognised species; see for example the texts on *Aloe perfoliata, Argania spinosa* and *Pterocarpus indicus.*

Linnaeus' contemporaries and succeeding generations of botanists also used the publications by the Commelins. References to the Commelins are found throughout the works of Miller (1768), N.L.Burman (1768), Lamarck (*Encyclopédie*), Willdenow (*Species plantarum*) and De Candolle (*Prodromus*).

Horticultural literature shows the influence of the Commelins as well. It is traced through Aiton (*Hortus Kewensis*), Sweet (*Hortus Londinensis, Hortus Britannicus*) and Loudon (*Hortus Britannicus*).

Sprengel (1808:136-139) identified 149 illustrations in the volumes of the Commelins. These identifications rarely differ from Willdenow's. The first comprehensive interpretation was published by Huth (1895), whose publication remained almost completely unknown.

Since about 1930, the application of the type-method prompted a renewed interest in pre-linnaean literature. This led to many new critical interpretations of the plants of the Commelins, laid down in a multitude of revisions, monographs and floras. *The Guide for the determination of types* (in ICBN) and the chapter *Typification of Linnaean Species* (Stearn 1957), provided some consistency to the process of lectotypification, although not all problems seem to be settled satisfactorily (see Stirton *et al.* 1981).

ERNST HUTH'S *CLAVIS COMMELINIANA*

Huth's *Clavis Commeliniana, Schlüssel zu den Kupferwerken von Johannes und Caspar Commelyn,* appeared in five issues of vol.12 of *Helios, Abhandlungen und monatlichen Mittheilungen aus dem Gesamtgebiete der*

Naturwissenschaften, dated 1894 but published in 1895. It is found on the pages 3-7 (*Hort. Amst.* vol.1, 1697), 18-21 (*Hort. Amst.* vol.2, 1701), 40-44 (*Praeludia* and *Plantae Rariores et Exoticae* in the 1715 edition), and 60-63 (index of binomial names). It was also published in 1895 as a separate issue covering 16 pages by Friedländer & Sohn, Berlin '1894'. The latter edition was consulted in the Harvard Herbarium Library, and *Helios* in the Library of Teyler's Foundation Haarlem.

Ernst Huth, Dec.27, 1845 - Aug.5, 1897, was a grammer school teacher in Frankfurt a.d. Oder (Brand 1897). He published on a variety of subjects, but mainly on botany. His special interests were *Ranunculaceae* and botanical nomenclature. Besides the *Clavis Commeliniana* he published a *Clavis Riviniana* in 1891, Frankfurt a.d. Oder.

As Huth interpreted *Praeludia* and *Plantae Rariores et Exoticae* from a mixed copy of the 1715 edition, his references to *Praeludia* actually pertain to *Plantae Rariores et Exoticae* 1-33, so that his references to *Plantae Rariores et Exoticae* 1-33 pertain to *Praeludia,* 34-48 are correctly cited.

Of Huth's identifications, some 245 are correct, although 105 of these require nomenclatural adjustment. About 20 of his interpretations are incorrect. Twenty-one plates, not identified by Huth, are interpreted in the present volume, and 8 plates provided with an identification by Huth appear dubious to me.

6

Notes on typification

TYPIFICATION

Some remarks should be made on the use of illustrations for typification. The choice of illustrations as nomenclatural types is common practice in our days. It is based in ICBN art.7, where a nomenclatural type is defined as 'that *element* to which the name of a taxon is permanently attached'. The 'Guide for the determination of types', art.4b, explicitly allows for the choice of 'cited descriptions or illustrations' for lectotypification.

There has been, however, some doubt among taxonomists regarding the designation of illustrations as lectotypes. De Wit (1956:219) indicated a contradiction between art.18 note 3 and art.21 note 2 of the Stockholm Code, since art.21 allows for a figure as type where art.18 would require a specimen. However, art.18 note 3 allows 'a specimen or *other element* selected from the original material to serve as nomenclatural type'. The point is the interpretation of 'material'. Is 'material' a specimen, a whole plant or a plant-fragment, or does the word 'material' also cover a plate, i.e. printed matter? In my opinion, printed matter is 'material', or in the present wording of the Code 'element', and so I consider De Wit's dilemma unwarranted. Therefore, his designation of I.L.2b, cult. in the Buitenzorg Botanic Garden (BO) as neotype of *Cassia javanica* L., is superfluous. De Wit, who made many fruitful excursions in the past beyond the demarcation line of May 1, 1753, designated Commelin, *Hort. Med. Amst.* 1, 217. 1697, t.111 as the type of this name in formal taxonomy, and rightly so.

The Guide for the determination of types (art.4b) emphasizes the preference of specimens over descriptions and illustrations. In my opinion, this preference is unwarranted if the describing author, in casu Linnaeus, did not see these specimens. An example is *Allium chamaemoly* L. typified by Burser s.n. 'IX *Chamaemoly* Columna', in herb. Bauhin (BAS) by De Wilde-Duyfjes (1973:65). The Burser specimen was not seen by Linnaeus and is, therefore, no constituent element of the taxon in the sense of art.7 of the Code. The specimen vouches for Bauhin's taxon, but not necessarily for Linnaeus'.

Quite a different case is presented by specimens or drawings that served for the preparation of illustrations qualifying for typification. Such specimens, referred to as 'typotypes', have no status under the Code but can be very useful tools in the interpretation of iconotypes and thus are of the highest taxonomic value. Reveal *et al.* (1982) demonstrated this neatly in the case of *Phlox ovata* L., which is a *Ruellia* as is evident from Plukenet's original specimen. I refer to Stearn (1957: 128-130) for details.

In order to indicate the limits of what I still consider to be a 'constituent element' in the typification of Linnaean binomina, another example from De Wilde Wilde-Duyfjes (1973:77) may serve. I accept her typification of *Allium porrum* L. by Dodoens' figure entitled '*Porrum*' on page 688 in *Pemptades* (1616), although Dodoens is not cited in the protologue in *Species Plantarum* 1753:295. However it is cited in *Hortus Cliffortianus* p.77, the primary source of the nomen specificum legitimum. In view of the strictly economic format of *Species Plantarum* (see Svenson 1945), the absence of an earlier synonym in *Species Plantarum* does not imply an exclusion from Linnaeus' taxonomic concept. Jacobs (1964) provided another example of this situation in the typification of *Crateva tapia* L. by Plumier 1703:22 t.21. Although this reference was not cited in the protologue, Jacobs showed that Plumier's plate contributed essentially to Linnaeus' concept of the taxon and is, therefore, available for lectotypification. My proposals for the typification of *Talinum fruticosum* L. and of *Plumeria alba* L. are comparable cases.

Typification in the present volume concerns mainly names published by Linnaeus. In all 60 taxa published by Linnaeus are typified by descriptions and illustrations published by the Commelins. In most cases, they are lectotypes, but in some, as with *Xeranthemum ciliatum*, Commelin's plate is the holotype, as far as this term is applicable to Linnaean names.

Also names coined by N.L.Burman, Miller, Allioni, Lamarck, Jacquin, Poiret, Aiton, Haworth, De Candolle and Boissier are typified by a Commelin plate, not to mention illegitimate superfluous names published by e.g. Salisbury.

LINNAEUS' ANNOTATIONS IN HIS PERSONAL COPIES OF THE COMMELIN VOLUMES

Linnaeus annotated most of the plates in his copies of the volumes by the Commelins, which are preserved in his library at the Linnean Society of London (cf. Savage 1940). These annotations are a valuable source of information regarding Linnaeus' interpretations of the plants of the Commelins, in addition to the actual citations in his published works. In my texts on the plants, these annotations are cited as 'ms LINN'.

Linnaeus must have made his annotations over a long period of time, roughly speaking from 1751 to 1774. I have not attempted to date the annotations by means of the handwriting.

In a few cases, Linnaeus corrected his earlier identifications: *Muntingia* became *Varronia alba*, and *Sideritis canariensis S.cretica*. Several of his identifications remained unchanged, although later on Linnaeus used different names for them, e.g. *Senecio linifolius* 1759 not *S.longifolius* 1763, *Lobelia cheiranthus* 1753 not *Manulea* 1767, *Psidium guajava* 1753 not *P.pyriferum* 1762, *Lantana camara* 1753 not *L.mista* 1767, *Santolina* 1753 not *Athanasia* 1763.

Two plates are annotated with the serial number of the species in *Species plantarum* ed.1, so that these annotations were most likely made when Linnaeus was in the course of writing his final draft, viz. those of *Geranium* 1 *triste* and *Geranium* 17 *auritum*.

On the other hand, there are numerous annotations that point to a later entry, because Linnaeus cited Commelin in print for an earlier name, e.g. *Hermannia grossularifolia* 1753 became *H.pinnata* 1763 ms, *Trifolium fruticans* 1753 became *Psoralea bracteata* 1767 ms, *Othonna cheirifolia* 1753 and *O.crassifolia* 1767 became *O.frutescens* 1771 ms.

Two names are written down that remained unpublished: *Mimosa curassavica* (the plate was cited for *M. punctata*) and *Anthericum serotinum* (the plate was cited for *A.revolutum*).

Linnaeus cited one non-existing plate of Commelin: Comm. hort. 1 p.70 t.17 for *Physalis angulata* L. 1753: 183. This reference is to Camerarius 1588.

In conclusion, it appears that Linnaeus used the Commelin volumes frequently as a source of reference. The annotations are not an exact historical record of Linnaeus' changing taxonomic views. They document Linnaeus' opinion at a given moment, but do not necessarily reflect his earlier or his later views.

THE VAN ROYEN HERBARIUM

Linnaeus frequently made references to '*Roy. lugdb.*', '*Roy. leid.*' and '*Roy. prodr.*'. These references refer to Adriaen van Royen's *Florae Leydensis prodromus, exhibens plantas quae in horto academico Lugduno-Batavo aluntur*, published in Leiden in 1740.

The nomenclature in the *Prodromus* is Linnaean. The diagnostic phrase names are modelled after the ones published by Linnaeus in *Flora Lapponica* and *Hortus Cliffortianus*, as is explained by Van Royen in his introduction. Where living plants in the garden provided additional diagnostic characters, Van Royen corrected Linnaeus' names accordingly. Linnaeus accepted many of these changes as improvements, since in numerous cases the nomen specificum legitimum for the species in *Species Plantarum* is cited verbally from Van Royen. The *Prodromus* is cited by Linnaeus almost as frequently as his own *Hortus Cliffortianus*, and in most cases in both works identical phrase names are used.

There is every reason to assume that Linnaeus contributed substantially to the *Prodromus*. Linnaeus was in close contact with the Hortus Botanicus in Leiden during his residence in Holland (1735-1738); the distance to his main domicile – Clifford's Hartekamp – is only 20 km. From 1730 onwards, when Boerhaave resigned from the post, Adriaen van Royen filled the post of director of the Hortus. Linnaeus stayed at Van Royen's house after his return from England (1736) and also during the winter of 1737-38 in order to help Van Royen with the rearrangement of the garden according to a new system (Veendorp & Baas Becking 1938:124, Blunt 1971:12, Ewan 1971:29). In fact, Linnaeus was put under a moral obligation by him to stay in Leiden for this purpose, although he had already decided to leave Clifford to return to Sweden where his fiancée Sara Lisa was waiting.

Linnaeus not only rearranged the garden but also cooperated in the writing of the *Prodromus*. In later days, he told his pupil Giseke, 'Very well, I said, let us work out a method of classification which is neither Boerhaave's nor mine. Van Royen consented, and that was the origin of the Van Royen method; but I do not want it to be known.' (Blunt 1971:124). This 'Van Royen method' is the *Methodi naturalis praeludium*, published in the *Prodromus*. It is thus clear that Van Royen was working on his book in 1737. When Linnaeus left Leiden around Easter 1738, the *Prodromus* had probably not been completed, and Van Royen must have worked on it until its publication in 1740. However, the framework of the book was set, and some parts of it must have been written up already. Stafleu (1971: 161) showed Linnaeus' hand in the methodus naturalis, the nomenclature and the bibliographical references.

The *Prodromus* is, in my opinion, as close as anything to a composite work of Van Royen and Linnaeus. Linnaeus used it when writing *Species Plantarum* (1746-1752). In the list of precursory works for the *Species Plantarum* presented by Stearn (1957:65), viz. *Flora Lapponica* (1737), *Hortus Cliffortianus* (1738), *Flora Virginica* (1739), *Flora Suecica* (1745) and *Flora Zeylanica* (1747), *Flora Leydensis prodromus* (1740) should be included, as well as *Hortus Upsaliensis* (1748). A copy of Van Royen lying open on his desk certainly

fits into the vivid picture drawn by Stearn (1957:107) of Linnaeus' desk in 1751, when the final draft of the *Species Plantarum* was written.

Linnaeus must have known the living collection of the garden in Leiden quite well; how else could he have rearranged it? During his seven months' stay in Leiden, autumn and spring-flowering plants were directly available, but in previous years he must have seen the garden in summer as well. Moreover, Van Royen's herbarium was at his disposal and Linnaeus listed it under the herbaria familiar to him in his preface to *Species plantarum.* He certainly knew it better than the herbaria of Sloane, Sherard, Bobart, Miller, Surian, Tournefort, Vaillant and Jussieu, which are also mentioned, but this may have been much in the way of window dressing (cf. Stearn 1957:108).

I, therefore, cannot agree with Stearn (1957:105) that Van Royen's herbarium is only indirectly relevant to Linnaeus' work since it was not studied by him. In my opinion, the herbarium contains 2-3000 specimens that are relevant for the typification of Linnaean names, some 150 of which may even be holotypes. The same position is taken by Van Steenis-Kruseman (1979:34) and by several authors who designated Van Royen specimens as lectotypes, e.g. Jansen (1981): *Capsicum annuum,* Veldkamp (1978): *Gomphrena ficoidea,* and Hilliard & Burtt (1981): *Gnaphalium dentatum, G. luteo-album, G.purpureum, G.scabrum, Xeranthemum staehelina.* Definite proof that Linnaeus studied the herbarium should be provided by the presence of Linnaean annotations, but I have found none on the sheets I have studied. However, it is questionable whether Linnaeus would have found it necessary to add any annotations to the sheets, which could explain this absence. It is often difficult to decide which specimens in the Leiden general herbarium are Van Royen specimens, and which of these qualify as syntypes of Linnaean binomina. The specimens are annotated 'herb. Royen' in a neat, probably clerical, hand, most likely dating from the 19th century.

Specimens of both Adriaen van Royen (1704-1770) and his nephew and successor David (1727-1799) are thus marked. Adriaen was praefectus horti from 1730 and ordinarius in botany and medicine from 1732 onwards. He resigned from his botanical offices in 1754 but held the chair of medicine until 1775. David succeeded his uncle as praefectus horti and professor botanicis in 1754. He retired in 1786.

It is by no means easy to differentiate between the specimens of Adriaen and those of David. Sheets annotated with Linnaean binomina and references to later Linnaean works, often including the second edition of *Species Plantarum,* must be attributed to David. The handwriting in these cases is fluent in a relatively thin line. On many sheets a full reference is given to Adriaen's *Prodromus* of 1740 and to earlier synonyms of, e.g. Hermann and Commelin. These annotations are made in a more sturdy hand and in a heavier line, and these are obviously Adriaen's original specimens. On these sheets the specimens are commonly mounted with decorative urns and/or pennants. Such specimens do, in my opinion, qualify for the typification of Linnaean binomina because they are directly related to the *Prodromus,* and Linnaeus studied the specimens or the living plants they vouch for between September 1737 and May 1738. There are sheets where both handwritings are found and where annotations in different hands also occur. Some sheets that I consider to be genuine Van Royen material to all intents and purposes lack the annotation 'herb. Royen'. A closer analysis of the herbarium is needed in order to elucidate its contents and history. For the time being, only specimens with a clear and unambiguous link to the *Prodromus* should be considered for typification.

It is by no means certain that a Van Royen specimen always represents a plant cultivated in Leiden. Several sheets incorporated in the Van Royen herbarium have a different origin. A specimen of *Lantana camara* was received from Mark Catesby. Several sheets annotated 'mss Houston' may well be duplicates of the Houston herbaria in BM, or San Francisco, or Houston specimens presented to Linnaeus by Miller in 1736, and left by Linnaeus in Leiden. Houston was a pupil of Boerhaave. A comparative study is needed here.

A sheet of *Plumeria rubra* is annotated by Sebastian Vaillant (1669-1722) according to an anonymous 'Vaillant scripsit'. This would mean that also earlier acquired specimens were incorporated in the Van Royen herbarium. One should look for Van Royen specimens in the Rijksherbarium in the folders for cultivated plants, marked O.H. with blue cover labels.

Apart from the sheets in the Rijksherbarium, other Van Royen material, both of Adriaen and of David, is represented in LINN, S-Linn, BM-Cliff, OXF-Sherard, G-Burman, G-DC, and San Francisco-Houston.

7

Presentation of the texts on the water-colours and engravings

For clarity and brevity a strict pattern of treatment is used here for the presentation of the data on Commelin's plants and for the discussion on these data. The species are arranged alphabetically in families and genera.

1. The name of the taxon is given in modern nomenclature according to my interpretation of the figured plant. In some cases, I could not reach a satisfactory identification, and my reasons for using a particular name, even if it is incorrect, are subsequently discussed in the taxonomic notes.

2. The location of a water-colour within the atlas is given with the manuscript name accompanying it. Synonyms and references to the literature are explained in parentheses. If the water-colour has been reproduced in colour, the plate number is given in square brackets. These colour reproductions are printed on the last 64 pages of the clothbound commercial edition only.

3. The location of an engraving within the published work is given with the published name whenever it differs from the manuscript name. Variants in the orthography of the name and abbreviations are not rendered.

4. The name of the artist who signed the water-colour is given. An approximate date is given in parentheses, conjectured from the location in the atlas, the dates of payment as entered in the 'Memoriael', and from Commelin's text. Only a few water-colours were paid for after 1706 according to the 'Memoriael'. Therefore no water-colour is dated later than 1706, although for some 10 water-colours this might be a slight antedating.

4a. Notes on the plate are provided in cases where the water-colour differs considerably from the published engraving (there are always some minor discrepancies) or when other matters need some comment such as the use of plants, or drawings from other sources.

5. Citations in the literature of Commelin's plate are listed under the names the respective authors used for it. The listing provides an impression of the role the plate has played in taxonomy. Pre-linnean literature and post-linnean authors who did not use the binary nomenclature are cited in square brackets, 'ms LINN' stands for Linnaeus' identifications of Commelin's plates in his personal copies of Commelin's books. 'Huth' refers to his *Clavis Commeliniana.*

6. Taxonomic notes mainly concern the status of the plate as regards the typification of names for which it is cited in the protologue. I have refrained from decisions on typification when they could restrict the freedom of a future monographer to decide in moot points and wherever my knowledge of the taxa concerned was insufficient. I tried to use typification as a tool to stabilise names in their present interpretation.

7. The area of distribution is mainly derived from literature records.

8. The date of introduction into the Hortus Medicus is deduced from Commelin's text or from the estimated date of the water-colour. When earlier introductions in other gardens are known to me, I have listed them, but many still earlier records remain hidden in the literature. In some cases, the quoted year probably represents the year of dispatch, not the year of the actual introduction in Amsterdam.

9. Selected specimens that satisfactorily match the water-colour and/or plate, or that in some other way inspired my identification of the plant are cited. These specimens thus constitute a *Herbarium Commelinianum Speculativum,* an image of Commelin's figures with my mind as a mirror.

Herbaria are cited by the codes used in *Index Herbariorum* (Holmgren, Keuken and Schofield 1981):

AMD	Hugo de Vries-laboratorium, Amsterdam
B	Botanischer Garten und Botanisches Museum, Berlin-Dahlem
BM	British Museum (Natural History), London
BOL	Bolus Herbarium, Cape Town
C	Botanical Museum and Herbarium, Copenhagen
E	Royal Botanic Garden, Edinburgh
G	Conservatoire et Jardin botanique de la Ville de Genève
G-DC	Herbier De Candolle – see G
GH	Gray Herbarium of Harvard University, Cambridge
H	Botanical Museum, University of Helsinki
H.S.C.	Hortus Siccus Cliffortianus – in BM
K	Royal Botanic Gardens, Kew
L	Rijksherbarium, Leiden
LINN	Linnean Society of London
MAP	Herbarium at Maputo, representing the National Herbarium of Moçambique (LMA + LMU)

MO	Herbarium of Missouri Botanical Garden, Saint Louis
NBG	Compton Herbarium, National Botanic Gardens of South Africa, Kirstenbosch
P	Muséum National d'Histoire Naturelle, Paris
PRE	National Herbarium, Pretoria
S	Swedish Museum of Natural History, Stockholm
SAM	South African Museum Herbarium, Kirstenbosch
SBT	Herbarium, Bergius Foundation, Stockholm
Tafira	Herbarium of Jardin Botanico Viera y Clavijo, Tafira Alta, Las Palmas de Gran Canaria
U	Institute of Systematic Botany, Utrecht
UPS	Herbarium, University of Uppsala
WAG	Herbarium Vadense, Wageningen
WAHO	Institute for Horticultural Plant Breeding, Wageningen

My sincere thanks are due to the directors and curators of these herbaria for their hospitality and assistance and for sending specimens on loan.

10. Icones are cited with the same purpose as specimens. In many instances, in particular when succulent plants are concerned, good drawings have an advantage over dried herbarium specimens.

8

Discussion on the plants

ACANTHACEAE

Justicia hyssopifolia L., Sp. Pl.:15 (1753)
Atlas. 8 t. 38. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. LINN 28.10 *'hyssopifolia* 4' is proposed here as the type of the name, since there is a new nomen specificum legitimum in Sp. Pl.
The species is often considered to be the type of *Justicia,* but Farr, Leusink & Stafleu 1979:896 have *J.adhatoda* L. as lectotype. Webb & Berth. used the genus *Gendarussa* Nees to accommodate *J.hyssopifolia,* also *Adhatoda* Miller has been used for it.
Distribution. Canary Islands.
Introduction. Plukenet (1694 t. 280 f. 1) provided the first record of the species.
Specimens seen. LINN 28.10, lectotype; H.S.C. 10 (BM); Bourgeau 1461 (WAG); Wijnands 630 (WAG).

AIZOACEAE

Trianthema portulacastrum L., Sp. Pl.:223 (1753)
Atlas. 8 t. 1. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. Pantropical weed.
Introduction. Plukenet (1691 t. 95 f. 4) and Hermann (1698 t. 213) published illustrations of this species, both are syntypes of *Trianthema portulacastrum* L.
Specimens seen. Jeswiet 67 (WAG); Carreira 72 (MAP); Eyma 1736 (L).

AMARANTHACEAE

Gomphrena globosa L., Sp. Pl.:224 (1753)
Atlas. 1 t. 18. *Amarantho affinis, Indiae Orientalis, Floribus glomeratis, Purpureis Ocymoides folio.* Breynii Cent. (Breyne 1678:109 t.51). Wadapu Hort. Mal. (Reede 10:73 t.37).
Dutch: Indiaasche Amarant, met een Bol-achtige purpure Blom.
Commelin. Hort. Amst. 1:85 t.45. Idem, but without *'purpureis'* and with a different Dutch name: Bolronde oost-indische fluweel-gelykende bloemen met bladeren van ocymoides.
Artist. Jan Moninckx (1686-1690).
Citations. *Gomphrena globosa* L. 1753:224, [Hort. Cliff.:86.1, Fl. Zeyl. no.115, Hort. Ups.:57.1, ms LINN, V.Royen:418, Burm. 1737:16], Burm.f. 1768 Fl. Ind.: 72, Aublet 1775:280, Gaertn. 1791,2:216, Wilid. 1797: 1321, Huth.
Taxonomic notes. Mears (1980:85-86) and Townsend (1980:55) designated as lectotype of *Gomphrena globosa* a specimen in Clifford's herbarium, because Linnaeus' concept of the species in Sp. Pl. is identical with that in Hort. Cliff. Mears refers to the 'bound hortus siccus of Clifford'; to my knowledge there is no such thing. Mears might have had in mind the bound Hermann herbarium at BM, but his page number 86 is correct for H.S.C., not for Hermann.
Townsend (l.c.) designated the specimen in H.S.C. labelled *'capitulis argenteis'* as type. Thereby the white-flowered form, var. *albiflora* Moq. in DC. is the type variety (= *G.globosa* var. *globosa*).
Distribution. A native of tropical America long cultivated in the warmer regions of the world (Townsend l.c.).
Introduction ante 1689. Commelin gives no source of his plant. Breyne (1689:42) recorded the species from the collections of Beverningk, Hortus Amsterdam and Hortus Leiden. This species is also represented in the Codex of the Duchess of Beaufort 1 t.12. The species is commonly cultivated at present.
Specimens seen. H.S.C. 86.1, lectotype (BM); LINN 319.1 & 2; Hermann 2:76, 5:1 = 427 (BM); Breteler 219 (WAG); Wijnands 817, culta (WAG).

AMARYLLIDACEAE

Agapanthus africanus (L.) Hoffmanns., Verz. Pfl.-Kult.:35 (1824) [Pl.26]
Atlas. 4 t.15. *Hyacinthus Africanus Tuberosus, Flore caeruleo umbellato.* Breynii Prod: 1. pag:39 (Breyne 1680:30).
Hyacintho affinis Africana Tuberosa radice umbella caerulea inodora Herman: Hort: Lugd: Bat:327 (Hermann 1687:327).
Commelin. Hort. Amst. 2:133 t.67. Idem.

Justicia hyssopifolia. Atlas 8 t.38

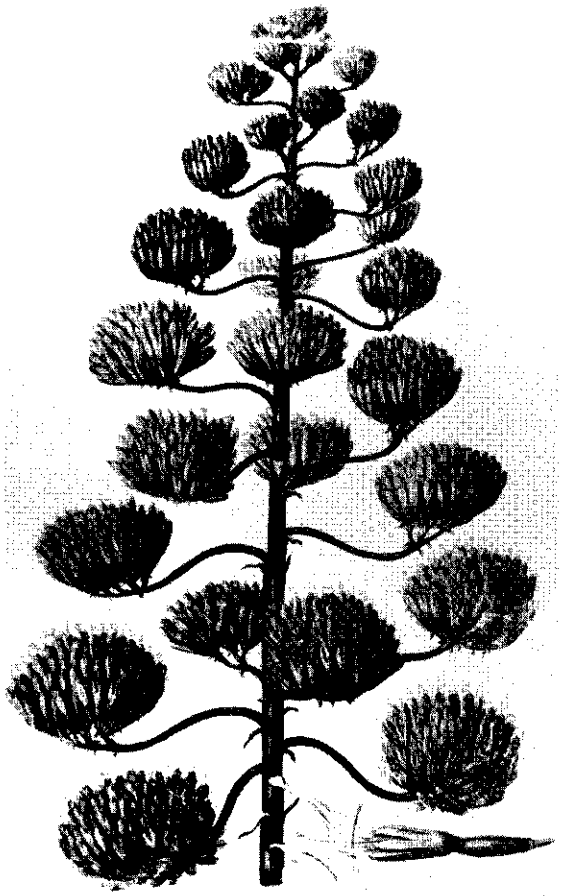
Gomphrena globosa. Atlas 1 t.18

Artist. Jan Moninckx (1698).
Citations. *Crinum africanum* L. 1753:292, [Hort. Cliff.: 126.2, V.Royen:27, ms LINN, Seba 1734:29 t.19 f.1, Breyne 1739:23, Fabricius 1763:4], Burm.f. 1768 P.F.C.:9, Miller 1768, Gaertn. 1791,2:15.
Agapanthus umbellatus L'Hérit. 1789:17, Willd. 1799: 48, Huth, Kraus 1893:116.
Agapanthus africanus (L.) Hoffmanns. 1824:35 – Krelage 1946:742, Leighton 1965:1.
Taxonomic notes. Leighton (1965:17) designated LINN 415.6 as lectotype of *Crinum africanum* L. *Agapanthus umbellatus* L'Hérit. is an illegitimate name based on the same type; it is the type species of *Agapanthus.*
Distribution. South Africa: S.W.Cape.
Introduction ante 1679. *A.africanus* flowered in the garden of Beverningk in 1679, as recorded by Breyne (1680). Hermann (l.c.) grew the species in Leiden, Plukenet (1692 t.195 f.1) illustrated a specimen from Hampton Court.
Commelin received his plant from Gerbrand Pancras; it flowered and fruited in 1698.
Specimens seen. LINN 415.4; Goldblatt 1501 (WAG); De Wit & Van Zee 15120, culta (WAG); Wijnands 906 (WAG).

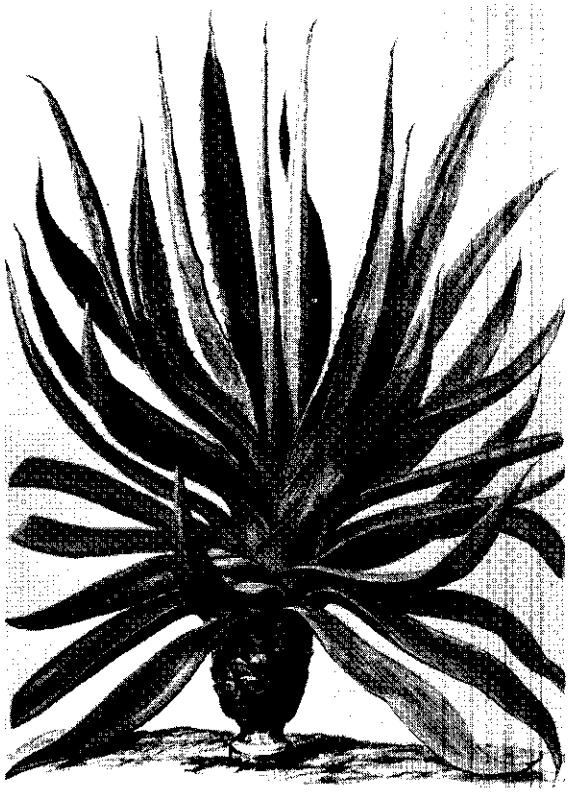
Agave americana L., Sp. Pl.:323 (1753)
Atlas. 7 t.49. No name.

Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. Mexico.
Introduction 1561. The first plant of *Agave americana* in cultivation was probably grown by J.A.Cortuso at Padua in 1561 (Danielli 1885:15). A plant flowered in Leiden in 1698 (Karstens and Kleibrink 1982:105).

Agave rigida Mill., Gard. Dict. ed.8 no.8 (1768)
Atlas. 3 t.16. *Aloe Americana ex Vera Cruce, foliis angustioribus & minus glaucis.* Kiggelarii Hort: Beaumont: 4 (Kiggelaer 1690:4).
Aloe Americana foliis viridioribus & Angustioribus Hermanni Paradisi Batavi Prodrom: Pag:305 (Hermann 1689:305).
Commelin. Hort. Amst. 2:33 t.17. Idem, without the Hermann citation, in the text it is cited however.
Artist. Jan Moninckx (1686-1700).
Citations. The plate is not cited by Linnaeus, there is no ms annotation in his copy of the book in LINN.
Non-binomial: Fabricius 1763:13.
Agave lurida Ait. 1789:472 – Huth.
Agave rigida Mill. – Trelease 1908, with reproduction of the plate; Berger 1915.
Agave angustifolia Haw. 1812:72 – Salm-Dyck 1834:7.



Agave americana. Atlas 7 t.49



Agave rigida. Atlas 3 t.16

Taxonomic notes. Miller based his species on plants cultivated in England.
The species seems to have been commonly cultivated in the 18th century. Miller cited Kiggelaer's Hortus Beaumontianus, also the source of Commelin's name. Miller states that the plant does not form suckers, whereas Commelin (1701:33) says that it is propagated by them.
There is no holotype extant of Miller's name, an analysis of Kiggelaer's Herbarium (BM) might bring up a specimen.
At present Commelin's plate is the only tangible material available for the understanding of the taxon. It could be proposed as neotype, were it not that neotypes tend to be designated for perfectly well understood species for which type material is lacking. Moreover there is some doubt whether the two are the same. Commelin's plate does not give much to go on. Its affinities are with *Agave fourcroydes* Lem. the presently accepted name for the hennequen-group of *Agave.*
The main difference from *A.fourcroydes* are the spiny leaftips, which in modern *Agave* taxonomy are considered less important. *A.sisalana* Perrine is linked up with *A.rigida* as it is considered a cultigen derived from *A.rigida* by Engelmann (1867) and a selection from *A. fourcroydes* by Burkill (Dict. Econ. Prod. Malay Penins. ed.2, 1966:70).
If *A.rigida* be considered conspecific with *A.fourcroydes* the latter well-known name must fall, but it needs a very broad concept to be sure that this includes Commelin's plate. The type locality is Vera-Cruz if Van Beaumont or his supplier is to be believed. Trelease (l.c.) suggests 'between Venezuela and Yucatan'.
Distribution. This species is not known at present, it is considered extinct by Berger (1915:240). Haworth 1812:74 still mentions it as growing beautifully at Kew.
Introduction ante 1690. The plant was given by Simon van Beaumont (Commelin 1701:34) who got it from 'Vera Crux'.
Miller gives Kiggelaer's name as the only synonym but attributes it to H.L., that is according to his 'Explanation of the Authors names' Hermann's Catalogus of 1687. Since there is no such name in Hermann, it probably is in error for H.Beaum. or H.Amst.

Agave cf. vera-cruz Mill., Gard. Dict. ed.8 no.7 (1768)

Atlas. 3 t.15. *Aloe Americana ex Vera Cruce, foliis*

Agave vivipara. Atlas 6 t.4

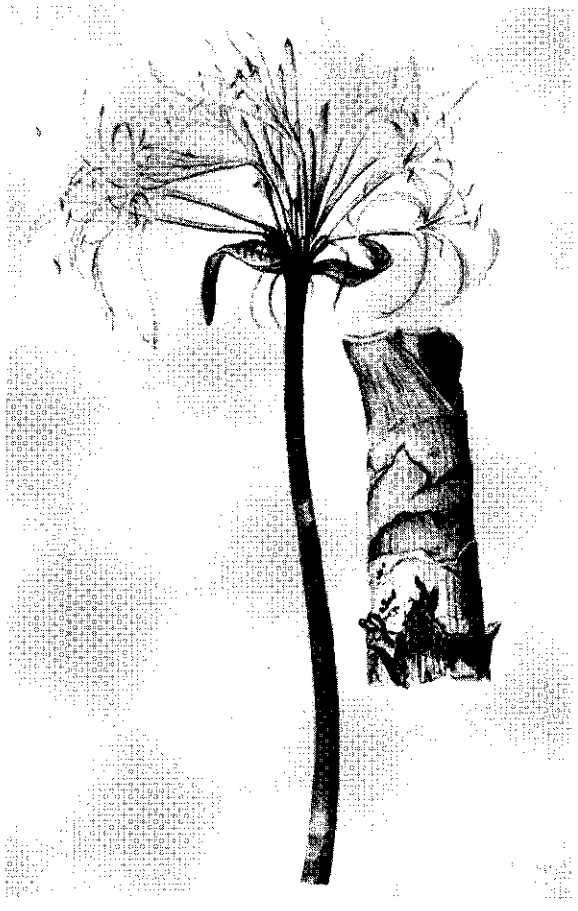
latioribus & glaucis Kiggelarii Hort. Beaumont: Pag:4 (Kiggelaer 1690:4).
Aloe Americana, foliis coesiis latioribus Hermannii Parad: Batav: Prod:305 (Hermann 1689:305).
Commelin. Hort. Amst. 2:31 t.16. Idem, without the Hermann citation, in the text it is cited however.
Artist. Maria Moninckx (1686-1700).
Citations. Cited in Hort. Cliff.:130. 1α, which later was included in *Agave americana* L. α 1753:323, but not cited there.
Agave vera-crucis Haw. 1812:72 – Salm-Dyck 1834:8, Huth, Kunth 1850:827.
Agave lurida Ait. 1789:472 – Baker 1888:184.
Taxonomic notes. The plate is very poor. The reason why this plate and the following one (t.17) of *A.rigida* Mill. are included probably is the discussion in Commelin's time whether or not they were identical, alluded to by C.Commelin.
A.vera-crucis Haw. and *A.lurida* Ait. are synonyms of *A.vera-cruz* Mill.
Distribution. Mexico (Jacobsen 1970:56).
Introduction ante 1690. The plant was given by Simon van Beaumont (Commelin 1701:34).

Agave vivipara L., Sp. Pl.:323 (1753)

Atlas. 6 t.3 & 4. *Aloe americana polygona.*
Commelin. Prael. Bot.:65 t.15. Idem.
Artist. Maria Moninckx (1702).
Citations. *Agave vivipara* L. 1753:323 as 't.65', [ms LINN, Tilli 1723:7], Burm.f. 1768 Fl. Ind.:84, Houttuyn 1777:373, Willd. 1799:193, Aiton 1811:302, Sweet 1818:75, Loudon 1830:118, Salm-Dyck 1834:8, Herbert 1837:128, Kunth 1850:822, Huth, Trelease 1913:223, Berger 1915:223, Wagenaar Hummelinck 1936:232, Jacobsen 1970:57 (as *Agave americana* Commel. as if it were a valid name).
Agave angustifolia Haw. 1812:72.
Taxonomic notes. Since no specimen is preserved in LINN and the Commelin plate is the only available element in the protologue, I propose it as lectotype of *Agave vivipara* L.
Agave angustifolia Haw. is a homotypic synonym as the Commelin plate is cited in the protologue, also taxonomically it is considered to be identical.
Wagenaar Hummelinck (l.c.) was unable to place Plate 15 under one of his micro-species.
Miller 1768 has *Aloe Americana sobolifera* Hermann 1687:16 as a synonym of *A.vivipara* L. Commelin regarded it as an altogether different species.
Distribution. Antilles.
Introduction 1700. 'Ex America' in 1700 by courtesy of the Amsterdam burgomaster Johannes Hudde. It flowered 14 Oct. 1702.
Specimen seen. Britton & Shafer 3060 Curaçao (U), not a good match with Commelin's plate.

Crinum americanum L., Sp. Pl.: 292 (1753)

Atlas. 6 t.29 & 30. *Lilio-Asphodelus Americanus sempervirens maximus, polyanthus albus.*
Commelin. Rar. & Exot.:14 t.14. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Crinum americanum* L. 1753:292, [Hort. Cliff.:127.1, V.Royen:37, ms LINN, Dillen 1732:194 t.161 f.195, Fabricius 1763:7], Miller 1768, Aublet 1775:303, Willd. 1799:46, L'Héritier 1789:8, Huth, Uphof 1942:64.
Crinum asiaticum L. 1753:292 – Kunth 1850:559 excluded the plate, and also Dillen 1732:194 t.161 f.195, from *C.americanum* and placed them with doubt under *Crinum asiaticum.*
Amaryllis littoralis Salisb. 1796:230 'mala'.
Taxonomic notes. The nomen specificum legitimum for *Crinum americanum* L. is new. However, Linnaeus based it almost literatim on the observation in Hort. Cliff. He also cited Hort. Cliff.:127, Hort. Ups.:76 and V. Royen:37 in the protologue. No specimen is available in LINN, the specimens in Herb. V.Royen (L897324-114 and -115) are annotated by the younger Van Royen.



Crinum americanum. Atlas 6 t.30

In H.S.C.127.1 two sheets are present. The sheet carrying a specimen with a flower on the left is proposed as lectotype.
Commelin's and Dillen's plates are paratypes, both match the type.
Distribution. Subtropical and tropical America, West-Indies.
Introduction ante 1705. Commelin gives no origin of his plant. An earlier source is not known to me.
Specimens seen. H.S.C.127.1, lectotype (BM); Herb. V. Royen 897324-114 and -115 (L); Dusen 17347 (S).

Crinum commelynii Jacq., Hort. Schoenbr. 2: 40 t.202 (1797) [Pl.49]
Atlas. 6 t.31. *Lilio-Asphodelus Americanus sempervirens minor albus.*
Commelin. Rar. & Exot.:15 t.15. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Crinum americanum* L. β 1753:292, [Hort. Cliff.:127, Hort. Ups.:76, ms LINN], L'Hérit. 1789:8, Kunth 1850:559, Huth.
Crinum erubescens L.f. ex Ait. 1789:413 – Willd. 1799: 46.
Amaryllis propinqua Salisb. 1796:230-231.
Crinum commelynii Jacq. 1797:40, Baker 1888:86, Uphof 1942:76, Hannibal 1972:312.
Taxonomic notes. *Crinum commelynii* was described and pictured by Jacquin. Later authors adopted this species viz. Baker, Uphof and Hannibal (ll.cc.). Hannibal listed *C.commelinianum* Herb., *C.dietrichii* Schult., *C. lindleyanum* Herb., and *C.viridiflorum* Roem. as synonyms to *C.commelynii* Jacq. Although he adopted *C. commelynii* as a species (1972:312) and constructed a key to *Crinum* (l.c.:232-235) he did not enter *C.commelynii* in the key nor did he make a new description. Baker and Uphof (ll.cc.) ascribed *C.commelynii* to Guyana and the Amazone valley. On the other hand, floras of that area, such as Seubert in Martius' Flora Brasiliensis, and Boterenbrood in Pulle's Flora of Surinam, do not mention *C.commelynii.*
Linnaeus referred to Commelin's plate when publishing *Crinum americanum* and placed it as a variety 'β', the only-base for this variety. However, I do not agree with the reduction of Commelin's *Lilio-Asphodelus Americanus sempervirens minor albus* to *Crinum americanum* L., it represents another species.
In 1789 *Crinum erubescens* was proposed by L.f. and published by Aiton (l.c.). No authentic specimen of *C. erubescens* seems to have been preserved. Aiton made no reference in the protologue to other elements and his description is too vague to permit the establishment of the identity of *C.erubescens.* It is to be noted that a collection from Springgrove, anno 1784, is filed in BM under both *C.erubescens* and *C.americanum.* These specimens are sterile and (to me) unidentifiable.
Howard (1979:473) designated as a (neo)type of *C.erubescens* 'cultivated plant represented by Curtis Bot. Mag. 27, t.1073. 1807'.
Willdenow sank *C.commelynii* in the synonymy of *C. erubescens.* Baker considered *C.commelynii* to be scarcely more than a variety of *C.erubescens* and accepted as differential characters: bulb 1,5-2 cm in diameter, flowers 4-6 in an umbel. *C.commelynii* could well be a poorly developed form of *C.erubescens.*
I have no evidence that *C.commelynii* Jacq. ought to be maintained as a separate species and it might be preferable to reduce *C.commelynii* to *C.erubescens.* Commelin did not state the origin of his plant. Hardly any specimens referable to either *C.erubescens* or *C.commelynii* were seen by me. A final identification of Commelin's plate ought to be considered by a future monographer. If Commelin's plate is eventually placed in another species than *C.erubescens,* the overlooked name *Amaryllis propinqua* Salisb. has to be taken into account as it has one year priority over *Crinum commelynii* Jacq.
Distribution. Guyana and the Amazone river (Uphof), Southern America (Hannibal).
Introduction. Commelin did not specify the source of his plant.

Specimens seen. Drouet 2012 (S); Dusen 17019 (S); Hatschbach 20640 (L); Mosen 2974 (S); Oldenburger c.s. 666 (U).

Crinum zeylanicum (L.) L., Syst. Nat. ed. 12: 236 (1767) [Pl.3]

Atlas. 1 t.34. *Lilio-Narcissus Ceylanicus, maximus Latifolius, Flore Hexapetalo, niveo Colore, externae Linea purpurea delineata.* Cat: Hort: Med: Amstelod. (Commelin 1689:201).
Lilium Ceylanicum, Umbelli-ferum & Bulbiferum, Herm: Cat. (Hermann 1687:682 t.683).
Dutch: Groote Ceylonse Lelij-Narcis met breede Bladeren, sneeuw-witte Blommen, van buyten Purpur gestreept.
Commelin. Hort. Amst. 1:73 t.37. *Lilio-Narcissus ceylanicus Lati-folius, flore niveo, externe linea purpurea striato.*
Tolabo ceylanensibus Par. Bat. Prodr. (Hermann 1689: 347).
Dutch: Breet-bladerige ceylonsche lely-narcisse, met een sneeu-witte, en van buyte purpur gestreepte bloem.
Artist. Jan Moninckx (1686-1690).
Citations. *Amaryllis zeylanica* L., 1753:293 (as '73 t.73'), [V.Royen:36-37, Boerhaave 1719,2:147.5, Tournefort 1700:386], Burman f. 1768 Fl. Ind.:81, Miller 1768, L'Héritier 1789:14, Willdenow 1799:56, Huth.
Crinum zeylanicum (L.) L. 1767, [ms LINN, *'Amaryllis'* deleted], Persoon 1797:338, Baker 1888:87, Uphof 1942:64, Nordal 1977:188 (as '73 t.73').
Crinum ornatum (L.f. ex Ait.) Bury 1831-34 – Herbert 1837:262, Kunth 1850:573, Krelage 1946:740.
Amaryllis ornata (L.f. ex Ait.) Salisb. 1796:232.
Amaryllis lineata Lam. 1783:123.
Taxonomic notes. *Amaryllis zeylanica* L. 1753 has the nomen specificum legitimum copied from Van Royen 1740:36. Therefore, a specimen in the herb. Van Royen would be the best lectotype, but no specimen is available. Commelin's plate is the next best element.
Ehret's plate is considered by Linnaeus a different kind (β) and was included with doubt: '?'.
The epithet *'zeylanica'* and the habitat 'Zeylona' also indicate that Ehret's plate of an African plant did not contribute to Linnaeus' concept of *Amaryllis zeylanica.* For these reasons I cannot accept Nordal's (1977) choice of Ehret's plate as lectotype of the name.
Nordal cites the publication of the name as '1753 p.421'. This is the page in the second edition 1762 where the ? is left out. Here also Rudbeck's plate (1701) is cited, which is a copy of Commelin's. Nordal cites the combination in *Crinum* as from '1770, the 13th edition of Systema Naturae, Wien'. This is the Vienna reprint of the 12th edition. It was, however, already published in the 12th edition of 1767.
The specimen LINN 415.5 'HU' is stated to resemble *C.asiaticum* L. by Nordal (l.c.). The transcription of Smith's note on the sheet by Savage (1945) as 'syn. of *Crinum africanum* Sp. Pl. belong to this' is in error, I read it as *'asiaticum'.* The specimen is not a syntype.
The name Tolabo, cited by Commelin from Hermann 1689, is given as the sinhalese name for *Crinum asiaticum* L. by Parsons 1942:106. He does not give a local name for *C.zeylanicum.* Dassanayake (1981:481) writes that 'Tolabo' is still in use in Sri Lanka. His discussion of Nordal's typification agrees well with mine.
Crinum latifolium L. Sp. Pl. 291.1753 is considered by some to be closely related to *C.zeylanica.* In Bailey & Bailey 1978:334 the taxon is treated as *C.latifolium* L. var. *zeylanicum* (L.) Hook.f. ex Trimen. Nordal 1977: 189 does clarify the situation insofar that she considers LINN 415.1 *'Crinum latifolium'* as close to *C.asiaticum.* Commelin in Reede vol.11:78 regarded sjovanna pola tali, the basis of *C.latifolium,* as not yet described. He must have regarded his *Lilio-Narcissus ceylanica* as different.
Distribution. Tropical Africa, Ceylon.
Introduction 1685. The 'bulb' was sent from Ceylon in 1685 as 'Tolabo'. No earlier reference is known to me.
Specimens seen. W.de Wilde c.s. 6308 and 6134, Ethiopia (WAG).

Cybistetes longifolia(L.) Milne-Redhead & Schweickerdt, J.Linn.Soc.Bot.52:192 (1939)

Atlas. 1 t.35. *Lilio-Narcissus Indicus, diluto Colore purpurascens, vel Narcissus Indicus Liliaceus, diluto Colore purpurascens.* Ferrari Flora (Ferrarius 1633: 117 t.121).
Dutch: Indiaanse Leli-Narcis, met bleeck-purpure Blommen.
Commelin. Hort. Amst. 1:71 t.36. *Lilio-Narcissus africanus platicaulis, humilis, flore purpurascente, odorato.*
An *Narcissus major indicus serotinus* Cornuti ? (Cornut 1635:155).
Dutch: Africaansche lely-narcisse met een ruykende purpure bloem en lege platte steel.
Artist. Jan Moninckx (1686-1690).
Citations. Rudbeck 1701,2:180 f.8 is a copy of Commelin's plate, *'Amaryllis'* ms LINN.
Amaryllis longifolia L. 1753:293 – not cited in the protologue – L'Héritier 1789:13.
Cybistetes longifolia (L.) Milne-Redhead & Schweickerdt 1939:193.
Brunsvigia falcata (Jacq.) Ker-Gawl., Bot. Mag. 1812, t.1443.
Taxonomic notes. Commelin pointed out a confusion of the pictured (t.36), with Ferrarius' plant cited in the atlas. Ferrarius' illustration represents *Amaryllis belladonna* L. This is one of the few instances where it is evident that the text in the atlas vol.1 was written before the publication of Hort. Amst. 1.
Amaryllis longifolia L. has a nomen specificum legitimum adopted from Van Royen:36.6. No specimen vouching for this entry is available in Van Royen's her-

Cybistetes longifolia. Atlas 1 t.35

barium, nor is there one in the Linnean herbaria. Hermann's illustration of *'Lilium africanum humile longissimis foliis polyanthus saturato colore purpurascens'* (1698 t.195) is the only other element in the Linnean protologue. It is designated here as the lectotype of *Amaryllis longifolia* L., as already implied by Milne-Redhead & Schweickerdt (1939:159).
Crinum falcatum Jacq., Hort. Bot. Vindob. 1777, 3:34 t.60, the basionym of *Brunsvigia falcata* Ker-Gawl., is a synonym of *Amaryllis longifolia* L.
Distribution. South Africa: S.W.Cape.
Introduction ante 1635. Commelin credited Simon van der Stel for sending a bulb from the Cape.
Narcissus pumilus indicus polyanthos of Cornut 1635: 153 t.57 probably is the first record of the species. Hermann 1687:682 is the first evidence of its cultivation in Holland. Hermann also mentioned it from Fagel's collection. Agnes Block had a water-colour made by Pieter Withoos of *'Lilium Africanum rarissimus folio polianthos diluto colore purpurascens, seu narcissus indicus liliaceus'*, this may well have been *Cybistetes longifolia* (see V.d.Graft 1943:136).
An extensive pre-Linnean synonymy is given by Milne-Redhead & Schweickerdt (l.c.). *Cybistetes longifolia* is represented in Breyne's Flora Capensis, Plate 17 in the edition of Gunn & Du Plessis (1978).
The species is not in cultivation in Europe nowadays. Its populations in nature are severely depleted.
Specimens seen. Ecklon s.n. (S); Thunberg s.n. in herb. Montin (S); Wijnands 925 (WAG).

Furcraea foetida (L.) Haw., Syn. Pl. Succ.:73 (1812)
Atlas. 3 t.17. *Aloe Americana viridi rigidissimo & foetido folio, Piet dicta Indigensis.* Kiggelarii Hort: Beaumont: Pag.5 (Kiggelaer 1960;5).
Aloe Americana radice Tuberosa foetida major Hermanni Parad: Batav: Prodrom:306 (Hermann 1689: 306).
Commelin. 2:35 t.18. Idem, without the citation of Hermann.
Artist. Jan Moninckx (1686-1700).
Citations. *Agave foetida* L., 1753:323, [Hort. Cliff.: 132.13, ms LINN, Boerhaave 1719, 1:129:10, Fabricius 1763:13], Mill. 1768 no.3, Aublet 1775:305, Houttuyn 1777:376, Jacq. 1789:312, Willd. 1799:194, Baker 1888:199, Marais & Coode 1978:6.
Furcraea gigantea Vent. 1793:65 – Kunth 1850:841, Huth.
Linnaeus (Chenon def.) 1751:23 cites Hort. Amst. 2 t.4 for *Agave foetida.* This plate is the lectotype of *Aletris fragrans* L. = *Dracaena fragrans* (L.) Ker-Gawl. It is hard to believe that Linnaeus himself made this error, I think Chenon did, although Linnaeus' concept of *Dracaena* was confused, to put it mildly.
Taxonomic notes. Of *Agave foetida* L. no specimens are preserved in H.S.C. nor LINN. Commelin's plate therefore is proposed as the type, as concluded also by Marais & Coode (l.c.). *Furcraea gigantea* Vent. is a homotypic illegitimate name.
Introduction ante 1688. Commelin does not provide any information on the origin of his plant. He does not cite the name *Aloe Americana leavis latissimo folio splendente,* Comm. 1689:15. This name is cited by Boerhaave (l.c.) and might well represent the same plant.
Plukenet's figure 1692 t.258 f.2 looks much the same as Commelin's. The name given by Plukenet (1696:19) is Hermann's name of 1689:306, given as a synonym by Commelin.
Probably Commelin's and Hermann's plant are the same species, the 'Piet' of Curaçao. Curaçao is the type locality given by Linnaeus, based on Boerhaave (l.c.).
Specimens seen. Irwin et al. 55327, Suriname (U).

Furcraea tuberosa (Mill.) Aiton f., Hort. Kew. ed.2:302 (1811)
Atlas. 3 t.18. *Aloe Americana Tuberosa minor spinosa* Parad: Batav: Prod:306 (Hermann 1689:306).
Commelin. Hort. Amst. 2:37 t.19. Idem.
Artist. Not signed (1686-1700).
Citations. *Agave commelyni* Salm-Dyck 1834:301, Danielli 1885:15.
Furcraea commelyni (Salm-Dyck) Kunth 1850:842, Baker 1888:200, Huth.
Furcraea tuberosa (Mill.) Ait. f. 1811:302 – Herbert 1837:126.
Taxonomic notes. *Aloe Americana radice tuberosa*

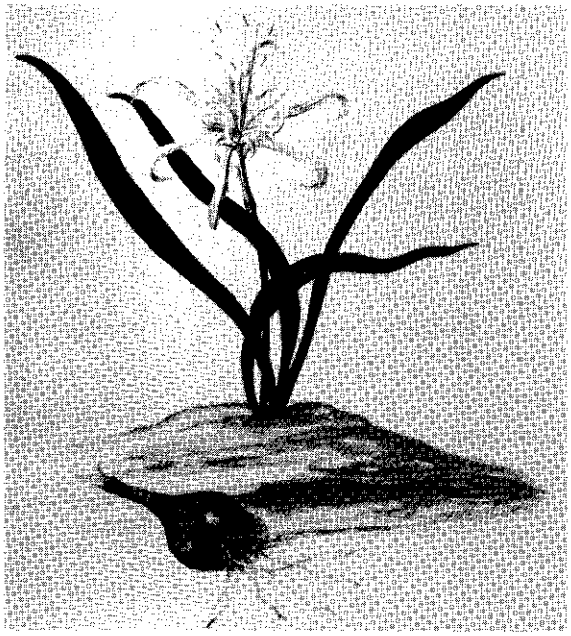
minor, Plukenet 1696:19, t.258 f.1, is cited in the protologue of *Agave tuberosa* Miller 1768. This illustration is proposed here as the lectotype of Miller's name. Commelin's plate is designated here as the lectotype of *Agave commelyni* Salm-Dyck. Commelin's plate is very much like Plukenet's.
Although the taxonomy of *Furcraea* is in need of revision, I feel sure enough to consider *F.commelynii* a synonym of *F.tuberosa.*
Distribution. Tropical America, Cuba, Haiti.
Introduction ante 1689. Commelin did not specify the source of his plant. This species is probably represented in the Codex of the Duchess of Beaufort 1 t.2 f.3.

Haemanthus coccineus L., Sp. Pl.:325 (1753) [Pl.25]
Atlas. 4 t.12. *Haemanthus Africanus.* Hermanni Hort: Lugd: Bat: pag:306 (Hermann 1687:306).
Tulipa capensis, sive Promontorii Bonae Spei. Bodaei a Stapel pag:334 (Stapel 1644:334).
Narcissus Indicus puniceus gemino latiori folio. Ferrarii Flor: Cultur:137 (Ferrari 1633:137).
Lilium Indicum puniceum gemino latiore folio. Moris: Histor: Part:2, pag:410 (Morison 1680:410).
Commelin. Hort. Amst. 2:127 t.64. *Haemanthus africanus,* the other names as synonyms, also Bauhin 1623: 49 and Colonna 1651:885, 899.
Artist. Jan Moninckx (1699).
Citations. *Haemanthus coccineus* L. 1753:325, [Hort. Cliff.:127.1, V.Royen:42, ms LINN, Boerhaave 1719, 2:149], Burm.f. 1768 P.F.C.:9, Willd. 1799:24, Björnstad & Friis 1972:191, Snijman 1981:5.
Haemanthus coccineus L. var. *grandivalvis* Herb. 1837: 236 – Kunth 1850:597, Huth.
Haemanthus latifolius Salisb. 1796:216 (nom. superfl.).
Taxonomic notes. No specimens are available for the typification of *Haemanthus coccineus* in H.S.C. or LINN. Therefore Björnstad & Friis (1972:191) proposed Commelin's plate as lectotype. There is, however, a specimen in L.-Royen that Linnaeus most likely has studied and Van Royen's phrase name was accepted by Linnaeus as the nomen specificum legitimum. The specimen consists of a flower only, but the diagnosis is based on the leaves.
The choice of Commelin's plate as lectotype ought to be maintained. Commelin kept this plant as *Haemanthus* Hermann. He cited Ray 1688:1127 as the authority who rightly referred his plant to a separate genus *Haemanthus.*
Var. *grandivalvis* Herbert is a synonym of var. *coccineus.*
Distribution. South Africa: S.W.Cape.
Introduction 1603? The first Haemanthuses *'Narcissus'* introduced in Holland from the Cape were illustrated by De l'Obel (1605:503). The identity of these species is not known (Björnstad & Friis 1972:187). Gunn & Codd (1981:14) identified them as *H.coccineus* and *H. rotundifolius,* Ferrari (l.c.) gave the first unambiguous record for *H.coccineus* in Europe.

Hymenocallis caribaea. Atlas 4 t.37

The species was listed in Schuijl's catalogue of the Leiden Hortus, fide Kraus 1893:116.
Bulbs were sent from the Cape to Amsterdam annually, but flowers were not produced. Commelin's plant reached Amsterdam from the Cape in 1698 through Nicolaas Witsen. The plant flowered in 1699.
Specimens seen. Van Royen (L. 897324-229); Bayliss 6162 (WAG); Fabricius s.n. (S); Schlechter 10264 (S); Compton 15625 (NBG); Bond 1487 (NBG); Snijman 196 (NBG).

Hymenocallis caribaea (L.) Herbert, Bot. Reg. 7 App.:44 (1821)
Atlas. 4 t.37. *Narcissus americanus flore multiplici albo hexagono odorato.*
Commelin. Hort. Amst. 2:173 t.87. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Pancratium caribaeum* L. 1753:291, [Hort. Cliff.:133.2, ms LINN], Aublet 1775:303, Bot. Mag. 1805 t.826, Kunth 1850:672.
Hymenocallis caribaea (L.) Herb. 1821:44 – Baker 1888:125, Huth, Sealy 1955:218-222.
Pancratium amoenum Salisb. 1794:71 t.11, 1796:226, Willd. 1799:44.
Taxonomic notes. The nomen specificum legitimum of *Pancratium caribaeum* L. is taken from Hort. Cliff.

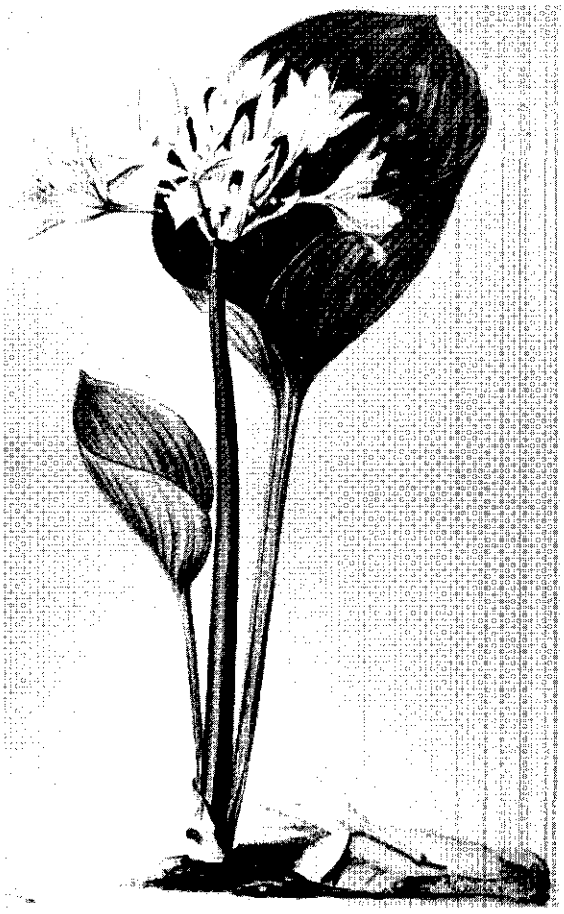


Pancratium zeylanicum. Atlas 1 t.33

There is no specimen in H.S.C.; LINN 413.2 '3 *caribaeum'* from Gronovius is liliaceous, probably a *Sansevieria.*
Commelin 1701 t.87 is proposed as lectotype as already implied by Sealy 1955:218-222. Commelin's t.87 keys out as *H.caribaea* in C.D.Adam's Flora of Jamaica:79 (1972).
Of the plants cited in synonymy by Commelin, Tournefort 1700:358 cannot be identified and Sloane 1694: 115 belongs to *Hymenocallis latifolia* (Mill.) M.J.Roem.
Pancratium amoenum Salisb. is an illegitimate name, typified by Commelin's plate automatically.
Distribution. Mexico, Cuba, Hispaniola, Jamaica, Antigua, Martinique, Barbados (Adams 1972:80).
Introduction ante 1700. Commelin gives no information on the origin; it flowered annually. No earlier introduction of the species is known to me.
It is still cultivated in Botanical Gardens at present.
Specimen seen. Boldingh 2851 (U).

Pancratium zeylanicum L., Sp. Pl.:290 (1753)

Atlas. 1 t.33. *Narcissus Ceylanicus, Flore albo, Hexagono odorato.* Hort. Acad. Lugd. Batavo. (Hermann 1687:691 t.693).
Dutch: Narcis van Ceylon, met witte ses-kante Blom.
Commelin. Hort. Amst. 1:75 t.38. Idem, added: *Lunula ceylanensibus.*
Dutch: Ceylonsche narcisse, met een ses-hoekige, witte, en riekende bloemen.
Artist. Jan Moninckx (1686-1690).
Citations. *Pancratium zeylanicum* L. 1753:290, [Fl. Zeyl.:53.126, ms LINN, Rudbeck 1701,2:179, Boerhaave 1719,2:147.8, Burm.1737:142, Burm. in Rumpf 1750:161], Burm.f. 1768 Fl.Ind.:80, Willd. 1799:41, Baker 1888:118, Huth.
Pancratium maritimum L. – Willd. 1799:43.
Taxonomic notes. Linnaeus based this species mainly on Fl. Zeyl. no.126. Herb. Hermann vol.5 no.2 (= no.431) (BM) is proposed here as the lectotype. LINN 413.1 is not a paratype, I am not sure it represents the same species.
Distribution. Tropical Asia.
Introduction 1687. This species was known to Rumpf (6:161 t.70 f.2), to Reede (11 t.40), and cultivated by Hermann (l.c.).
Commelin received his plant from Pijl, governor of Colombo (Ceylon). He did not mention it as being cultivated in Amsterdam in his notes to Reede.



Proiphys amboinensis. Atlas 2 t.9

Proiphys amboinensis (L.) Herbert, Appendix: 42 (1821)

Atlas. 2 t.9. *Narcissus Amboinensis folio latissimo rotundo, Floribus niveis inodoris* an *Allium* vel *Coepa Sylvestris Amboinensis folio rotundo.* Rumphii? (Rumpf 1750,6:160 t.70 f.1).

Dutch: Narcis van Amboine, met seer breede en ronde Bladeren, en Sneeu-witte reuckloose Bloemen.
Commelin. Hort. Amst. 1:77 t.39. Idem, with some orthographic variants.
Artist. Jan Moninckx (1686-1690).
Citations. *Pancratium amboinense* L. 1753:291, [ms LINN, Rudbeck 1701,2:238 f.17 is a copy of Commelin's plate], Burm.f. 1768 Fl.Ind.:80, Miller 1768, Persoon 1797:337, Willd. 1799:45, Sims in Bot. Mag. 1812 t.1419.
Amaryllis rotundifolia Lam. 1783:124.
Proiphys amboinensis (L.) Herb. 1821:42.
Eurycles amboinensis (L.) Loud.1829 – Herb. 1837: 227.
Eurycles sylvestris Salisb. 1812 – Baker 1888:131.
Taxonomic notes. No specimen of this species is found in the Linnean herbaria. As Commelin's plate is the only element cited by Linnaeus it is the holotype.
Eurycles sylvestris is an illegitimate name with the same type.
Amaryllis rotundifolia Lam. is based on a specimen in herb. Jussieu. The development of the corolla is variable in this species. This led Lamarck to doubt the conspecifity of leaves and flowers in the engraving.
This species is commonly known as *Eurycles*. *Proiphys* is however validly published and has priority. Herbert dropped his name later in favour of Salisbury's name, which was published by Schultes & Schultes, Syst. 1830, 7:909.
Distribution. Malesia.
Introduction ante 1690. Commelin's reference to Rumpf actually is to Hermann 1689:319 '*Caepa sylvestris Amboinensis* Dn. Rumphii', and 305 '*Allium Amboinense folio rotundo. Caepa sylvestris Amboinensis* Rumphii'. Rumphius' Herbarium Amboinense 6 was published in 1750 by Burman. De Wit (1959:10) stated that the Herbarium Amboinense was safe in Holland in 1697, the first part a year before. As Commelin died in 1692 he cannot have seen it in manuscript. In that year the vessel 'Waterland' that carried the first part of the book, was sunk.
Commelin received a 'bulb' from Batavia.
Specimens seen. De Bruijn s.n., culta (WAG); Herb. Boschb Proefstation 4805 (WAG); Kaudern 506 (S); Kjelleberg 502 (S).

Scadoxus puniceus (L.) Friis & Nordal, Norw. J. Bot. 23:64 (1976) [Pl.64]
Atlas. 8 t.77. No name.
Commelin. Not published by Commelin.
Artist. Not signed.
Taxonomic notes. The erect bracts of the inflorescence are characteristic of *S.puniceus*, which is the only *Scadoxus* collected west of the Great Fish river.
Bjørnstad & Friis (1974:244) designated LINN 408.2 as the lectotype of *Haemanthus puniceus* L. (1753).
Distribution. Ethiopia, Tanzania, E.Southern Africa, see Bjørnstad & Friis 1974:249 for a map.
Introduction. This water-colour is the last in vol.8 of the atlas. It was done on paper, not on vellum. It could represent the painting paid for in 1724 according to the Memoriael to Maria Moninckx; it is not signed, however.
Specimens seen. Drège 8554, Katberg (S); Acocks 21695, Port Elisabeth (K); Lotsy & Goddijn 243, Stockenstroom (L).

ANACARDIACEAE

Rhus lucida L., Sp. Pl.:267 (1753)
Atlas. No water-colour is preserved.
Commelin. Hort. Amst. 1:181 t.93. *Vitex trifolia minor indica rotundifolia.* Breyn. Prod. 2. (Breyne 1689:105). Cara-Nosi Hort. Mal. part.2 (Reede 2:13 t.11).
Negundo foemina Acostae.
Dutch: Kleene indiaansche drie-bladerige Kuysboom, met ronde bladeren.
Citations. *Rhus lucidum* L. 1753:267 'Comm. hort. 2', [Hort. Cliff.: 111.6 'optima', Hort. Ups.: 68.3, ms LINN, Boerhaave 1719,2:222.5], Aiton 1789:369 'β', Willd. 1797:1485, Ait. f. 1811:166 'β', DC. 1825:69, Loudon 1830:110, Salm-Dyck 1834:229, Sonder 1860: 517, Huth, Schoenland 1930:54.
Rhus lucidum L. var. *minor* Sweet 1818:60.
Taxonomic notes. The phrase-name for *Rhus lucida* in Hort. Cliff. is used as the nomen specificum legitimum in Sp. Pl. The vouching specimens in H.S.C. were designated as lectotype by Fernandes (1967:13). Three sheets are present in H.S.C., one of which is labelled as the lectotype. An isotype is preserved in the Linnean herbarium: LINN 378.29.
Distribution. Southern Africa.
Introduction ante 1690. Commelin received seeds from 'Africa', sent by Simon van der Stel. The flowering branch on the plate was given by Huydecoper. The Duchess of Beaufort grew the species in 1697 (Aiton l.c.).
Specimens seen. H.S.C. 111.6: LINN 378.29, Wijnands 911 (WAG).

Rhus tomentosa L., Sp. Pl.:266 (1753)
Atlas. 5 t.21. *Vitex trifolia minor indica serrata* Breijne Prod. 2 (Breyne 1689).
Commelin. Hort. Amst. 1:179 t.92. Idem, and Bem-Nosi Hort. Mal. par.2 (Reede 2:15 t.12).
Negundo Mas Acostae.
Dutch: Kleene Indiaansche driebladerige en geschaarde Kuysboom.
Artist. Not signed (1686-1690).
Citations. *Rhus tomentosa* L. 1753:266, [Hort. Cliff.: 111.5, ms LINN, Boerhaave 1719,2:222.6], Burm.f. 1768 P.F.C.:8, Willd. 1797:1483, Ait.f. 1811:165, Sweet 1818:60, DC. 1825:72, Loudon 1830:110, Salm-Dyck 1834:229, Sonder 1860:509, Huth.
Taxonomic notes. A new nomen specificum legitimum

is provided for *Rhus tomentosa* in Sp. Pl. Therefore LINN 378.20 '8 *tomentosa*' is proposed here as the lectotype. It presents a form with almost entire leaves, Commelin's plant has coarsely serrated leaves as the specimen H.S.C. 111.5.
Bem-Nosi was recognised as a quite different species by the editors Kiggelaer and Ruysch. It is *Vitex negundo* L.
Distribution. South Africa: Cape.
Introduction ante 1699. Simon van der Stel is acknowledged by Commelin for sending this plant from the Cape.
Specimens seen. H.S.C. 111.5 (BM); Bayliss 410 (WAG); Bos 169 (WAG); Wijnands 916 (WAG).

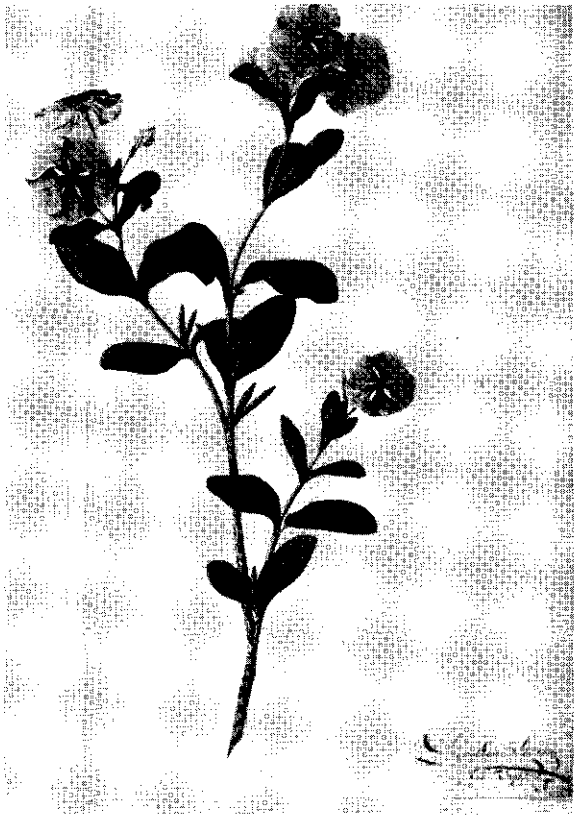
Rhus tomentosa L., Sp. Pl.:266 (1753)
Atlas. 8 t.35. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Spondias pinnata (Koenig ex L.f.) Kurz, Prelim. Rep. For. & Veg. Pegu, app. A:XLIV (1875)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:117 t.61. *Nux ceylanica, juglandis folio.* Parad. Bat. Prod. (Hermann 1689:357). Domba-Gedy. Ceylanensibus.
Dutch: Ceylonsche noteboom met okkernote bladeren.
Citations. *Calophyllum inophyllum* L. 1753:513 – Huth.
Taxonomic notes. Huth's interpretation is the only one I came across. It is probably based on the name 'Domba' which is cited for *Calophyllum* (cf. Van Wijk 1911: 220). The plant shown in the plate has nothing in common with *Calophyllum.* It is reminiscent of *Spondias pinnata.* The imparipinnate leaves with a very dense nervation, and the walnut-sized fruits with a wrinkled surface agree well with this species. If Commelin would not have illustrated his analysis of the fruit I would have had little doubt about the identity of this plant, but his plate lacks the bizarre spongy tissue in the drupe as illustrated by Airy-Shaw & Forman 1967:7. I tried to prepare a seed as shown in the engraving from fruits in Herb. Boschb. 8385 (WAG) but did not succeed. Therefore, I cannot positively identify this plant, but the general impression made by the plate is so well matched by *S.pinnata* that I use the name as a caption for this discussion. I went through many species of *Anacardiaceae* and *Burseraceae* in the herbarium, but did not find a better match.
Distribution. *Spondias pinnata* is an Indomalayan species, not known in the wild state with certainty.
Introduction. Paul Hermann knew Commelin's plant from Ceylon, he may have introduced it from that island.

The riddle of the fruits can be solved by taking Commelin's 'Domba-Gedy Ceylanensibus' seriously. Domba is the name for *Calophyllum inophyllum.* The dried fruits of this tree are not unlike those of *Spondias pinnata,* Commelin must have confused them or received them in a mixed batch. The fruit in the plate is *Calophyllum inophyllum.* When Commelin had grown a young plant and decided to include it in his book, a fruit he had kept in his collection was illustrated also; this was his usual procedure. Distribution: Indomalaya, widely cultivated. Specimens seen: Koorders 29737-b (WAG); Bos 7417, culta, seedlings (WAG); Bourne 2246 (K); W.de Wilde c.s. 2116B (WAG).

ANNONACEAE

Annona cf. **muricata** L., Sp. Pl.:536 (1753)
Atlas. 5, t.16. *Anona.*
Commelin. Hort. Amst. 1:133 t.69. Idem, Dutch: Anona.
Artist. Jan Moninckx (1686-1690).
Citations. *Annona muricata* L. 1753:536, [Hort. Cliff. 222.1, V.Royen:494.1, ms LINN], Gronovius 1762:83, Burm.f. 1768:125, Willd. 1799:1264, Martius 1841:4, Huth.
Taxonomic notes. The nomen specificum legitimum for *Annona muricata* L. is taken unchanged from Hort. Cliff. 222, Gron. Virg. 61 and Roy. Lugdb. 494. No specimens have been found in H.S.C. (BM), Gronovius material in the General Herbarium (BM) or Herb. V. Royen (L.).
A lectotype can be chosen from Plukenet 1692 t.134 f.2, Sloane 1725:196 t.225, Plumier 1703:43, or Commelin. The Commelin plate represents an *Annona,* but it is impossible for me to decide which species it represents. Commelin states his plant is an edible one and the editors compare it with the wild *Annona* from Curaçao, and other ones. The typification of *Annona muricata* L. is left undecided. A critical knowledge of the genus may solve this problem.
Introduction ante 1697. Commelin gives no synonyms, only Plukenet's plant, that could be the same, is an earlier illustration.
Commelin does not give an origin of his plant. The editors, Kiggelaer & Ruysch, suggest it came from 'America'. Caspar Commelin (in Merian 1705 t.3 & 14) noted that seeds of different species of *Annona* were received from America annually. Three species were cultivated in the Hortus, but none of these is compared by Commelin with the two *Annona*'s depicted by Merian.
Specimens seen. Ekman 10490 (K), Sintenis 753 (K), LINN 708.1, 2, 3, 4 (probably no syntypes), De Wilde 3385, cult. (WAG).
The Commelin plate could be matched with these specimens, but also other *Annonas,* e.g. *A.squamosa* L., match quite well.
Note on the plate. The seeds have been added on the plate.



Catharanthus roseus. Atlas 9 t.1

APOCYNACEAE

Catharanthus roseus (L.) G.Don, Gen. Syst. Gard. Bot. 4:95 (1835)

Atlas. 9 t.1. No name.

Commelin. Not published by Commelin.

Artist. Dorothea Storm-Kreps (ca.1750?).

Taxonomic notes. *Vinca rosea* L., Syst. Nat. ed.10, 1759:944, is typified by *'Vinca foliis oblongo-ovatis'* P.Miller, Fig. Beaut. Pl.2 t.186 (1757), as designated by Codd (1963:268). A Miller specimen in the herbarium from the Chelsea Physic Garden for the year 1758 no.1849 (BM) is available as typotype.

The plant shown in the atlas belongs to var. *roseus* with pink flowers and a purple corolla tube.

Distribution. S.E.Madagascar, widely naturalised elsewhere. (See for a map Stearn 1975:20).

Introduction ante 1757. Other water-colours made after different plants and conserved in vol.9 of the atlas, were painted by J. Cok. These are dated 1749. The plate by Dorothea Storm-Kreps is undated, but as it is bound together with the water-colours of 1749, it was probably done in the same period.

Miller (1757, 1768) recorded the introduction of *Vinca rosea* from Madagascar in the Jardin Botanique du Trianon, from where it was sent to Miller in England by the gardener Richard.

David van Royen had the species in cultivation in the Leiden Hortus Botanicus in 1758, grown from seed given to him by a French diplomat (Stearn 1975:36). It is possible that the plant in Amsterdam flowered there before 1757, but this cannot be proven.

Boiteau (1972) showed that *Catharanthus roseus* was known to Flacourt during his stay in Madagascar (1648-1655).

G.Don (l.c.) gave 1726 as the year of introduction, but I do not know on what basis.

Specimens seen. Herb. Bergius s.n. (SBT); Leeuwenberg 11133 (WAG); Miller no.1849, typotype (BM).

Nerium indicum Miller, Gard. Dict. ed.8 no.2 (1768) [Pl.5]

Atlas. 2 t.5. *Nerium lati-folium Indicum Flore variegato, odorato, pleno.*

Tsiovanna-Areli. Hort: Mal: Tom: IX.3 (Reede 9:1 t.1).

Dutch: Indiaansche breed-bladerige Oleander, met dubbelde, rieckende en bonte Bloemen.

Commelin. Hort. Amst. 1:45 t.23. Idem.

Artist. Jan Moninckx (1686-1690).

Citations. *Nerium oleander* L. 1753:209 – not cited in the protologue – [Hort. Cliff.:76.1, Fl. Zeyl.:46 no.108, ms LINN, Boerhaave 1719:316.5, Pontedera 1720, Tilli 1723:120, Burman 1737:167].

Nerium oleander L. δ *splendens* Salm-Dyck 1834:179.

Nerium odorum Ait. 1789,1:297 not cited in the protologue – Huth.

Nerium odoratum Lam. 1792:456.

Taxonomic notes. *Nerium indicum* Mill. is used here as the correct name for Commelin's plate 23, since Rechinger (1974:3) and Van Steenis (1981:179) treated *N. indicum* as distinct from *N.oleander* L. However, revisionary work on *Nerium* now in progress by Dr A.J.M. Leeuwenberg might result in a different taxonomy.

Nerium oleander L. is typified by the specimen 76.1 in the Clifford herbarium, so designated by Stearn (in Davis 1978:159). The two other species for which Commelin's plate was cited, viz. *N.odorum* Ait. and *N.odoratum* Lam., are synonyms of *N.indicum* Mill. *N.oleander* var. *splendens* Salm-Dyck is based on t.74 in Edward's Bot. Mag. (1815), which plate represents the double-flowered form of *N.indicum* Mill. (= *N.latifolium* Mill.).

Nerium oleander has a long history in cultivaton. Dioscorides (book 4 t.82) knew the plant as 'Nerion' and 'Rhododaphne'. Only single-flowered forms of the mediterranean kind were known till ca.1680. A single-flowered red one was mentioned by Besler (1613 t.5), Dodoens, L'Obel, Bauhin and later authors. Gessner did not know the species in Germany in 1542, but he had a plant in 1560, see Fretz 1948:251. Pieter van der Borcht made a drawing of *N.oleander* ca.1570, see Blunt 1950 t.5. A single-flowered white form is shown

in Besler 1613 t.4 and was mentioned by e.g. Bauhin. The first record of the Indian kind (*N. indicum* and *N. latifolium*) was given by Hermann (1687). He knew a single pink form, shown on t.448 (a syntype of *N. indicum* Mill.), and a double form shown on t.449 (a syntype of *N. latifolium* Mill.). Hermann's specimens from Ceylon are preserved in his herbarium, vol.3:25 and 33 (BM).

The single form was introduced into cultivaton by Reede, who also illustrated it in the Hortus Malabaricus 9 t.2. Beverningk introduced the double form, also illustrated by Reede in vol.9 t.1; see also Breyne 1689: 86.

The variegated 'double' was grown by Hermann (1689: 356) in Leiden, Commelin's plate 23 is the only illustration of it. Boerhaave, Pontedera and Tilli were the last authors who knew this form, since then it seems to have disappeared.

Linnaeus gave some recognition to these different forms in his Mantissa altera:345-346, as unnamed varieties of *N. oleander.* Giseke (1792:408-409), amply discussed the forms of *'Nerium oleander duplex'.*

Distribution. South Asia, cf. Van Steenis (l.c.). Possibly not wild but cultivated in Ceylon, the type locality.

Introduction. Commelin received his plant from Ceylon, sent by the governor of Colombo, Laurentius Pijl.

Specimens seen. No specimens of the double variegated form have been seen.

Plumeria rubra L., Sp. Pl.:209 (1753)

Atlas. 3 t.23. *Apocynum Americanum frutescens longissimo folio Flore albo odorato.*

Nerium Americanum Lactescens longissimo folio, Flore albo odoratissimo Kiggelarii Hort: Beaumont: Pag:31 (Kiggelaer 1690:31).

Quauhtlepatli, seu Arbor ignea. Hernand: Pag:67 (Hernandez 1651:67).

Commelin. Hort. Amst. 2:47 t.24. Idem.

Artist. Jan Moninckx (1686-1700).

Citations. *Plumeria alba* L. 1753:210, [Hort. Cliff.:76, ms LINN, Commelin in Merian 1705 t.8], Jacq. 1763: 36, Aublet 1775:259, Willd. 1797:1242, Huth.

Taxonomic notes. Linnaeus cited Commelin's plate 24 in the protologue of *Plumeria alba.* It does however represent *Plumeria rubra* L. as currently understood. The nomen specificum legitimum for *Plumeria rubra* in Sp. Pl. is cited without any change from Hort. Cliff. and from Van Royen. The specimen H.S.C. 76.1 consists of a detached flower of a *Plumeria,* possibly *P. rubra,* and a flowering shoot with a detached flower of *Thevetia ahouai* (L.) A.DC. As the diagnosis describes the leaves only, lectotypification by this specimen would imply the reduction of *P. rubra* to *T. ahouai.* The Van Royen herbarium contains a sheet of *P. rubra,* L 898111-226, annotated by David van Royen; it has no link with Adriaen's Prodromus and, therefore, does not qualify for typification. No specimen is available in LINN that vouches for *Plumeria* 1 *rubria.* There is a leaf of *P. rubra* in LINN 296.2, but this sheet is annotated *'Manghas'.* LINN 301.1 is a specimen of *P. rubra* originating from P.Browne, so that it was not available to Linnaeus in 1753. Of the remaining syntypes Tournefort's illustration can be disregarded as it consists of a flower only. Catesby, Sloane, Merian and Plukenet published illustrations that all can be accepted to represent *P. rubra* as it is currently understood and are in accordance with Linnaeus' diagnosis. I designate as the lectotype Sloane 1725 t.185 f.1, since a typotype is preserved in herbarium Sloane 6:56 (BM).

The specimen in Herb. Sloane 97:24 proves that Plukenet's Table 207 f.2, showing a flower attached to the leafstalk, represents an error by the artist.

The typification of *Plumeria alba* L. should be based primarily on the new diagnosis that Linnaeus provided for this species in Sp. Pl. *'Plumeria foliis lanceolatis revolutis, pedunculis superne tuberosis'.* The Linnean specimen LINN 301.2 is the basis for the entry on *P. alba* in Alm's dissertation Plantae Surinamenses, Am. Ac. 8:254.30; it is a later acquisition to the herbarium (ca.1775) and thus cannot be considered as a syntype. The specimen belongs to *P. rubra.* The reference to Tournefort in the protologue of *P. alba* is ambiguous. The next element is Commelin's Plate 24, which is certainly *P. rubra.* Ray, Sloane and Hermann gave descriptions only and no specimens can vouch for their meanings. Also Kiggelaer (1690:31) and Hermann (1689: 357), referred to by Sloane, give descriptions only. Scattered specimens in pre-linnean herbaria never brought up a specimen of *P. alba,* often of *P. obtusa* L., e.g. herb. Sloane 328:128, 101:54 (the basis for Plukenet t.207 f.1), and 206:315. The type of *Plumeria obtusa* L. is Catesby 1734 t.93 (designated here). *Plumeria alba* L. in Stickman's Herbarium Amboinense, based on Rumpf's *Flos Convolvulus,* is *P. rubra.*

The only element related to the Linnean concept of *Plumeria* that represents *P. alba* as it is currently understood, is Plumier's Plate 21 published by J.Burman (1755-1760), after Species Plantarum was published. However, Linnaeus studied the Plumier drawings in Leiden where Boerhaave had a set. This set was later published by Burman (cf. Heller in Stearn 1959:47). I propose this Plate 21 as the lectotype of *Plumeria alba* L., it agrees well with Linnaeus' diagnosis. The diagnostic character *'foliis lanceolatis revolutis'* can be derived from no element cited in the protologue, Plumier's drawing shows revolute leaves. Tournefort may have based his species on the same Plumier material.

Distribution. Tropical America.

Introduction. Commelin received his plant from Mr Floris Coopman, no origin or year of introduction is given, but it must have been before 1700.

Specimens seen. *Plumeria rubra:* Bos 1465, culta (WAG); Leeuwenberg 3827 and 11089 (WAG); Tun Ortiz 1076 (BM); Weston 5056 (U).

Plumeria alba: D'Arcy 4691 (BM); Proctor 17304 and 21163 (BM); Haword 10911 (U); Stoffers 2214 (U); Wagner 1201 (U).

Plumeria rubra L., Sp. Pl.:209 (1753)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:193 t.99. *Apocyno affinis portoricensis folio hastae cuspidi simili.*
Dutch: Apocynum gelykende plante van Porto Rico, met bladeren dewelke de punte van een spietse gelyken.
Citations. No interpretation of this plate is known to me.
Taxonomic notes. The broad acuminate leaves with flat margins shown in the plate point to *Plumeria rubra* L. The shape of the leaves is rather abnormal for that species, but I cannot provide a better identification. Little & Wadsworth (1964:460-464) list three Plumerias for Puerto Rico: *P.alba, P.obtusa* (= *P.portoricensis* Urban) and *P.rubra.* Of these *P.rubra* is the best match with Commelin's illustration.
Distribution. Tropical America, originally the mainland only (Woodson 1937:203), but naturalised elsewhere.
Introduction. Commelin's plant is said to be received from Porto Rico via the Hortus Beaumontianus. The editors Kiggelaer and Ruysch note that Simon van Beaumont sent a gardener ('Tuynier') to America to search and bring home rare plants. The seeds from which Commelin's plant was grown were a result of this expedition. Hermann (1689:381, 1698:22) published this plant as *Tithymalus Portoricensis folio crasso hastae cuspidi simili;* Kiggelaer (1690) as *Apocynum Portoricense frutescens foliis crassis hastae cuspidi similibus.* Plukenet published an illustration, t.137 f.5, with Kiggelaer's phrase-name; I cannot identify this plate but it differs strongly from Commelin's.

ARACEAE

Amorphophallus paeoniifolius (Dennst.) Nicolson, Taxon 26:338 (1977)
Atlas. 1 t.8. *Arum, S.Serpentaria Ceylanica Polyphyllum caule aspero cum maculis viridis fuscis, & viridi dilutis, pulchre notatum. Majus & Elatius* (cf. Hermann 1689:315).
Mulen Schena, Hort: Malab: Tom XI (Reede 1692 vol. 11:37 t.19).
Dutch: Malabaars Serpent-Kruijt, met een Rouw-Bruijn-Groengevlakte Steel.
Commelin. Hort. Amst. 1:99 t.52. *Arum polyphyllum ceylanicum, caule scabro, viridi diluto, maculis albicantibus, notato.*
Dutch: Veel-bladerige ceylonsche Kalfs-voet, met een licht-groene, rouwe, en wit gevlakte stenge.
Artist. Jan Moninckx (1686-1690).
Citations. *Amorphophallus campanulatus* Blume ex Decne. 1834 – Huth, Engler 1911:76-77.
Commelin in Reede (l.c.) cited his name of 1689, Burman 1737:90 cited Commelin's plant.
Taxonomic notes. Nicolson (l.c.) amply discussed the nomenclature and typification of this species. Reede's Mulen Schena, cited as a synonym in the atlas, is the type of the basionym *Arum paeoniifolium* Dennstedt 1818. *A.campanulatus* is the synonym currently used for this species.
Distribution. Malagasy Republic through India and out into the Pacific (Smith 1979:450).
Introduction. Commelin's Plates 52 and 53 are the first records of this species in cultivation I know about. Commelin received the plant from Ceylon as 'Kidaram'. 'Kidaran' is the local name given by Trimen 1898,4: 355 for *A.campanulatus.* Also Hermann 1717:21 listed 'Kidaram'.

Amorphophallus paeoniifolius (Dennst.) Nicolson, Taxon 26:338 (1977)
Atlas. 1 t.7. *Arum Polyphyllum, Dracunculis & Serpentaria dictum, Ceylanicum, Caule glabro viridi-diluto, Maculis albicantibus notatus majus & elatius.*
Schena Hort: Malab: t.11 (Reede 1692 vol.11:35 t.18).
Dutch: Malabaars Serpent-kruijt, met een Groene en Witgevlakte Steel.
Commelin. Hort. Amst. 1:101 t.53. *Arum ceylanicum polyphyllum caule aspero, maculis viridi-fuscis, viridi dilutis, et albicantibus, pulchre notato.*
Dutch: Veel-bladerige ceylonsche kalfs-voet, met een rouwe, ros-groene, ook licht-groene, en witgevlakte steel.
Artist. Jan Moninckx (1686-1690).
Citations. No interpretations of this plate are known to me.
Commelin in Reede (l.c.) cited his name of 1689, Burman 1737:90 cited Commelin's plant.
Taxonomic notes. In my opinion, this plate represents the same species as the one in Atlas 1 t.8. Both plants are sterile. They represent the genus *Amorphophallus,* of which Trimen (1898,4:355) lists only *A.dubius* and *A.campanulatus* for Ceylon. Nicolson (l.c.) considers *A.dubius* Blume to be conspecific with *A.paeoniifolius* (= *campanulatus*).

Caladium bicolor (Ait.) Vent., Descr. Pl. Nouv. Jard. Cels.:30 (1801) [Pl.52]
Atlas. 6 t.36. *Arum Americanum Colocasia folio maculatum, cauliculis fuscis.*
Idem, *cauliculis viridibus.*
Commelin. Rar. et Exot.:20 t.20. Idem.
Artist. Maria Moninckx (1704).
Citations. *Caladium bicolor* (Ait.) Vent. 1801:30 – Kraus 1893:116.
Taxonomic notes. *Caladium bicolor* is a very variable species; numerous variants have been described, see e.g. Engler 1920:31-37.
The situation is complicated by the hybrid-group *C.* x *hortulanum* Birdsey, of which *C.bicolor* probably is the

main parent. The species itself is described in Hortus Third:197 as having red leaves with a broad green border. Commelin's plants differ in having green leaves spotted red, it is known as 'Palet des Peintres' at present. I see no reason why it would not represent the wild species. There is no indication that cultivation of selected forms was practiced around 1700.

Distribution. Tropical America, Brazil (Para) fide Hortus Third. Widely naturalised in all tropical regions at present.

Introduction ante 1704. The species was described in 1789. Aiton gave no natural distribution of the species but he knew it as cultivated plant in Madeira. As date of introduction, he gave 1773 in the nursery of Kennedy & Lee. Aiton's description is based on a specimen from Madeira, collected on Captain Cook's voyage, and on a specimen 'Hort Lee', both in BM. Dr P.C.de Jong inspected these specimens at my request.

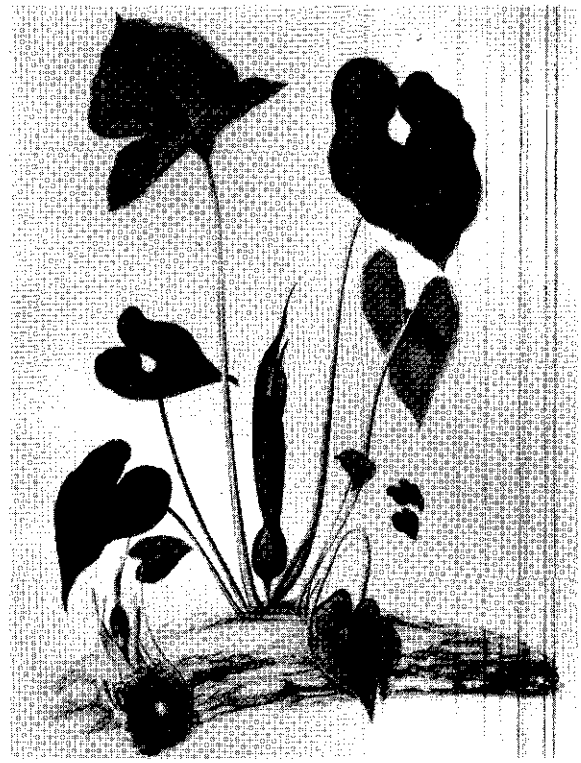
As Aiton specifically states that he knows the plant only as a cultivated species in Madeira, the Madeiran specimen is the obvious lectotype.

A specimen from Hort. Ups. (S) was identified as *Caladium bicolor* by D.H.Nicolson.

Commelin gave no information on the source of his plants. However, he received them from a Mr Nassi as explained by Commelin in Merian 1705 t.4.

The plant flowered in 1704.

Specimens seen. Bos 3979 (WAG); Wagemans 2086 (WAG).



Typhonium trilobatum. Atlas 1 t.6

Typhonium trilobatum (L.) Schott, Wiener Zeitschr. 1829:732. 23 July (1829)

Atlas. 1 t.6. *Arum Humile, Arisarum dictum Zeylanicum latifolium, Pistillo coccineo.*

Dutch: Kleijn Kalfs-Voet van Ceijlon, met breede Blaaderen, en schoonroot-Stampertje.

Commelin. Hort. Amst. 1:97 t.51. *Arum humile ceylanicum lati-folium, pistillo coccineo.*

Dutch: Leege en breetbladerige ceylonsche kalfs-voet, met een schaarlakerode stamper-wijs doddeke.

Artist. Jan Moninckx (1686-1690).

Citations. *Arum trilobatum* L. 1753:965, [Fl.Zeyl.: 155.326, ms LINN, Ray 1704:583.8 refers to the name in the catalogue of 1689:36, Burm. 1737:34], Burm.f. 1768 Fl. Ind.:293 (193), Miller 1768, Willd. 1805:483, Huth.

Typhonium trilobatum (L.) Schott 1829:732 – Kunth 1841:26.

Taxonomic notes. The nomen specificum legitimum for *Arum trilobatum* L. is taken from Flora Zeylanica:326. The drawing in the Hermann Herbarium (BM) is proposed here as the lectotype. Specimen 1079.19 in the Linnean Herbarium is not annotated with '5' the number of the species in Sp. Pl., there is no certainty that it was in the herbarium in 1753.

Distribution. Tropical Asia, including Ceylon.

Introduction ante 1690. Breyne (1689:90) probably provided the first record of the species. Hermann (1698: 78 t.78) had the plant, he knew it from Ceylon (Hermann 1717:33).

Commelin received the plant from Ceylon, no year is given.

I do not know it in cultivation at present.

Specimens seen. Banks in herb. Montin (S); Mukerjee 1577 (S).

Zantedeschia aethiopica (L.) Sprengel, Syst. Veg. 3:765 (1826)

Atlas. 1 t.5. *Arum Aethiopicum, Flore albo odorato, Moschum redolente* Herm: Cat: Hort: Academi Lugd. Bat. (Hermann 1687:60).

Dutch: Kalfs-Voet, van de Caap de Goede Hoop, met welriekende witte Blom.

Commelin. Hort. Amst. 1:95 t.50. *Arum Aethiopicum Flore albo, odorato.*

Dutch: Morelands Kalfsvoet met een witte en riekende bloem.

Artist. Jan Moninckx (1688-1690).

Citations. *Calla aethiopica* L. 1753:968, [Hort. Cliff.: 435.1, ms LINN, Fabricius 1763:40], Burm.f. 1768 P.F.C.:26(30), Gaertn. 1791,2:20, Sims Bot. Mag. 1805, t.832, Huth, Kraus 1893:116.

Arodes aethiopicum (L.) O.Kuntze 1891:739.

Zantedeschia aethiopica (L.) Spreng.-Letty 1973:5-10 (with reproduction of the plate).

Zantedeschia aethiopica. Atlas 1 t.5

Calocasia aethiopica (L.) Link 1795:77.
Taxonomic notes. Letty (1973:9) designated H.S.C. 435.1 as lectotype of *Calla aethiopica* and of the superfluous name *Richardia africana* Kunth 1818.
Calocasia Schott 1832 is conserved against *Calocasia* Link 1795.
Distribution. South Africa: Transvaal, Natal, Lesotho, Cape Province.
Introduction ante 1687. Hermann provided the first description of this species. Commelin's plate is the second published illustration. It remained the only one commonly known until Edward's plate in Bot. Mag. 832 (1805).
Commelin received his plant in 1687 from the Cape, sent by Simon van der Stel. A drawing in Burman's Florilegium (PRE) is annotated with a reference to Commelin's text. The first illustration of this species was published by Guy de la Brosse, Recueil des Plantes du Jardin du Roi, Paris ca.1644 (Gunn & Codd 1981:21).
Specimens seen. H.S.C. 435.1, lectotype (BM); Coppejans 1226 (WAG); Bos 9 & 926 (WAG).

ARALIACEAE

Aralia spinosa L., Sp. Pl.:273 (1753)

Atlas. 5 t.8. *Angelica Arborescens Spinosa seu arbor Indica fraxini folio, cortice Spinoso.*
Ray: Hist: Pl: (Ray 1688:1798, cf. Plukenet 1691 t.20).
Commelin. Hort. Amst. 1:89 t.47. Idem.
Dutch: Boomachtige Angelica met Doornen.
Artist. Maria Moninckx (1686-1690).
Citations. *Aralia spinosa* L., 1753:273, [Hort. Cliff.: 113.1, V.Royen:92, ms LINN, Gronovius 1762:48], Lam. 1783:223, Willd. 1797:1520, Sweet 1818:61, Salm-Dyck 1834:28, Huth.
Taxonomic notes. Linnaeus based his species on the entries in Viridarium Cliffortianum 26 and Gronovius' Flora Virginica 34. No Gronovius specimen has been found in BM. The Clifford herbarium contains three sterile specimens. LINN 394.2 '1' is an infructescence. Since no fruit characters are mentioned in Sp. Pl., this specimen is not eligible for typification.
Another syntype is L.898125-149, a Van Royen specimen; it bears flowers. The sheet in H.S.C.113.1 is designated here as the lectotype.
Distribution. Eastern N.America, from New Jersey to Texas.
Introduction 1688. The plant was sent by Bishop Henry Compton of London. Ray's description, extensively cited by Commelin, was based in part on a plant in Compton's collection at Fulham.
Wein (1931) gave 1688 as year of introduction in England and Holland.
The species is still in cultivation but not commonly. Most plants labelled *'A.spinosa'* belong to the Asian *Aralia elata* (Miq.) Seem.
Specimens seen. H.S.C. 113.1, lectotype; LINN 394.2; Van Royen (L 898125-149 and -150).

ASCLEPIADACEAE

Asclepias crispa Bergius, Descr. Pl. Cap.:75 (1767)

Atlas. 6 t.33. *Apocynum Erectum Africanum subhirsutum foliis undulatis* Parad: Bat. (Hermann 1698:25).
Commelin. Rar. & Exot.:17 t.17. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Asclepias crispa* Bergius 1767:75, Linn. 1771: 215, [ms LINN], Lam. 1783:280, Willd. 1791:1263. *Gomphocarpus crispus* (Berg.) Ait.f. 1811,2:79, Sweet 1818:51, Loudon 1830:94, Huth.
Asclepias sinuosa Burm.f. 1768 P.F.C.:17.
Asclepias undulata L. 1767:194.
Taxonomic notes. *Asclepias crispa* Bergius is typified by a Grubb specimen in S written up by Bergius as *'Asclepias* mihi *crispa'.* Bergius' herbarium (SBT) contains a Thunberg specimen, identified by Bergius only as *'Asclepias'.*
Asclepias crispa is represented by four specimens in the Burman herbarium (G). One is not annotated, one as *A.undulata,* one as *A.crispa,* later corrected to *undulata* and the last one as *A.sinuosa,* later corrected to *Asclepias undulata.* The last specimen I propose as the lectotype of *Asclepias sinuosa* Burm.f.

Burman used the name *A.undulata* in the sense of Linn. 1767 no.19, not 1753 nor 1767 no.1. I know of no other example that Linnaeus used the same epithet for different species of the same genus in one publication. I prefer to include *Gomphocarpus* in *Asclepias*.
Distribution. South Africa: Cape Province including the Cape Peninsula.
Introduction ante 1698. Commelin does not give the source of his plant, but he mentions the Steenberg at the Cape as locality. Ray 1704:351 gives the same name and origin for a herbarium specimen sent by Oldenland. Hermann had the species in Leiden in 1698, also Hermann mentioned a specimen sent by Oldenland. At present it is not in cultivation.
Specimens seen. Herb. Burman s.n., lectotype of *A. sinuosa* Burm.f. (G); LINN 310.3; Thunb. s.n. in herb. Bergius (SBT); Grubb s.n. 'e Cap. b sp', type (S); Acock 1104 (S); Ecklon 1828, with Commelin's plate cited (S).

Asclepias curassavica L., Sp. Pl.:215 (1753)
Atlas. 8 t.26. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. *Asclepias curassavica* has a new nomen specificum legitimum in Sp. Pl. The specimen *'curassavica* 9' LINN 310.18 is proposed as lectotype by Rendle 1936:64, since the single umbel in this specimen agrees with the diagnosis *'umbellis erectis solitariis'*. H.S.C.78 is a better specimen with many lateral umbels, corresponding with *'umbellis alternis'* in Hort. Cliff.
Distribution. Originally probably tropical S.America, now a pantropical weed.
Introduction 1665. Breyne 1689:15 (from Caspar Fagel's garden) and Hermann 1689:313 are the earliest records for the species in Holland.
In France it was introduced in 1665 (Boom 1975:271). *A.curassavica* is also represented in the Codex of the Duchess of Beaufort 1 t.13.
The species is commonly cultivated at present.
Specimens seen. LINN 310.18, lectotype; H.S.C. 78.6, paratype; Bos 1603, culta (WAG); Groenendijk 30 (WAG); Raets 14 (WAG).

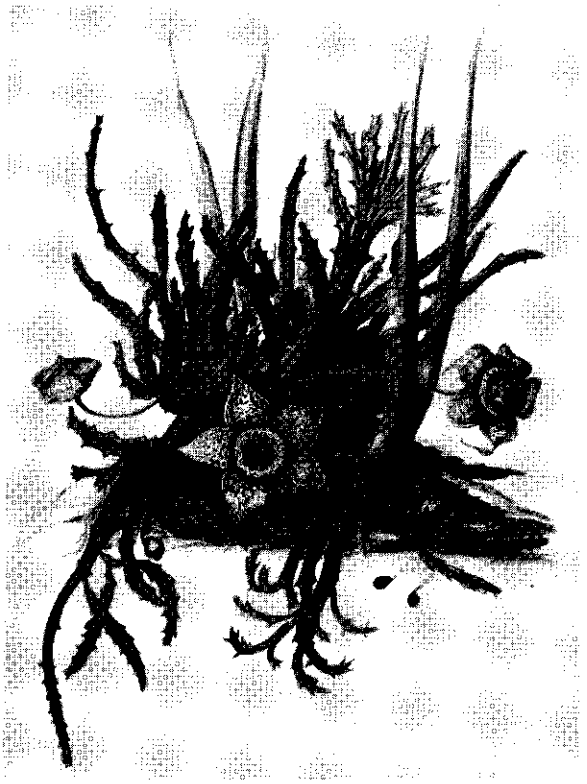
Asclepias fruticosa L., Sp. Pl.:216 (1753)
Atlas. 3 t.24. *Apocynum Africanum erectum villosofructu, salicis folio lato, glabro.* Hermanni Parad: Bat: Pag:23 (Hermann 1698:23 t.24).
Apocynum Hysicanense erectum salicis foliis latioribus Kiggelarii Hort: Beaumont: 8 (Kiggelaer 1690:8).
Commelin. Hort. Amst. 2:49 t.25. Idem, Hermann's name only, Kiggelaer's name is cited on p.50.
Artist. Jan Moninckx (1686-1698).
Citations. *Asclepias fruticosa* L. 1753:216 – [Hort. Cliff.:78.2, ms LINN].
Gomphocarpus fruticosus (L.) Ait.f. 1811:80 – Huth.
Taxonomic notes. *Asclepias fruticosa* was given a changed diagnosis by Linnaeus in Sp. Pl., therefore a specimen in the Linnean herbarium is the obvious lectotype. Two specimens are available: LINN 310.33 and 34, 33 '14 *fruticosa*' is designated as the lectotype being the best specimen.
Linnaeus did not cite Commelin's plate in the protologue, in consequence, citations of it in the literature are scarce.
Distribution. Southern Africa.
Introduction ante 1690. Hermann illustrated (t.24) the plant in 1698, he received seeds from Oldenland in 1690. Kiggelaer mentioned it in 1690, Plukenet illustrated it in 1691, t.138 f.2. Commelin gave no source of his plant. The plate for the copper engraving was cut before Paradisus Batavus was published in 1698. This species is also represented in the Codex of the Duchess of Beaufort 1 t.14 f.1.
Specimens seen. H.S.C. 78.2 no.15 & 16 (BM); LINN 310.33, lectotype, and 34; Bayliss 7848 (S); Fries c.s. 2402 (S).

Asclepias undulata L., Sp. Pl.:214 (1753) [Pl.50]
Atlas. 6 t.32. *Apocynum Africanum, lapathi folio.*
Commelin. Rar. & Exot.:16 t.16. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Asclepias undulata* L. 1753:214, [ms LINN], Burm.f. 1768 P.F.C.:7, Lam. 1783:280, Willd. 1797: 1262.
Xysmalobium undulatum (L.) R.Br. ex Ait.f. 1811:79, Sweet 1818:51.
Xysmalobium lapathifolium Decaisne in DC. 1844:519, Huth.
Taxonomic notes. No specimen of this species is available in LINN. Since Commelin's plate is the only element in the protologue besides the diagnosis it is the type.
I prefer a broad concept of the genus *Asclepias* and thus do not accept *Xysmalobium*. *X.undulatum* is the lectotype of that genus (Bullock 1952:413).
X.lapathifolium Decne. is a superfluous name based on the same type.
Distribution. Africa: from the Cape northwards to Angola and Kenya (Bullock 1952:414).
Introduction ante 1706. Commelin gave no details on the source of his plant.
Specimens seen. Werdermann & Oberdieck 2203 (WAG); Dlamini s.n. (NBG); Hayes s.n. (NBG); Thunberg s.n. (S).

Cynanchum africanum (L.) Hoffmanns., Verz. Pfl. – Kult.:54 (1824)
Atlas. 6 t.34. *Apocynum scandens Africanum, Vincae pervincae foliis, subincanum.* Par. Batav. (Hermann 1698:59).
Commelin. Rar. & Exot.:18 t.18. Idem.
Artist. Not signed (1686-1705).
Citations. *Periploca africana* L. 1753:211, [Hort. Cliff.:

79.1, ms. LINN, Boerhaave 1719,1:314], Burm.f. 1768 P.F.C.:7, Miller 1768, Willd. 1797:1251.
Cynanchum pilosum R.Br. 1811:46 – Roem. & Schult. 1820:100.
Cynoctonum crassifolium (R.Br.) E.Mey. var. *pilosum* (R.Br.) E.Mey. – Huth.
Taxonomic notes. Three specimens in LINN are written up as *Periploca africana.* LINN 307.3 is the only specimen marked '3', which is the number in Sp. Pl. The specimen does not represent *C.africanum* as at present understood. The other two specimens, 307.4 & 5, do belong to the same species as Commelin's plate, but they are not available for typification as they are post-1753 acquisitions to the herbarium. The specimen in the Clifford herbarium is proposed as lectotype.
The genus *Cynoctonum* E.Mey., where Huth placed Commelin's plant, is a later homonym of *Cynoctonum* Gmelin, a synonym of *Mitreola* L. (Loganiaceae).
The combination *Cynanchum africanum* is commonly attributed to R.Brown, who cited *Periploca africana* L. as a synonym of *Cynanchum pilosum* R.Br. I found no earlier valid publication of the combination than that by Hoffmannsegg in 1824.
Distribution. South Africa: Cape.
Introduction ante 1689. Commelin does not state the origin of his plant. Hermann (1689:313) had at Leiden *'Apocynum scandens Africanum, hirsutum'*, which is probably the same species (cf. Boerhaave l.c.).
Specimens seen. H.S.C. 79, lectotype (BM); LINN 307.4 & 5; Wijnands 917 (WAG); Munro s.n. (K); Garside 1622 (K); Bayliss 6667 (WAG), Hall 4606 and 11656 (PRE); Morris 135 (NBG).

Orbea variegata (L.) Haw., Syn. Pl. Succ.:40 (1812) [Pl.1]
Atlas. 1 t.1. *Apocynum Humile Aizoides, siliquis erectis Africanum* Herm: Cat: Lugd: Batav: (Hermann 1687: 52 t.53).
Fritillaria crassa Promontorii Bonae Spei. Stapeli in not. ad Theophrastum (Stapel 1644:335).
Dutch: Africaans Huysloockachtigh Apocynum, met rechtopstaande haauwen.
Commelin. Not published by Commelin. Janse & Uitewaal (1939:53) published a photo of the water-colour.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. *Stapelia variegata* L. 1753:217, can be typified by H.S.C. 77 as the nomen specificum legitimum is taken from the Viridarium Cliffortianum. Among the paratypes is Hermann 1687 t.53.
Leach (1975) reinstated Haworth's genus *Orbea*, based on *Orbea variegata* (L.) Haw. This proposal was followed by e.g. Hall et al. 1980.
Although I like large genera, I accept *Orbea* as it seems to differ as much from *Stapelia* L. s.s. (type species *S. hirsuta* L.) as from *Caralluma, Orbea* includes *Stultitia.* Thus a more realistic taxonomy of *Stapelieae* is arrived at.
Note on the plate. A copy of this plate is in the Library of the Africana Museum in Johannesburg, catalogue no.W226. The copy is attributed to Alida Withoos. The water-colour, on paper, is annotated with the same phrase as Moninckx' and dated 21 July 1686.



Orbea variegata. Atlas 1 t.1

Distribution. South Africa: Cape Province.
Introduction ante 1686. *Stapelia variegata* was one of the first plants from the Cape known in Europe. Van Stapel (1644) in his edition of Theophrastus had a drawing of it *'Fritillaria crassa promontorii bonae spei'* (t.335). It was based on a drawing sent from the Cape by Justus Heurnius (Hermann 1687:54) in 1624 (White & Sloane 1937:1113).
Hermann cultivated the plant in Leiden (Hermann 1687:52-55). Agnes Block had two water-colours made of the species by De Heer (see V.d.Graft 1943:136, 146). There is a drawing of the species in Breyne's Flora Capensis in the edition of Gunn & Du Plessis 1978:141.
Specimens seen. H.S.C. 77, lectotype (BM); LINN 311.1; Wijnands 926 (WAG).

? **Pachycarpus** species
Atlas. 8 t.27. No name.
Commelin. Not published by Commelin.
Artist. Alida Withoos (1694).

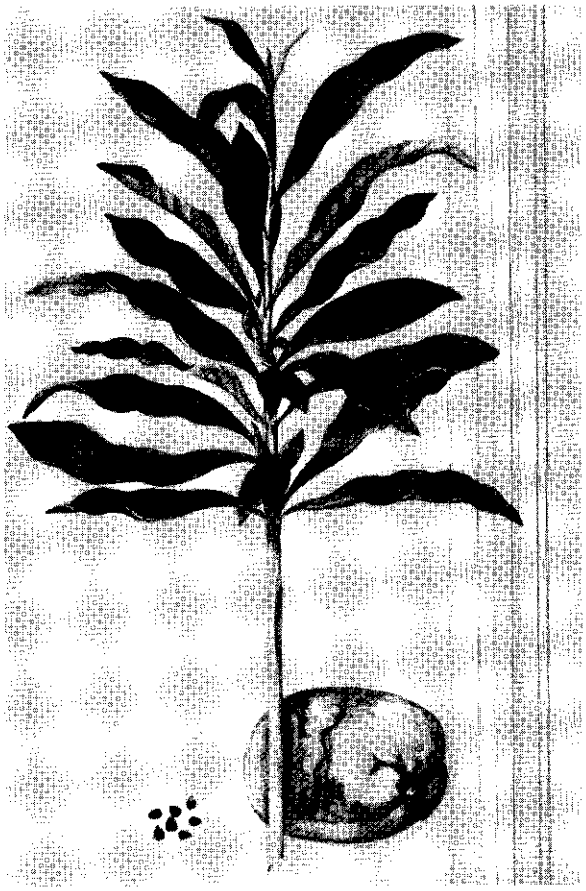
Stapelia hirsuta L., Sp. Pl.:217 (1753) [Pl.51]
Atlas. 6 t.35. *Asclepias africana aizoides, flore pulchre fimbriato.*

Commelin. Rar. & Exot. 19 t.19. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Stapelia hirsuta* L. 1753:218, [Hort. Cliff.: 77.2, V.Royen: 409, ms LINN, Boerhaave 1719,1: 312.5, Tilli 1723:17, Bradley 1725:5 t.23, Burman 1738:29], Burm.f. 1768 P.F.C.:7, Miller 1768, Willd. 1797:1278, Decaisne in DC. 1844:653, Kraus 1893: 115, Huth.
Stapelia hirsuta L. var. *patula* (Willd.) N.E.Br., Fl. Cap., 1909, 4,1:937, White & Sloane 1937,2:595, with reproduction of the plate.
Taxonomic notes. *Stapelia hirsuta* is typified by the specimen in H.S.C. 77.2, proposed by N.E.Brown (l.c.). The specimen in LINN belongs to var. *patula* (Brown l.c.). As I have the impression that the varieties in *S. hirsuta* are clones originated and/or maintained in cultivation rather than biological entities in nature, I do not recognize var. *patula* here.
Distribution. South Africa: S.E.Cape.
Introduction ante 1699. Commelin gave no information on the source of his plant. As habitat he gave the Cape, based on the Witsen Codex. Morison 1699:611 could be the first record of the species in cultivation.
Specimens seen. H.S.C. 77.2, lectotype; LINN 311.2; Thunberg s.n., 'ex Hollandia' (S).

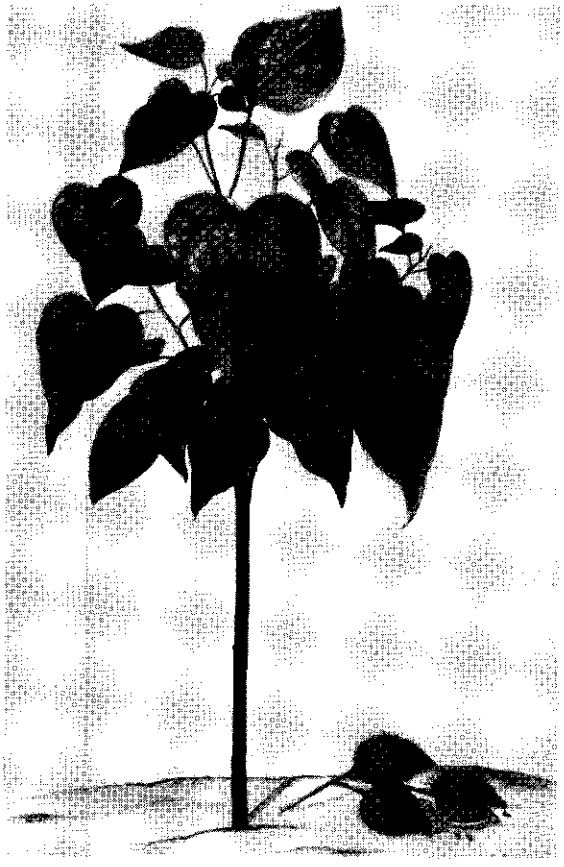
BIGNONIACEAE

Crescentia cujete L., Sp. Pl.:626 (1753)

Atlas. 5 t.18. *Arbor Americana cucurbitifera folio longo mucronato, fructu oblongo.*
Commelin. Hort. Amst. 1:127 t.71. Idem.
Dutch: Americaansche lang- en spits-bladerige caauwoerde-boom, met langwerpige vruchten.
Artist. Maria Moninckx (1691).
Citations. *Crescentia cujete* L. 1753:626, [Hort. Cliff.: 327.1, ms LINN], Willd. 1800:311, Huth.
Crescentia cucurbitina Gaertn. 1805:230.
Taxonomic notes. Commelin's plate shows a twig of *Crescentia cujete* L., also the seeds could belong to this species. The fruit, however, cannot possibly belong to *Crescentia* as the monographer of the genus, Dr A.H. Gentry, kindly informed me. His guess is that it could be cucurbitaceous.
Gentry (1980:91) designated as the type of *Crescentia cujete* L. a specimen in the Linnean herbarium, LINN 779.1. This specimen is annotated 'Br', indicating that it was part of Patrick Browne's herbarium, which was purchased by Linnaeus in July 1758. Gentry's typification, therefore, must be rejected. The other Linnean specimen, LINN 779.2, is annotated '32'. It is linked with *Crescentia* 32 *cujete* in Alm's dissertation Plantae Surinamenses (1775) and cannot typify *Crescentia cujete* L.1753. No specimen is preserved in the Clifford herbarium that vouches for Linnaeus' reference to his earlier description in Hort. Cliff.
The references to Plumier concern names only, no illustrations. An original Plumier drawing in Paris represents *Amphitecna*, as Dr. Gentry informed me; it was published as t.109 in Plantarum Americanarum by Burman. Also Commelin's plate is less desirable as the type, since it is a mixture.
Plukenet's illustration t.171 f.2, cited by Linnaeus both in Hort. Cliff. (for var. δ) and in Sp. Pl. is designated here with Dr. Gentry's approval as the lectotype of *Crescentia cujete* L.
It is noteworthy that Commelin described his plant as caauwoerde-boom and stated that the calabas is a different species. Cauwoorde is a Dutch name for *Lagenaria siceraria* (Mol.) Standl., so that the fruit and seeds shown in the plate may represent the latter species. Commelin probably confused the fruits of *Crescentia* with those of *Lagenaria*.
Gaertner cited Commelin's plate in the protologue of *Crescentia cucurbitina*. This name is a synonym of *Amphitecna latifolia* (Mill.) Gentry.
Distribution. N.Central America and Mexico, naturalised elsewhere.
Introduction ante 1688. Commelin did not specify the source of his plant. He discussed the use made of the



Crescentia cujete. Atlas 5 t.18



Bixa orellana. Atlas 5 t.7

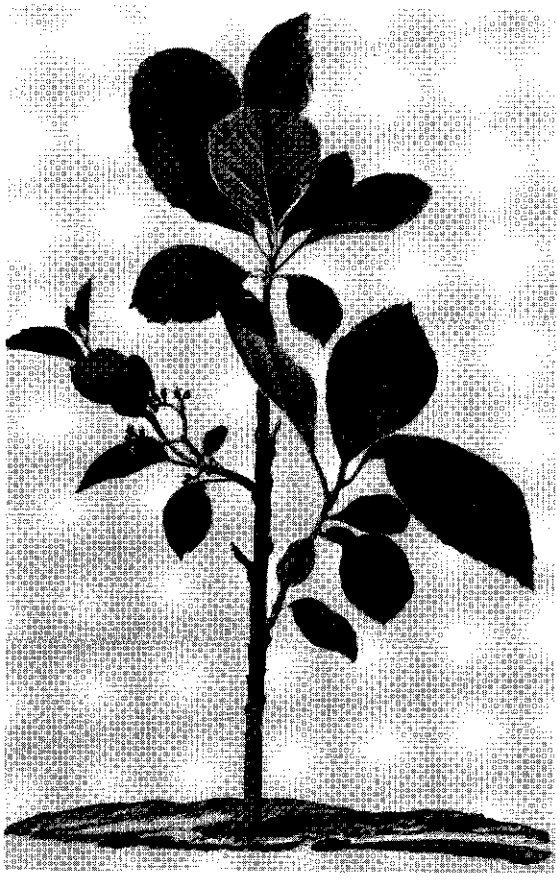
fruits, based on information from 'Americaners'. The plant was grown from seed 'three years ago', so probably in 1688. Commelin further noted that the species had not yet flowered in Europe, so that it probably had been in cultivation already. De Laet (1633:664) published a crude illustration of *Crescentia cujete.*
Specimens seen. Breteler 4327 (WAG); Beard 468 (K); Curtiss 311 (K); Stoffers 412 (U); J.de Wilde 3173 (WAG).

BIXACEAE

Bixa orellana L., Sp. Pl.:512 (1753)
Atlas. 5 t.7. *Orleana, sive Orella Folliculis Lappaceis* Herm. Cat. Hort. Lugd. Bat. (Hermann 1687:464).
Commelin. Hort. Amst. 1:65 t.33. Idem, and *'Urucu Brasiliensibus'* (Piso 1658:133).
Dutch: Brasiliaanse Orleaan.
Artist. Maria Moninckx (1691).
Citations. *Bixa orellana* L. 1753:512, [Hort. Cliff.:211, Hort. Ups.:148, ms LINN, Commelin in Merian 1705 t.44, Burm. in Rumpf 1745:81], Burm.f. 1768 Fl. Ind.: 120, Aublet 1775:533, Poir. 1804:229, DC. 1824:259, Huth.
Taxonomic notes. The nomen specificum legitimum is taken from Hort. Cliff.:211 and V.Royen:477. No Van Royen specimen is found in L. H.S.C. 211 could well serve as lectotype.
Distribution. Tropical America.
Introduction. Commelin raised a seedling in 1691 from 'America'.
The Leiden garden (Hermann l.c.) had the plant in 1687. Agnes Block cultivated it at De Vijverhof (see V.d.Graft 1943:143).
The species was known for long (Bauhin 1623:419), but apparently not in cultivation.
It was taken to other parts of the tropics immediately after the discovery of America.
Rumphius knew it (vol.2:79 t.19), introduced, as his guess is, from the Philippine Islands where it had been brought by the Spaniards (Burkill 1966:333).
Specimens seen. H.S.C. 211, lectotype (BM); LINN 674; Skelding et al. 3013 (K); Leeuwenberg s.n., cult. (WAG).

BORAGINACEAE

Bourreria succulenta Jacq., Enum. Syst. Pl.:14 (1760)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:153 t.79. *Mespilus americana laurifolia, glabra, fructu mucilaginoso. Calabura rubra foliis laurinis.* Parad. Bat. Prod. (Hermann 1689:319).
Dutch: Americaansche appel-boom met gladde laurierbladeren, en roode slijmerige vrugten.
Citations. *Cordia bourreria* L. 1759:936.
Bourreria succulenta Jacq. 1760:14 & 1763:44, Gaertn. 1805:170.
Ehretia bourreria (L.) L. 1762:275, [ms LINN], Burm.f. 1768 Fl. Ind.:59, Willd. 1797:1078, DC. 1845:506, Huth.
Taxonomic notes. *Cordia bourreria* L. is presently included in the genus *Bourreria* as *B.baccata* Raf. It is typified by a collection of P. Browne from Jamaica LINN 254.2 (!). Plumier (ed. Burman) t.105, cited by Linnaeus in the protologue, belongs to *Cordia sebestena* L. Commelin's plate represents yet another species, *B.succulenta* Jacq. (cf. Stearn 1971:620, 626). In the printed protologue of *B.succulenta* Commelin's plate is the only element that allows for an interpretation of the name. A description was provided in Jacquin 1763:44. A specimen from Martinique was illustrated by Jacquin in the Obs. Bot. 1767 t.26. This illustration could serve as type of the name *B.succulenta* if no specimen turns out to be available. Since Jacquin must have had at his disposal in 1760 the drawing published in 1767, it qualifies for typification. Commelin's plate is a mixture. The plant did not flower in Amsterdam, the inflorescence was drawn from a herbarium specimen sent from 'America'.
Distribution. Florida to Venezuela, West Indies.
Introduction ante 1690. Commelin does not state the source of his plant, he had it from seed. As habitat he



Cordia myxa. Atlas 2 t.15

gives America, his editors add that it grows abundantly in Curaçao.
Specimens seen. Sintenis 621 (K); Stoffers 1457 (U).

Cordia myxa L., Sp. Pl.:190 (1753)

Atlas. 2 t.15. *Sebestena Domestica* B: Pin: 446 (Bauhin 1623:446). Myxon & Sebesten Dodon. 1262 (Dodoens 1583:794?).
Vidimaram Hort: Mal: Tom: IV.77 (Reede 6:77 t.37. 1689).
Dutch: Tamme Sebeste Boom.
Commelin. Hort. Amst. 1:139 t.72. Idem, except the reference to Reede.
Artist. Jan Moninckx (1687 or 1691).
Citations. *Cordia myxa* L. 1753:190 't.79', [Hort. Cliff.: 63.8, ms LINN, Boerhaave 1719,2:246], Burm.f. 1768 Fl. Ind.:59, Miller 1768, DC. 1845:479, Huth.
Cordia officinalis (Gaertn.) Lam. 1792:420.
Cordia obliqua Willd. 1794:4 – Hutchinson 1918:218.
Taxonomic notes. Commelin's plant is the medicinal *Cordia* that he knew well from his trade in simplicia. The plant was most likely grown from seed he took from his commercial stock. The seeds were used as an expectorans (Commelin 1724), called 'borstpruimen', i.e. 'chest-prunes'. Commelin called them 'Sebeste Stenen'. The source of this medicinal *Cordia* was Egypt or the Orient, possibly also another species from peninsular India was used.
The epithet *sebestena* was used by Linnaeus for *Cordia sebestena* L., an American species (the Scarlet Cordia). The diagnosis of *Cordia myxa* L. in Sp. Pl. is cited from Hort. Cliff. The specimen H.S.C. 63.1 is a sterile specimen with six leaves, it could typify the name *Cordia myxa.* Comparable specimens are available in S-Linn and LINN 253.4. The latter specimen was the basis for Hutchinson's interpretation of *Cordia myxa.* I have insufficient taxonomic knowledge of *Cordia* to decide on the typification.
The West-African plant treated at present as *Cordia myxa* L. seems to me a different species (cf. Geerling 1982:83). It differs from Commelin's plate and the Linnean specimens by the strongly developed secondary nerves in the leaves, emerging from the lower side of the lowermost nerves. Hutchinson (l.c.) referred to it as *Cordia goetzii* Gürke. Hutchinson interpreted Commelin's plate as *C.obliqua* Willd., which is *Vidimaram* Reede. Commelin used *Vidimaram* as a synonym of *Sebestena Domestica* in the atlas, but not in the published text. Buchanan-Hamilton discussed it amply in his Commentary (1835:199-201). Johnston (1951) restricted the use of the name *C.obliqua* to a cultivated plant from peninsular India, and took up *C.dichotoma* Forst.f. for the Malaysian wild species. Commelin's plant seems to belong to one of the cultivated species, either *C.myxa* from the Orient and Egypt, or *C.obliqua* from Malabar and Ceylon.
Distribution. Egypt and the Orient.
Introduction. Commelin raised his plant from seed in 1684. His plant flowered in 1687 and again in 1691. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.61 f.1.
Specimen seen. Meyers & Dinsmore 5132, Jericho (L).

Cynoglossum cheirifolium L., Sp. Pl.:134 (1753)

Atlas. 1 t.9. *Cynoglossum Creticum, Argenteo angusto Folio.* B: Pin. (Bauhin 1623:257).
Dutch: Honts-tong, van Candia, met smalle Bladeren.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1690).
Taxonomic notes. The nomen specificum legitimum of *Cynoglossum cheirifolium* is taken from Van Royen 1740:406. No specimen in Herb. V.Royen (L.) is available as type. The annotation on the flowers indicates Linnaeus had a specimen at hand, but LINN 183.5 '3 *cheirifolium*' is from Loefling's list of 1753, sent in October from Madrid.
Bauhin's name, used by Commelin, was cited for this species in the protologue.
Distribution. West Mediterranean region, Portugal.
Introduction. The species was known to Bauhin 1623

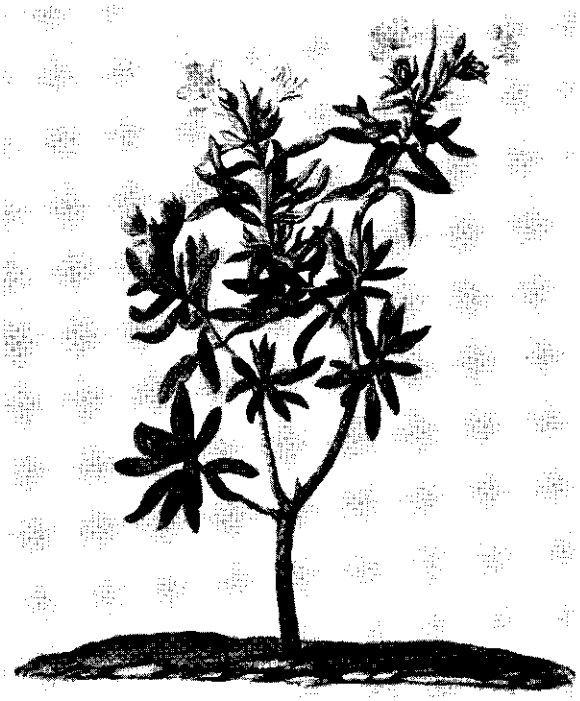
Cynoglossum cheirifolium. Atlas 1 t.9

and Clusius 1601,2:162. I have no evidence that it was in cultivation elsewhere in Holland around 1690.
It is in cultivation presently.
Specimens seen. LINN 183.5; V.Prehn Wiese 693 (WAG); Touw 117 (WAG); D.v.Royen (L 898.272-44 & -43, -45, -46).

Echium plantagineum L., Mant. alt.:202 (1771)
Atlas. 1 t.12. *Echium Creticum Lati-folium* B: Pin. (Bauhin 1623:254).
Dutch: Slangen-Kruijt van Candia, met breede Bladeren.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Bauhin's name, used by Commelin, was cited for *Echium creticum* L., Sp. Pl. 1753:139 in the protologue. Commelin's plant is not *E.creticum.* Greuter, in Greuter & Rechinger 1967, used the name *Echium lycopsis* L. in Grubb, Fl. Angl.:1754:12 for *E. plantagineum,* on the basis of *'Lycopsis'* Bauhin 1623: 255. His argument is based on the 'nomenclatural identity' of *E.lycopsis* L. and *E.italicum* L. β Sp. Pl. 1753: 139. As 'β' is no name it has no type. If *Echium lycopsis* L. is typified by Bauhin's description, it is the correct name for the species, but Greuter does not typify it explicitly.
Distribution. S. and W.Europe, N.W.Africa.
Specimens seen. H.S.C. 43.2 (BM); Segal 263 (WAG); Ross 656 (WAG); De Bruijn & Sterken 1058, culta (WAG).

Heliotropium curassavicum L., Sp. Pl.:130 (1753)
Atlas. No water-colour present.
Commelin. Catalogus 1689:152. *Heliotropium americanum, cynoglossi marini foliis, flore albo.*
Dutch: Amerikaans Kreeft-kruyd met bladeren van zee Honts-tong.
General note. This species is not in the atlas nor in the four books based on it. It is one of the many mentioned in Commelin's catalogue of 1689 that were not discussed and illustrated later on. To illustrate such a case it is discussed here.
Citations. Kiggelaer 1690:24, Plukenet 1696:182, Sloane 1696:94 '?', Linnaeus 1738:45.
Taxonomic notes. Nothing but the name is available to interpret Commelin's plant. Linnaeus based *Heliotropium curassavicum* on Hort. Cliff.:45 where Commelin's phrase is cited. Possibly Commelin had this species, but it cannot be proved beyond reasonable doubt. Breyne saw the plant in Amsterdam in 1688 and published it (1689:55) as *'Heliotropium Americanus minus glabrum, folio angusto glauco'.* This phrase, representing (but it cannot be proved!) the same plant as Commelin's was cited by Plukenet 1691 t.36, f.3, 1696:182, Hermann 1698:183, Ray 1704:270, Sloane 1707:213, Boerhaave 1719:190, and Linnaeus in Hort. Cliff.:45. It is interesting to see that these two names describing the same plant have been cited as synonyms only by Linnaeus (1738) and Plukenet (1696). Breyne's phrase is very helpful as it includes *'glabrum'.* The key in Adams 1972:617-618 for *Heliotropium* separates *H.curassavicum* as the only glabrous species.
Distribution. Tropical America, naturalized on tropical and subtropical shores elsewhere.
Introduction ante 1688.
Specimens seen. P.de Wilde 160, Curaçao (WAG); Bijhouwer 156, Cuba (WAG); Breteler 4356, Venezuela (WAG); Lee 991, California (WAG); Wingfield 1927, Tanzania (WAG); Seydel 1664, Namibia (WAG); Salle 65, Algeria (WAG); P.de Wilde & Dorgelo s.n., France (WAG, AMD).

Lobostemon fruticosum (L.) Buek, Linnaea 11: 134 (1837)
Atlas. 4 t.1. *Echium Africanum frutescens foliis pilosis Lycopsis Africana,* vulgo.
Commelin. Hort. Amst. 2:107 t.54. Idem.
Artist. Jan Moninckx (1697-1701).
Citations. *Echium fruticosum* L. 1753:139, [Hort. Cliff.:43.4, V.Royen:407.5, ms LINN, Ray 1704:269], Bergius 1767:39, Burm.f. 1768 P.F.C.:4, Miller 1768, Willd. 1797:782, Jacq. 1797:15 t.34, Poir. 1808:661.



Lobostemon fruticosum. Atlas 4 t.1

Lobostemon fruticosum (L.) Buek 1837:134 – DC. 1846:6, Huth.

Taxonomic notes. The plate has consistently been cited for *Echium fruticosum* L. It probably represents this species but it might also represent *Lobostemon argenteum* (Berg.) Buek.

Echium fruticosum is a name difficult to typify. The specimen in H.S.C. 43.4 represents a European *Echium*, probably *E.plantagineum.* I suppose this specimen was added to the Clifford herbarium and is not part of the original set. H.S.C. 43.4 is not indicated as present 'V' in the copy of the book kept with the herbarium. The name on the label *'Echium folio asperrimo et viscosissimo'* is not found in Hort. Cliff. or Sp. Pl.

Distribution. South Africa: Western and Southwestern Cape.

Introduction ante 1698. Commelin does not give any information on the origin of his plant, but he gives information on its habitat in the Cape, so he probably had it from there. Commelin knew the plant for 3-4 years from other Dutch Gardens.

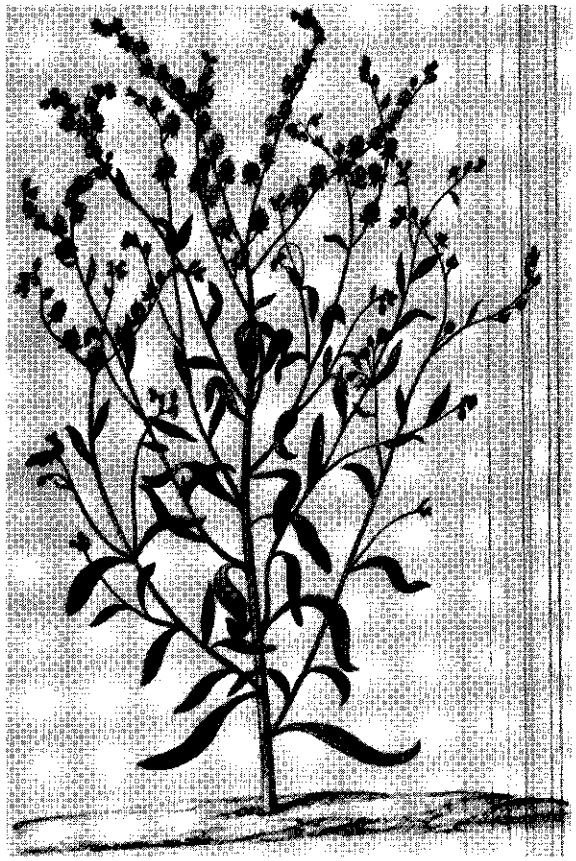
Specimens seen. LINN 191.1 & 2 & 3; Sieber s.n. (K); Goldblatt 2361 (WAG); Bos 369 (WAG); Barker 5402 (NBG); Manson 145 (STE); Thode 5810 (STE).

Mertensia species

Atlas. 7 t.48. No name.

Commelin. Not published by Commelin.

Artist. Jan Moninckx (1686-1706).



Paracaryum cristatum. Atlas 6 t.47

Paracaryum cristatum (Schreber) Boissier, Diagn. ser.1(11):131 (1849)

Atlas. 6 t.47. *Cynoglossum buglossi folio fructu umbilicato cristato.*

Commelin. Rar. & Exot. 31 t.31. Idem, and Tournef: Coroll: inst. (Tournefort 1703:7).

Artist. Jan Moninckx (1703-1705).

Citations. No interpretation of this plate is known to me.

Taxonomic notes. Tournefort's phrase-name, used by Commelin, was cited by Brand (1921:62) under *Mattiastrum cristatum* (Schreb.) Brand. This species is at present included in the genus *Paracaryum* as *P.cristatum* (Schreb.) Boiss., cf. Mill in Davis 1979:296, who designated Tournefort's specimen in P as the type of *Cynoglossum cristatum* Schreber.

The flowers of *P.cristatum* are described as violet or purple, Moninckx's water-colour shows yellow flowers with a reddish hue. This discrepancy may be explained by the fact that the flowers in *P.cristatum* sometimes dry to a dirty-yellow. Another moot point is that Commelin's plant appears to be glabrous in the illustrations, whereas *P.cristatum* is a pubescent species. Despite these two deviating characters I suppose that

Commelin's plate 31 represents *P.cristatum*, the more so since Dr R.R.Mill, who kindly discussed this plate with me, accepts it for this species.
Distribution. E.Turkey, see Mill 1979:291 map 22.
Introduction 1703. The plant was grown from seed, received from Tournefort and Gundelsheimer.
Specimens seen. Davis 23441, 44423 and 47382 (E).

BROMELIACEAE

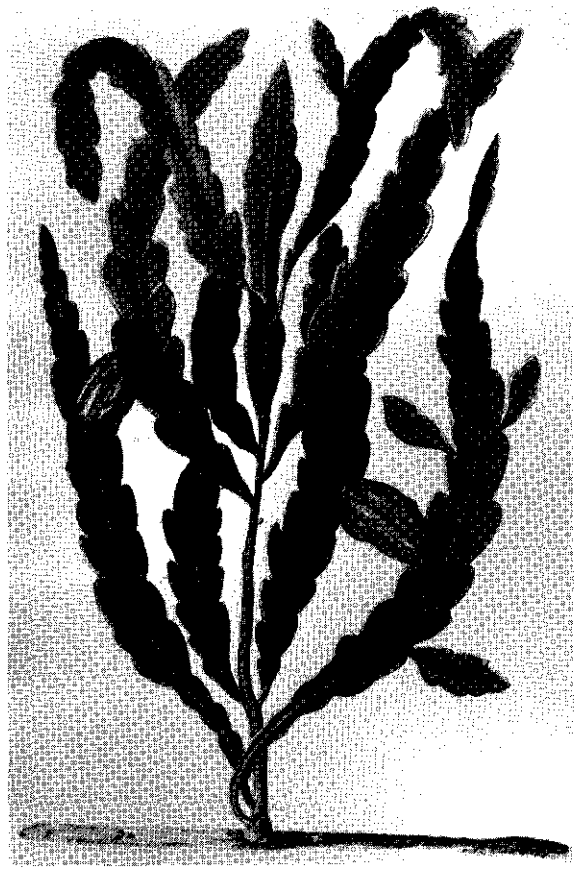
Ananas comosus (L.) Merrill, Interpr. Rumph. Amb.:133 (1917) [Pl.4]
Atlas. 1 t.36. *Ananas* Pison. Acostae.
Dutch: Ananas of Brasiliaansche distel met bladeren van Aloe.
Commelin. Hort. Amst. 1:109 t.57. *Ananas* Acostae Pisonis (Piso 1658, Acosta 1590) *seu carduus brasilianus foliis Aloes.* Bauh. Pin. (Bauhin 1623:437).
Artist. Jan Moninckx (1688-1689).
Citations. *Bromelia ananas* L. 1753:285, [Hort. Cliff.: 129.2, Hort. Ups.:73.1, ms LINN, Merian 1705 t.1, Boerhaave 1719,2:83.1, Fabricius 1763:42], Burm.f. 1768 Fl. Ind.:79, Lam. 1783:143, Willd. 1799:7. *Ananassa sativa* Lindl. – Huth.
Ananas comosus (L.) Merr. – Smith & Downs 1979: 2062, Macphail 1962:53.
Taxonomic notes. *Ananassa domestica* Rumphius Herb. Amb. 5:227 t.81 (1747) was designated by Merrill (l.c.), as the type of *Bromelia comosa* [Stikman] L. Several syntypes are available of the name *Bromelia ananas* L., viz. Commelin's plate and specimens consisting of scape-bracts only in H.S.C.127 and herb. Van Royen (L 898318-29).
Distribution. Brazil, a cultigen, in Commelin's time distributed already over the tropics.
Introduction. Oviedo (1535) was the first to describe and illustrate the pineapple from Haiti. He sent plants to Europe but cultivation failed (see Collins 1960). Jan Huyghen van Linschoten described the plant in his Intinerario (De Wit 1949:LXXVI). Possibly the first pineapple in Holland was cultivated by Paludanus at Enkhuizen (1592).
Fruits were offered to King Charles II in 1661, a painting by Danckerts was made for the occasion. These fruits were probably brought from Barbados, not cultivated in England (Collins 1960:23), where the first fruit was produced in 1720.
A ships captain Tak is reported to have introduced plants from Surinam in 1680 to the Horti of Leiden and Amsterdam. Two fruits are said to have been sent to Louis XIV from Amsterdam (fide Van de Graft 1943: 121).
Agnes Block had a fruiting plant at her estate De Vijverhof in 1687, she had a water-colour made of it by Alida Withoos. Possibly there was a pineapple in fruit at De Vijverhof already in 1674, since such a plant is shown on a family portrait of Sijbrant de Flines and Agnes Block by Jan Weenix as shown in Van de Graft.
Commelin had his plant sent from Curaçao, it produced fruits in 1688 and 1689. His illustration was copied several times, e.g. by Lochner in his Commentario de Ananasa sive nuce Pinea indica Vulgo Pinas (1716) as reproduced by Collins (1960 t.7) and by Bradley (1715) as reproduced by Walters (1981:17).
Pieter de la Court started mass-cultivation of *Ananas comosus* at his estate Meerburg near Leiderdorp around 1700 (see Miller 1768 and Van de Graft 1943).
Reports of the pineapple in ancient Egypt, Assyria and Rome (Collins 1960:18-20) must be based on misinterpretations.

BURSERACEAE

Bursera simaruba (L.) Sarg., Gard. & For. 3:260 (1890)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:149 t.77. *Terebinthus americana polyphylla* Par. Bot. Prodr. (Hermann 1689:380, *'Therebinthus Americana polyphylla Palamalatta dicta'*).
Dutch: Veel-bladige therebenthyn-boom van America.
Citations. *Bursera gummifera* L. Sp. Pl. ed.2 1762:471, app. 1679 ('?'), [ms LINN], Lam. 1788:767 (sub β eadem?), Persoon 1797:365, Willd. 1806:1120 (sub β). *Bursera gummifera* L. var. *polyphylla* DC. 1825:78 – Huth.
Taxonomic notes. *Bursera simaruba* is based on *Pistacia simaruba* L., 1753:1026. This name can be typified by Sloane, Hist. 2:89 t.199 (1725) *Terebinthus major, betulae cortice, fructu triangulari.*
Bursera gummifera L. (1762) is a substitute for *Pistacia simaruba* L. (1753), and therefore an illegitimate name based on the same type. The type locality is Jamaica.
Commelin's Plate 77 is a bad one, not characteristic of the species. The thick, somewhat succulent branch tips and the smooth bark agree however well with *B.simaruba.* The species grows in very hot habitats on limestone rocks near the coast. Therefore the horticultural problems as witnessed by the plate can be explained.
Distribution. Florida-Guinana's, West Indies.
Introduction ante 1689. Commelin gives the distribution as Curaçao, he might have had it from there.
Plukenet 1692 t.228 f.6 shows a fragment under the same phrase as Commelin. I cannot identify it.
Specimens seen. Edwards 366 (K); Boldingh 4690, Curaçao (U); Breteler 4381 (WAG); Kohler 1 (WAG).

CACTACEAE

Epiphyllum phyllanthus (L.) Haw., Syn. Pl. Succ.:197 (1812)
Atlas. 8 t.4. No name.
Commelin. Not published by Commelin. (*Ficus Indica, Scolopendrii foliis* Commelin ex Tilli 1723:62 probably is this plant. Tilli received a plant under this name from Commelin.)



Epiphyllum phyllanthus. Atlas 8 t.4

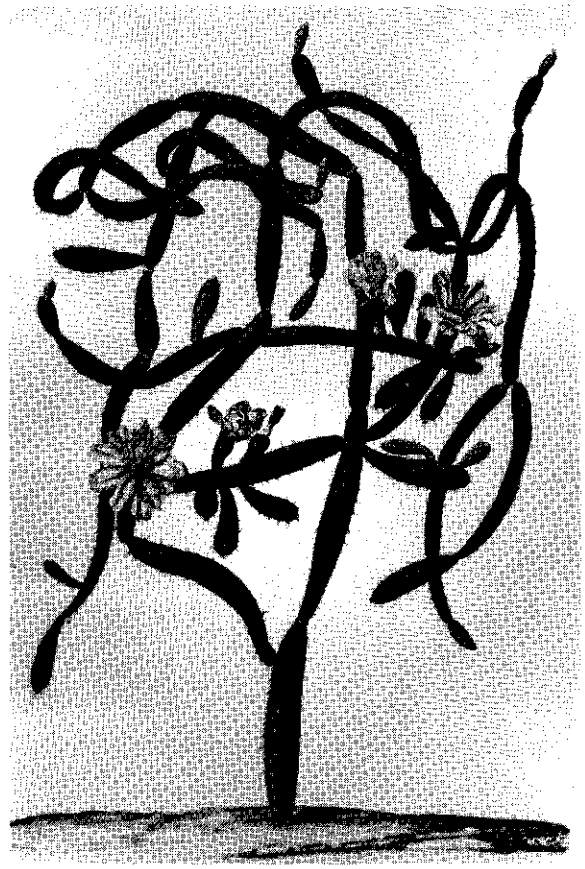
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. *Cactus phyllanthus* L. 1753:469 was published with a new nomen specificum legitimum *'Cactus prolifer ensiformi-compressus serrato repandus'*. The specimen 633.5 in LINN *'Cactus Phyllanthus'* is not known to have been in the Linnean herbarium in 1753, it consists of a flower not mentioned in the diagnosis, so it can hardly be the type. LINN 633.6 is a specimen from Browne's collection, purchased by Linnaeus in 1758, it thus cannot be considered for typification. Hort. Cliff.:183 and Van Royen:281 are cited but as a new diagnosis was given, I do not consider them for typification.
The remaining syntypes are: *'Cereus scolopendri folio brachiato'* Dillen 1732:73 t.64 f.74, this plate could well serve as the lectotype; *'Phyllanthus americana, sinuosis foliis longis'* Plukenet Almag.:269 & Phytogr. t.247 f.5. This plate represents *Nopalxochia phyllanthoides* (DC.) Britton & Rose, a species from Mexico.
Distribution. 'Panama to British Guiana, Bolivia and Brasil' (Britton & Rose 1923:205).
Introduction ante 1689. The origin of Commelin's plant might have been Suriname, it is listed for this country by Pulle 1906:327. The species was in cultivation in Leiden: Hermann 1678: add.8, Boerhaave 1719, 2:82.11 and Van Royen 1740:281. Kiggelaer 1690:19 had *'Opuntiae affinis Surinamensis e foliorum crenis nova folia producens'*. The species was in cultivation in 1689, I found no proof that *Nopalxochia* was cultivated around that year, although it was described by Petiver 1709 t.59 f.10 and by Hernandez 1651 'Nopaloach-Cuezalticquizi', a name retained by Britton & Rose for their genus.
I have not seen the true *Epiphyllum phyllanthus* in cultivation, hybrids are common.
Specimen seen. Van Donselaar 2848, Suriname (U)..

Mammillaria mammillaris (L.) Karsten, Deutsche Flora:888 (1882) [Pl.36]
Atlas. 5 t.9. *Ficoides vel ficus americana sphaerica, tuberculata, lactescens, flore albo, fructu rubro pyramidali.* Cat. Hort. Beaum. (Kiggelaer 1690:21).
Commelin. Hort. Amst. 1:105 t.55. Idem.
Dutch: Ronde, gebuchelde, Americaansche melkgevende vyge, met witte bloemen, en roode pyramidswyse vruchten.
Artist. Maria Moninckx (1686-1690).
Citations. *Cactus mammillaris* L. 1753:466, [Hort. Cliff.:181.1, Hort. Ups.:119.1, ms LINN, Boerhaave 1719,2:83.1].
Cactus mammillaris L. var. *glaber* DC. 1803 t.111.
Mammillaria simplex Haw. 1812:177, Huth.
Neomammillaria mammillaris (L.) Britton & Rose 1937: 70.
Mammillaria mammillaris (L.) Karst. – Hunt 1976:11-13, with reproduction of plate.
Bradley 1725:11 t.29 used Commelin's name without quoting him. His illustration might be a crude copy of Commelin's. Bradley mentioned specimens of this species he had seen in Amsterdam. He thought it to be a Cape plant and therefore changed Commelin's *'Americana'* in *'Africana'*.
Taxonomic notes. No specimens are found in H.S.C., LINN and L-Herb. Roy. Therefore a choice must be made from Hermann 1698 t.136, Plukenet 1691 t.29 f.1, and Commelin 1697 t.55. The diagnosis is in agreement with all three. As Commelin's plate is the best I propose it as lectotype. Linnaeus' 'habitat in rupibus' is certainly based on Hermann's suggestive illustration.
Distribution. Linnaeus 1753 gives: habitat in Americae calidioris rupibus, Zander 1980 has: Venezuela and Curaçao.
Commelin writes: 'America is its habitat, and it has been sent us from Curaçao and other neighbouring islands'.
Introduction (ante ?) 1687. Commelin received the plant from Curaçao and neighbouring islands. Kiggelaer (1690:21) lists this species for the garden of Simon van Beaumont, where Breyne (1689:79) saw it in 1688. Hermann grew it in Leiden in 1687 (Cat.:670), he gave credit to Van Beaumont for the introduction. The

species is represented in the Codex of the Duchess of Beaufort 1 t.35 f.3 & 2 t.10. Agnes Block had it in cultivation at De Vijverhof, where De Heer made a water-colour of it (see V.d.Graft 1943:146).
Specimens seen. Britton & Shafer 3085 (U); living plant in collection WAG.

Mammillaria mammillaris (L.) Karsten, Deutsche Flora:888 (1882)
Atlas. 1 t.27. *Echinomelocactus minor lactescens absque tomento Cylindris strictioribus.* Herm: Par: Batav: Prod. (Hermann 1689:331).
Dutch: Kleyne Melck-gevende Meloen-Distel, van Curaçao.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1687).
Note. This species is discussed with the published illustration of it in Hort. Amst. 1:105 t.55.

Opuntia curassavica (L.) Mill., Gard. Dict. ed.8 no.7 (1768)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:107 t.56. *Ficus indica seu opuntia curassavica minima.* Cat. Hort. Beaum. (Kiggelaer 1690:19).
Dutch: Indiaansche vyge, of kleenste curassausche opuntia.
Citations. *Cactus curassavica* L. 1753:469, [Hort. Cliff.: 182, Hort. Ups.:120, V.Royen:280, ms LINN, Volckamer 1700:309, Boerhaave 1719,2:82.9, Tilli 1723:62]. *Opuntia curassavica* (L.) Miller 1768, Huth, Britton & Rose 1937:102 (as 'Commerson').
Taxonomic notes. Since no specimens are preserved in H.S.C., LINN or L-Herb. Roy., Commelin's plate is proposed here as the lectotype. The epithet and distribution are taken from Commelin. Curaçao is the type locality. Commelin's plate has rather long stem segments, longer than Bradley 1716 t.4 *'Opuntia minima Americana, spinosissima, flore Sulphureo'*, grown by the Duchess of Beaufort at Badminton. It seems too long compared with the dimensions given in Britton & Rose (l.c.). Allowance must however be made for etiolation in cultivation. Several forms were in cultivation in the 18th century. Haworth (1812:1967) names three: *major, media* and *minor.* It is not clear to me whether these represent forms within *O.curassavica* or related species within the series *Curassavicae,* probably the latter. *Opuntia repens* Bello was in cultivation around 1700; see the water-colour in the Atlas 7 t.44, discussed under that name.
Distribution. The species is known from Curaçao, Bonaire and Aruba.
Introduction ante 1690. Kiggelaer mentions the species in 1690.
Commelin's plant might have come from Beaumont's garden as he does not give an origin himself, the origin Curaçao is given by the editors Kiggelaer and Ruysch.



Opuntia repens. Atlas 7 t.44

Plukenet 1696:t.281 f.3 p.147 is cited (as from Opera Bot., the 1720 or one of the later reprints) by Britton & Rose 1937:102 for this species, this seems doubtful. Not *'Ficus indica, seu Opuntia minor caulescens'* but the next kind listed but not illustrated by Plukenet *'Ficus indica omnium minima'* seems to represent *O. curassavica.* Bradley 1716 t.4 and Dillen 1732 t.295 also have the species.
As far as I know, it is not in cultivation at present.
Specimens seen. Boldingh 4900, Curaçao (U); Boldingh 6377, Aruba (U).

Opuntia repens Bello, Anal. Soc. Esp. Hist. Nat. 10:277 (1881)
Atlas. 7 t.44. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1707).
Taxonomic notes. The joints are much larger and narrower than in *Opuntia curassavica* (L.) Mill. as illustrated in Comm. Hort. Amst. 1 t.56. Even a very etiolated specimen of it hardly will develop into a plant like this one.
Moreover, *Opuntia curassavica* is reported to be rarely in flower whereas *O.repens* flowers frequently. Within

the series *Curassavicae* as treated by Britton & Rose (1937:102), *O.repens* is the only species matching the water-colour.
Distribution. Porto Rico and Virgin Islands.
Introduction. The plant was illustrated in 1843 by Pfeiffer & Otto, Abbild. Beschr. Cact. 1:t.6 f.2 as *Opuntia curassavica.* I know of no earlier reference to it. Moninckx' water-colour probably is the first illustration of it. Possibly *Opuntia curassavica δ longa* Haw. 1821:71 is the same, but is said to be from Brazil. Schumann does not give an account of this name in Flora Brasiliensis.
Kiggelaer's (1690:19) *'Ficus Indica seu Opuntia Curassavica minor spinosissima flore luteo'* might be this plant. It is not known to me to be in cultivation presently.

Pereskia guamacho Weber, Dict. Hort. Bois.: 938 (1898)
Atlas. 5 t.17. *Malus Americana Spinosa portulacae folio, Fructu folioso, semine reniforme splendente.*
Commelin. Hort. Amst. 1:135 t.70. Idem.
Dutch: Blad-Appel.
Artist. Jan Moninckx (1690-1691).
Citations. *Cactus pereskia* L. 1753:469, [Hort. Cliff.: 183, Hort. Ups.:122.14, ms LINN], Lam. 1785:543, Willd. 1799:946.
Pereskia aculeata Mill. 1768 – Huth, Schumann in Martius 1890 (4,2):313 (as 'Commerc.').
Taxonomic notes. The plate is a syntype of *Cactus pereskia* L., and has been interpreted as belonging to that species ever since. I consider it better placed in *Pereskia guamacho* Weber. The plate does not provide much to go on. The strong spines and the origin, Margarita Island, point to this species. The momen specificum legitimum *'Cactus caule tereti arboreo spinosa, foliis lanceolato-ovatis'* for *Cactus pereskia* L. is taken from Hort. Ups. There is a specimen in Linnaeus herbarium, LINN 633.7, marked '21', the number of the species in Sp. Pl. It is a fragment I cannot identify and can hardly have been the basis of the diagnosis. No specimens have been found in the herbaria of Clifford or Van Royen. Of the other syntypes Plum. gen. nov. 35 (cited by Linnaeus as 37) t.26 shows flowers and fruits only so it cannot be the type. Plukenet Phyt. t.215 f.6 is very poor, the strong spines point to *P.guamacho* Weber. *Pereskia aculata, flore albo, fructu flavescente* J.J.Dillen, Hortus Elthamensis 1732:305 t.227 f.294 represents *Pereskia aculeata* Mill. as it is presently understood. It would serve well as lectotype of *Cactus pereskia* L. Linnaeus annotated the plate in his own copy of the Hortus Elthamensis as *'Cactus Pereskia'*, see Schmidt 1965:97. Burkardt 1957:390 interprets the plate as *Pereskia aculeata* Mill.
The type locality is Antilles, probably Barbados as it is called 'Barbados Gooseberry'.
Dillen took the name from Plumier, he stated he considered Sloane Cat. Jam. Hist. 2 p.86 n.24 and Ray Hist. 3 dendr. 27.5 to be synonyms. The Plukenet plate he equated with Commelin's which he considered to represent another species. He also discussed *Portulaca spinosa lanuginosa arborescens Americana* of Hermann Par. Bat. p.11 (1698). Miller 1768 did not cite Commelin for his *Pereskia aculeata* but he mentioned Blad Apple as the Dutch name, a clear citation from Commelin. The intricate problem of the typification of *Pereskia guamacho* Weber will be treated by Dr B.Leuenberger, the present monographer of the genus.
Distribution. Venezuela. The plant came from Margarita Island off the Venezuelan coast.
Introduction 1690. Commelin considered his plant as undescribed. He probably was right at the time, so that 1690 can be accepted as the date of introduction in Europe. It is not known to me to be in cultivation nowadays. The plant was introduced from Margarita Island off the Venezuelan coast. The present distribution is Venezuela mainland and Margarita Island (Britton & Rose 1937:16).
Specimens seen. Johnston 216, Margarita Island (K); Breteler 4553 (WAG).

CAESALPINIACEAE

Bauhinia species
Atlas. 8 t.28. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Taxonomic notes. I have not been able to identify this *Bauhinia.* It most likely is a species from America.

'Caesalpinia sappan' L., Sp. Pl.:381 (1753)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:201 t.103. *Erythroxylum japonicum non spinosum coronillae folio.*
Dutch: Sapan-hout sonder doornen, met bladeren van coronilla.
Citations. No interpretation is known to me.
Taxonomic notes. This plant cannot be identified from the illustration. The names *'Erythroxylon'* and 'Sapan-hout' contain some information. Sapan-hout is the Dutch name for *Caesalpinia sappan* L., fide Van Wijk 1911:210. This wood was used for the preparation of a red dye as described by Reede 7:4. The name *Erythroxylon* points in the same direction.
The leaflets shown in the plate are not strongly asymmetrical as in *C.sappan,* cf. Jeswiet 736 (WAG) and in Bünnemeyer 99 (WAG). Probably 'Sapan' was used for all Caesalpiniod shrubs and trees used in dye-making (Mr J.M.Fundter, private communication), including e.g. *Pterocarpus indicus.* My guess is that the plate represents a *Caesalpinia;* I do not know which one. Commelin's name 'Japansche Blom-boom' indicates that it flowered profusely; all *Caesalpinia's* do so. Commelin also notes that this plant is not very tender. This

does not point to the tropical *C.sappan.* I doubt if this species would develop ripe fruits in Japan. The plate is somewhat reminiscent of *C.pulcherrima* L. Commelin in Reede 6:2 equates Breyne's *Crista Pavonis* with Reede's Tsetti-Mandarum (= *C.pulcherrima*), but writes of his plant that it differs from Breyne's. Commelin had plants of *C.pulcherrima* in 1684.
I cannot identify Commelin's plant with any of the *Leguminosae* in Ohwi's Flora of Japan. *Caesalpinia decapetala* (Roth) Alston (= *C.japonica* S. & Z.) comes close, but this species has thorns, Commelin's plant not.
The true *Caesalpinia sappan* L. is probably referred to by Hermann (1689:332): *Erythroxylum seu lignum rubrum Indicum spinosissimum Coluteae foliis, floribus luteis, siliquis maximis.*
Introduction ante 1692. Commelin received seeds from Johannes de Jong whom they were sent from Japan as 'Japansche Blom-boom' i.e. Japanese flower-tree. No year is given.
Mr J.Heniger informs me from his research in the V.O.C. archives that Nagasaki had a 'sapan werf' i.e. sapan-yard. The wood was imported in large quantities from China. The best quality came from Birma (Fundter, private communication).
Only two species introduced from Japan are represented in Commelin's book of 1697, the other is *Cinnamomum camphora.* Probably the introduction of sapan was considered to be of great economic interest. It was rather dangerous to export plants from Japan. But there was no necessity to do so as Sappan was available from Malabar and already described by Hermann and Breyne. I have no information on Johannes de Jong who is described by Commelin as 'an amateur'.
Specimens seen. For *Caesalpinia decapetala:* Maximowicz s.n. (L); Small s.n. (L); Togasi 429 (L).

Cassia cf. chamaecrista L., Sp. Pl.:379 (1753)
Cassia cf. *glandulosa* L., Syst. Nat. ed. 10,2: 1017 (1759)
Atlas. 2 t.6. *Chamaecrista Pavonis major.*
Commelin. Hort. Amst. 1:53 t.27. Idem.
Dutch: Leege Pauwe Kam met groote Bloemen.
Artist. Jan Moninckx (1686-1690).
Citations. *Cassia chamaecrista* L. 1753:379 (as 't.37'), [Hort. Ups.:101.6, ms LINN], Aublet 1775:382, Willd. 1799:528, Webb & Berth. 1842,3(2):121, Huth, Irwin & Barneby 1976:437.
Taxonomic notes. Neither from the original water-colour nor from the engraving differentiating characters can be seen for either *C.chamaecrista* or *C.glandulosa.* Comparison with the types of both names gives a better match for *C.chamaecrista* (see 'specimens seen').
Distribution. Mexico, Cuba to Grenada (Adams 1972: 328).
Introduction ante 1697. Commelin does not give any earlier synonym.
Breyne's *Chamae Christa pavonis americana, siliqua multiplici* (1678 t.24) is a syntype of *C.chamaecrista,* but later included in *C.glandulosa.*
Commelin compared his plant with *Mimosa spinosa secunda* Breyne.
Specimens seen. P.Browne s.n., LINN 528.32, type of *C.glandulosa* L.; LINN 528.30 '22 HU', type of *C. chamaecrista.* Both types were designated by Irwin & Barneby (l.c.).

Cassia fistula L., Sp. Pl.:377 (1753)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:215 t.110. *Cassia fistula alexandrina* B. Pin. (Bauhin 1623:405) & Alpini.
An Conna Hort. Mal. p.1? (Reede vol.1:37 t.21).
Dutch: Cassia fistula van Alexandrien.
Citations. *Cassia fistula* L. 1753:377, [Hort. Cliff.:158, Fl. Zeyl.:63.149, ms LINN], Burm.f. 1768 Fl. Ind.:96, Willd. 1799:519, Huth, De Wit 1956:208.
Taxonomic notes. The plate is very poor, identification is possible only through the description and Commelin's statement that he grew his plant from pods of the real *Cassia.*
The type of *Cassia fistula* is in Hermann's herbarium, BM (de Wit 1956:209).
Reede's plate, cited by Commelin with doubt, does represent *Cassia fistula.*
Distribution. Presently pantropical, originally tropical Asia?
Introduction. Paludanus in Linschoten Itinerario 1595, 6:100 described this species as *'Canna fistula'.*
Commelin grew his plant from seed, from a pod of the true *Cassia alexandrina.*
Specimen seen. No specimen seen by me shows the long pointed leaflets as the plant on the plate apparently representing a strongly developed coppice shoot. Jansen 4956 (WAG); Pawek 9356 (WAG).

Cassia javanica L., Sp. Pl.:379 (1753)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:217 t.111. *Cassia fistula javanica, flore carneo.*
Dutch: Javaansche Cassia fistula, met vleescouleurige bloemen.
Citations. *Cassia javanica* L. 1753:379, [ms LINN], Burm.f. 1768 Fl. Ind.:97, Lam. 1785:649, Willd. 1799: 527, Ait.f. 1811:30, Huth, De Wit 1956:214.
Cathartocarpus javanicus (L.) Persoon 1805:459 – Sweet 1818:92.
Taxonomic notes. Commelin's plate was designated as the lectotype of *Cassia javanica* L. by De Wit 1956: 215. The plate is the only available element if the specimen LINN 528.29 is excluded as belonging to *C. grandis* L.f. The specimen was added to the Linnean herbarium in 1775.
Distribution. S.E.Asia, Malaysia.
Introduction. Commelin received seeds in 1688 (from Java probably) sent by Cleyer, under the vernacular name Tang-woeli wangwang.

Breyne (1689) recorded the species, as *Cassia fistula Indica, flore carneo.*
Specimens seen. Bos 1981 (WAG); anon., Buitenzorg D21 (WAG); Junghuhn s.n. (L).

Cassia occidentalis L., Sp. Pl.:377 (1753)
Atlas. 1 t.13. *Senna Occidentalis, odore Opii Viroso Orobi Pannonici Foliis Mucronatis glabra.* Herm: Cat. (Hermann 1687:556).
Pajomirioba & Herba de Bidscho-Pisonis. (Piso 1658: 184 'Paiomirioba. Herva do Bicho').
Dutch: Slapertje.
Commelin. Hort. Amst. 1:51 t.26. *Senna Spuria Occidentalis, Odore Opii Viroso, Foliis Mucronatis, glabris.*
Pajomirioba Marcgravii Hist. Plant.
Dutch: Valsche West-Indische Senna met een Venynigen Reuk van Opium, en Gladde, Spits-toelopende Bladeren.
Artist. Jan Moninckx (1686-1690).
Citations. *Cassia occidentalis* L. 1753:377, [Hort. Cliff.: 159.7, ms LINN], Burm.f. 1768 Fl. Ind.:96, Miller 1768, Aublet 1775:381, Willd. 1799:518, Webb & Berth. 1842:120.
Taxonomic notes. Linnaeus gave a new nomen specificum legitimum and an elaborate observation for *C. occidentalis,* that must have been based on a specimen he had at hand.
LINN 528.13 was selected as lectotype by De Wit 1956: 257. This specimen however is marked 'Br' for Patrick Browne, whose collection was purchased by Linnaeus in 1758, so that De Wit's lectotypification must be rejected.
Two specimens are available in the Linnean herbarium in Stockholm. One specimen is from the Upsala garden, not cited in the protologue. The other is from the Clifford garden, but it is sterile so that it cannot have been the basis for Linnaeus' observation that mentions the flowers. However, it was designated as the type by Gordon-Gray 1977:85. A third specimen is in the Linnean collection in Helsinki, cf. Kukkonen & Viljamaa 1973:318.
This specimen was presented to Linnaeus by Burman most likely after 1753, it therefore does not qualify as a type.
Commelin's Plate 26 was cited by Linnaeus erroneously with the phrase-name of Hermann 1687:556. This name was cited once more, now correctly referred to Hermann, in the protologue of *Cassia hirsuta* L. 1753:378. I therefore prefer not to have Commelin's plate as the lectotype of *Cassia occidentalis.* In the absence of a suitable lectotype for *C.occidentalis* L., I propose to accept LINN 528.13, proposed as lectotype by De Wit, as the neotype. The more so since the specimen agrees well with Linnaeus' diagnosis, and most likely originates from Jamaica, the habitat cited by Linnaeus for his species.
Distribution. A circumtropical weed, possibly of S. American origin (De Wit l.c.).
Introduction. Commelin did not specify the source of his plant, he had it in cultivation for many years.
Specimens seen. Jansen 1791 (WAG); P.de Wilde 879 (WAG); W.de Wilde c.s. 8914 (WAG); Bleijendaal 392, culta (WAG).

Peltophorum acutifolium (Johnston) Johnston, Proc. Bost. Soc. Nat. Hist. 34:221 (1909)
Atlas. No water-colour present.
Commelin. 1:203 t.104. *Corallinum lignum* Par. Bat. Prod. (Hermann 1689:328) seu *Erythroxylum americananum, glyzyrrhizae folio, floribus ex luteo et rubro variegatis, siliqua latissima.*
Dutch: Coraal-hout.
Citations. *Peltophorum suringarii* Urban 1908:363 – Wein 1931:121.
Taxonomic notes. The plate is not very informative. It allows for an identification as 'Caesalpinoid', but that is about as far as one can go. If Commelin is correct in the origin of his plant ('Aruba'), Arnoldo's Zakflora van Aruba (1964:143) excludes every possibility but *P.suringarii.* This name is, however, antedated by *Caesalpinia acutifolium* Johnston (1905:686); type: Johnston 33 (GH). 'Curahout' is the vernacular name as given by Arnoldo, which might be the same as Commelin's 'Coraal-hout'.
Distribution. Margarita, Aruba and Curaçao (Stoffers 1973:60).
Introduction ante 1689. Commelin states the origin of his seed as 'Aruba'. He must have received it in 1687-88 as he stated he sowed it 'three years ago'. Commelin borrowed part of his name and description from Breyne 1689:53. Plukenet published an illustration, t.169 f.1, with Hermann's and Breyne's phrase-names.
Specimens seen. Miller & Johnston 200 (U); Van Koolwijk s.n. (U); Suringar s.n. (U).

CAMPANULACEAE

Campanula medium L., Sp. Pl.:167 (1753)
Atlas. 8 t.72. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Distribution. N. & C.Italy, S.E.France.
Introduction ca.1500. This species was taken into cultivation at an early date. Boom (1975:283) gives '± 1500, France'.

Lightfootia ? longifolia A.DC., Monogr. Camp.: 108 (1830)
Atlas. 8 t.54. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Distribution. S.W.Cape.

Lobelia erinus L., Sp. Pl.:932 (1753) [Pl.2]
Atlas. 1 t.10. *Campanula minor Africana, Erini facie,*

Flore violaceo, cauliculis erectis. Herm: Cat: Hort: Lugd: Bat: (Hermann 1687:110 t.111).
Dutch: Kleijne Africaanse Klokjes, met Vioolblaauwe Blommen, en rechtopstaande Steeltjes.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. *Lobelia erinus* L. was described based on material Linnaeus had at hand. There are, however, no specimens seen by Linnaeus in the relevant herbaria. Linnaeus cited Hermann's Plate 111 in the protologue. This plate does not represent the species in its current interpretation but shows *Monopsis simplex* (L.) Wimmer. Since the descriptive note for *L.erinus* made by Linnaeus does not fit Hermann's plate, the designation of Hermann's Plate as lectotype is untenable. Wimmer (1957:519) excluded Hermann t.111 from *L.erinus* without, however, designating a type for that name. Nevertheless in the index to Wimmer 1956 and 1957 Hermann's name is referred to *L.erinus.*
Commelin identified the plant drawn by Moninckx with Hermann's plant, he made the same error as Linnaeus some 45 years later. Actually Hermann's plant was cultivated in Amsterdam as *'Campanula Africana annua angusti-folia, Flore purpurascente',* drawn in vol.3 t.36 and published in Hort. Amst. 2 t.38, where Hermann's plant is discussed also.
The Moninckx water-colour proves that *Lobelia erinus* was in cultivation in Holland some decades before Linnaeus arrived there. It is illustrative of the plant Linnaeus described; it could serve as the neotype of *L.erinus* L., but a specimen collected by Burmeister in the Hortus at Leiden (SBT), could also serve as such. I refrain from a decision at this moment.
Another unpublished water-colour by Jan Moninckx of *L.erinus* is present in Atlas 8 t.47.
Distribution. Southern and tropical Africa.
Introduction ante 1690. Not later than 1690, when the first volume of the atlas was bound.
Specimens seen. Bayliss 5542 (WAG); Correia & Marques 1664 (WAG); Hutchinson 1467 (WAG); Wijnands 586, culta (WAG).

Microcodon hispidulum (L.f.) Sond., Fl. Cap. 3:565 (1865)

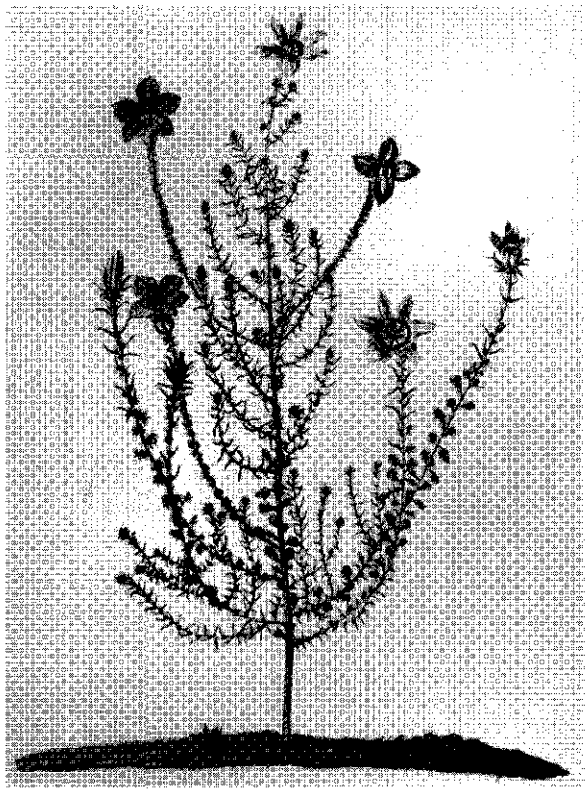
Atlas. 3 t.35, left. *Campanula Africana Hirsuta, parvo angustoque folio Flore pallido violaceo.*
Commelin. Hort. Amst. 2:73 t.37. Idem, *'pallide'* for *'pallido'.*
Artist. Jan Moninckx (1698).
Citations. *Campanula hispidula* L.f., Suppl. Pl. 1782: 142, Willd. 1798:906, Roem. & Schult. 1819.5:156, Sweet 1827:251, Loudon 1830:77.
Wahlenbergia hispidula (L.f.) A.DC. 1830:128 – Huth.
Wahlenbergia diffusa A.DC. 1830:137, 1839:426.
Taxonomic notes. *Campanula hispidula* L.f. is based on LINN 221.40, a specimen in the Sparrman-list of 1772. Commelin's plate is cited on the sheet.
Alphonse DeCandolle excluded Commelin's plate from this species and cited it for his *Wahlenbergia diffusa,* a species based on a cultivated plant from Kew in Bank's herbarium.
Presently this species is included in *Microcodon.* It was reduced to a variety of *M.lineare* by Sonder.
The genus *Microcodon* is in need of a revision. My identification is provisional; it is based mainly on the good match to the Thunberg specimen (UPS).
Distribution. South Africa: S.W.Cape.
Introduction 1698. Commelin received seeds of this annual species from 'Africa' that is the Cape, in 1698. No earlier record of the species is known. It is not in cultivation at present.
Specimens seen. LINN 221.40; Thunb. s.n. (UPS-Thunb. 4652); Andreae 662 (PRE); Bolus s.n. (PRE 13606); Van Royen s.n. (L 898357-29).

Monopsis simplex (L.) Wimmer, Ann. Naturh. Mus. Wien 56:370 (1948) [Pl.21]

Atlas. 3 t.36. *Campanula Africana Annua angusti-folia, Flore purpurascente, major. Eadem Flore purpurascente, minor.*
Commelin. Hort. Amst. 2:75 t.38. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Monopsis speculum* (Andr.) A.DC., Prodr. 1839,7:351, 'figura ad dextra?'.
Monopsis simplex (L.) Wimmer var. *conspicua* (Salisb.) Wimmer 1948:370 – Wimmer 1957:701.
Taxonomic notes. The two plants shown on the plate belong to the same species. Wimmer's var. *conspicua* contains the larger plant, but as he writes that intermediate forms occur, I doubt the validity of this variety. Commelin differentiates his plants from those pictured by Hermann (1687 t.109 & t.111). Hermann's t.109 represents *Grammatotheca erinoides* (L.) Sonder, t.111 is *Monopsis simplex.*
The confusion between *Monopsis simplex* and *Lobelia erinus* L. is discussed under the latter species.
The basionym *Lobelia simplex* L., Mant. Alt. 291 (1771) has a voucher in LINN 1051.1.
Andrews, Bot. Rep. t.644, 1812, described the plant independently as *Lobelia speculum.*
Introduction. Commelin does not give the origin of his plant. He might have grown it from seed, but did not get it from Hermann's plants.
Specimens seen. LINN 1051.1; Bos 661 (WAG); Lewis Grant 4998 (WAG); Coppejans 444 (WAG); Van Royen s.n. (L 898358-153).
Icones. Mason 1972:t.76.5.

Roella ciliata L., Sp. Pl.:170 (1753)

Atlas. 3 t.37. *Campanula Africana frutescens aculeosa, Flore violaceo.*
Aculeosa Mauritanica, ericae foliis, hirsutis, rigidis infesto mucrone pungentibus, Flore amplo tetrapetalo, colore lurido, unguiculis magnis, atro purpureis. Plucke-

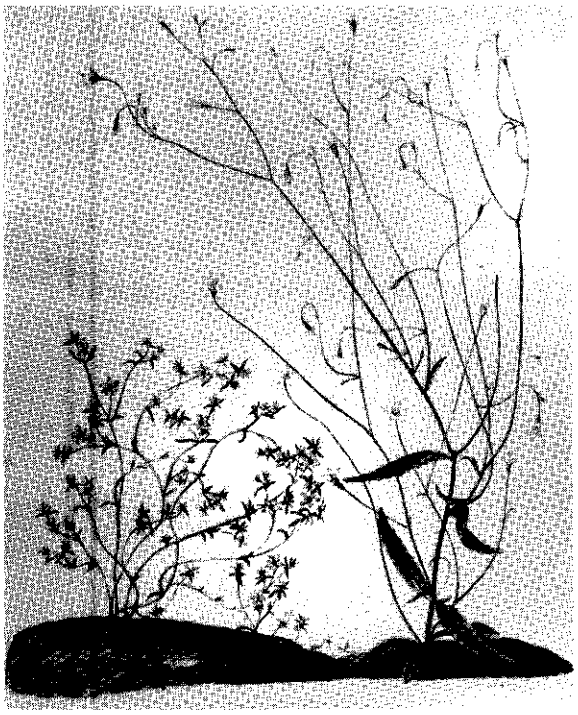


Roella ciliata. Atlas 3 t.37

netii Phytographiae Tabula CCLII (Plukenet 1692 t.252 f.4).
Commelin. Hort. Amst. 2:77 t.39. Idem, added: *Campanula Capitis Bonae Spei foliis reticulatis spinosis* (Petiver 1695-1703:t.157).
Artist. Jan Moninckx (1699-1700).
Citations. *Roella ciliata* L. 1753:170 ('t.30'), [Hort. Cliff.:492, ms LINN], Bergius 1767:41, Burm.f. 1768 P.F.C.:5, Willd. 1797:918, A.DC. 1830:173 and 1839: 446, Huth.
Taxonomic notes. *Roella ciliata* is not represented in the Clifford herbarium. Ehret's drawing (t.35 in the Hortus Cliffortianus) is a suitable lectotype. There is a good specimen in LINN 222.1, but it is not annotated with the number '1' of the species in Sp. Pl. Adamson (1951:132), may have referred to this specimen: 'The type is in herb. LINN'. All information in the nomen specificum legitimum can be derived from Ehret's drawing, the basis of Wandelaar's engraving. Petiver's name that Commelin cited is in the protologue of *Roella reticulata* L.
Distribution. South Africa.
Introduction ante 1692. Commelin received seed from the Cape in 1698 and 1699. Plukenet published an illustration in 1692.
Specimens seen. LINN 222.1; Bos 139 (WAG); Lewis Grant 2627 (WAG); Salter 8710 (BOL); Esterhuysen 15191 (BOL); Van Royen s.n. (L 898359-445).

Wahlenbergia capensis (L.) A.DC. Monogr. Camp.: 136 (1830) [Pl.20]
Atlas. 3 t.34. *Campanula Africana annua hirsuta, latis serratisque foliis, Flore magno violaceo.*
Commelin. Hort. Amst. 2:69 t.35. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Campanula capensis* L. 1753:169, Willd. 1798:915.
Wahlenbergia capensis (L.) A.DC. 1830:136, 1839:426, Huth.
Taxonomic notes. The Linnean Herbarium has two sheets of this species, LINN 221.74 & 75; no.74 is a good match with Commelin's plate. The sheets are not annotated with '32', the number of the name in Sp. Pl., so that there is no proof that Linnaeus had the specimens in hand before 1753. Commelin's plate, the only other available element, is proposed here as the type. Linnaeus' *'capsulis strigosis'* is a new element in his nomen specificum legitimum, but it can have been derived from the ovaries as depicted on the plate. The Linnean specimens have no fruits. All of the protologue may well have been digested from Commelin's plate and text alone.
Distribution. South Africa: Cape Province.
Introduction ante 1700. Commelin does not give any information regarding the source of his plant. No earlier record of this species is known to me.
It is scarcely cultivated at present.
Specimens seen. LINN 221.74 *'capensis'*; Hall 3812 (PRE); Van Breda 1270 (PRE); Galpin 4312 (PRE); Adamson 680 (PRE); Pillans 8631 (BOL).
Icones. Mason 1972 t.76.4.

Wahlenbergia cernua (Thunb.) A.DC., Monogr. Camp.:148 (1830)
Atlas. 3 t.35, right. *Campanula Africana Annua glabra, serrato folio, Flore pallido.*
Commelin. Hort. Amst. 2:71 t.36. Idem.
Artist. Jan Moninckx (1698).
Citations. *Wahlenbergia cernua* (Thunb.) A.DC. 1830: 148 'ic.pessim.' 1839:435 '?'.
Taxonomic notes. This plate has hardly been cited in the literature. Linnaeus nor Huth gave an interpretation of it. Probably it represents *Wahlenbergia cernua,* based on *Campanula cernua* Thunb. A type of this name has not been designated as far as I know. Thunberg s.n., C.B.S. (UPS-Thunb. 4624) the right hand specimen, is a suitable lectotype.
Thunberg published a drawing of this specimen in Mém. de l'Academie Impériale des Sciences de St Petersbourg 1813,4:364-375 t.7.
I acknowledge Dr Mats Thulin for his co-operation in the identification and typification.
Distribution. South Africa: S.W.Cape, also listed by Ross for the Flora of Natal.
Introduction 1698. No earlier record of the species is known. Commelin had seeds from the Cape in 1698.
It is not in cultivation at present.



Wahlenbergia cernua, Microcodon hispidulum. Atlas 3 t.35

Specimens seen. Thunberg s.n. (UPS); Ecklon & Zeyher 2372 (SAM); Esterhuysen 5 (PRE); Gillet 3589 (PRE); Leighton 732 (BOL); Salter 8920 (BOL).

CAPPARACEAE

Crateva tapia L., Sp. Pl.:444 (1753)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:129 t.67. *Malus americana trifolia, fructu pomi aurantii instar colorato.*
Arach-simmeron vulgo.
Dutch: Driebladerige americaansche appel-boom, met oranje verwige vrugten.
Citations. *Crateva tapia* L. 1753:444 – not cited in the protologue – 1762:637, [ms LINN], Burm.f. 1768 Fl. Ind.: 109, Willd. 1799:852, Ait.f. 1811:145, Sweet 1818:105, Loudon 1830:188, Huth.
Taxonomic notes. Jacobs (1964:178, 189) amply discussed the problems in the typification of *Crateva tapia.* As type he designated Plumier, Nova Pl. Amer. Gen. 1703:22 t.21. *C.tapia* is the only species of this genus in America recognised by Jacobs.
Distribution. Tropical America.
Introduction ante 1690. The editors Kiggelaer & Ruysch comment that plants of this species had been received from Aruba. It is not clear whether the plant shown had this origin. Commelin gives the American mainland and the islands of the coast as distribution. Kiggelaer (1690:10) lists the species for the Hortus Beaumontianus.
Specimens seen. LINN 619.1, type of *C.gynandra* L.; Breteler 4366 (WAG); Croat 19865 (WAG); Lanjouw & Lindeman 1132 (U).

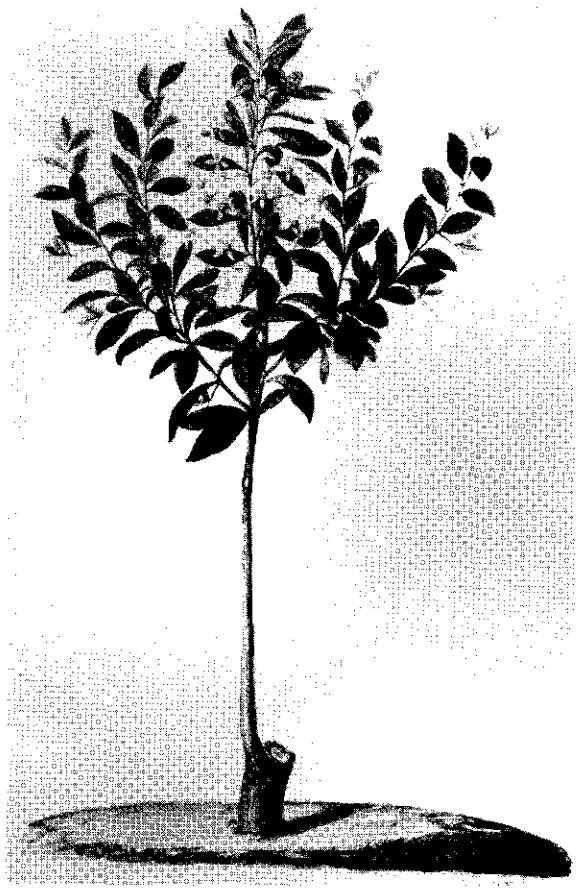
CAPRIFOLIACEAE

Lonicera sempervirens L., Sp. Pl.:173 (1753)
Atlas. 1 t.15. *Periclymenum Perfoliatum Virginianum, semper virens & florens* Herm. (Hermann 1687:484 t.485).
Dutch: Virginiaans Geijte-bladt, met Bladeren van Deurwasch, en roode Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Hermann's name, cited in the atlas, is cited in the protologue of *L.sempervirens.* A new nomen specificum legitimum is provided for this species in Sp. Pl. and the specimen LINN 235.3 from the Hortus in Uppsala is not annotated with the number '2' of the species in Sp. Pl. No specimen is available in H.S.C. nor in herb. Van Royen (L.). Therefore Hermann's plate is proposed here as lectotype.
Distribution. Central and Eastern N.America.
Introduction. Boom (1981:409) gives 1656 as year of introduction in England.
Specimens seen. Springer s.n., culta (WAG); Ruisch s.n., culta (WAG).

CELASTRACEAE

Euonymus americana L., Sp. Pl.:197 (1753)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:157 t.81. *Rhus virginianum foliis myrti.*
Dutch: Virginiaanse smak met myrtus bladeren.
Citations. *Euonymus americana* L. 1753:197, [Hort. Cliff.:32.3, ms LINN, Ray 1704:57], Lam. 1788:573, Willd. 1797:1132, Huth.
Taxonomic notes. Linnaeus provided a nomen specificum legitimum in Sp. Pl. for *Euonymus americana* that differs from the phrase-name in Hort. Cliff. '2 *americana* K' LINN 269.3, received from Kalm, is proposed here as lectotype; an isolectotype is in herb. Kalm (UPS).
Distribution. E.North America.
Introduction ante 1690. Commelin received his plant from Bishop Henry Compton of London. It is not impossible that *Rhus Virginianum lentisci folio,* recorded from the bishop's garden by Ray (1688:1799) is *Euonymus americana,* but Wein (1931:97) identified it as *Rhus copallina.*
Specimens seen. Kalm s.n. (LINN 269.3, UPS); Staufer c.s. 5943 (WAG).

Maytenus acuminatus (L.f.) Loes. in Engler & Prantl, Nat. Pflanzenfam. ed.2, 206:138 (1942)
Atlas. 2 t.26. *Sideroxylon Africanum Cerasi folio.*
Dutch: Africaans Yserhout, met Kersse Bladeren.



Putterlickia pyracantha. Atlas 8 t.19

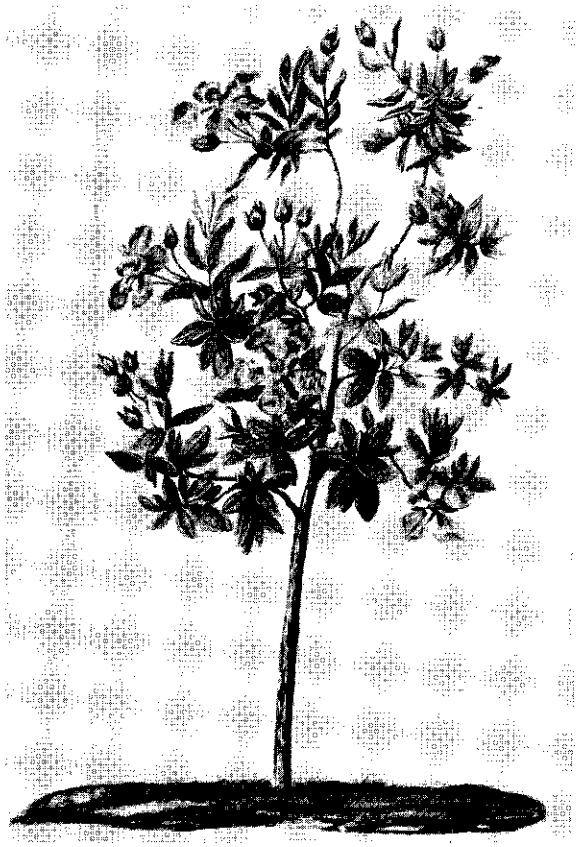
Commelin. Hort. Amst. 1:197 t.101. Idem.
Artist. Jan Moninckx (1686–1690).
Citations. No interpretation of this plate is known to me.
Taxonomic notes. This plate is not easy to identify. I feel confident about *Maytenus,* but it might be also *M. undatus* (Thunb.) Blakelock. The crenate leaves with an entire basal part are also shown in a much better drawing in Claudius' Icones Plantarum et Animalium, reproduced in Palmer & Pitman 2:1284 (1972). The basionym is *Celastrus acuminatus* L.f. 1782:154, based on Thunberg s.n. (UPS – Thunb.!), labelled as the type by Wilczek.
Note on the plate. The published engraving differs completely from the water-colour, but they represent the same species.
Distribution. From South Africa to tropical east Africa.
Introduction ante 1690. From the Cape Commelin received a young plant from Simon van der Stel. *Lignum ferrea duritiae folio oblongo* Hermann (1689:375) might be the same species.
Specimens seen. Burchell 6811 (K); Williams 2302 (K); Bayliss 525 & 473 (WAG); Thunb. s.n. (UPS – Thunb. 5582).

Putterlickia pyracantha (L.) Szyszyl., Polypet. Disc. Rehm.:36 (1888).
Atlas. No water-colour present; see note.
Commelin. Hort. Amst. 1:163 t.84. *Lycium aethiopicum, Pyracanthae folio.*
Dutch: Moorelands Lycium, met bladeren van Pyracantha.
Citations. *Celastrus pyracanthus* L. 1753:197, [Hort. Cliff.:72, Boerhaave 1719,2:212.11 and 237.3], Miller 1768, Sims in Bot. Mag. 1809 t.1167 – Huth.
Taxonomic notes. Linnaeus added a long observation in the protologue of *Celastrus pyracanthus.* The specimen he had before him probably was LINN 268.6 '5 *Pyracanthus*'. The epithet is derived from Commelin's phrase.
Distribution. South Africa.
Introduction ante 1690. Seeds were received from the Cape, no year is given. Commelin had no flowers, but after 1692 it must have flowered as the editors describe them and depict both flowers and fruits. Sims (l.c.) notes 'the Chelsea Garden was probably supplied with it from Amsterdam'.
Specimens seen. H.S.C. 72 (BM); LINN 268.6, lectotype; '*Celastrus* 5 *Pyracanthus*', iso-lectotype? (S-Linn); Bos 1403 (WAG); Wijnands 922 (WAG).
Note. A water-colour of *Putterlickia pyracantha* is present in Atlas 8 t.19, drawn by Jan Moninckx. It shows the plant in flower; probably it served for the illustration of the detached flowering branch in plate 84.

CISTACEAE

Cistus albidus L., Sp. Pl.:524 (1753)
Atlas. 2 t.46. *Cistus Mas Angusti-folius.* B: Pin: 464 (Bauhin 1623:464).
Cistus Mas secunda. Clus: Hist. 69 (Clusius 1601:69, '*secundus*').
Dutch: Tweede Cistus-Manneke.
Commelin. Not published in Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Both Bauhin's and Clusius' names are cited in the protologue of *Cistus incanus* L., Sp. Pl. 1753:524.
Distribution. Mediterranean area from Sardinia westwards, Portugal.
Introduction (ante) 1640. Cultivated in 1640 (Chittenden 1951:491).
Specimens seen. Touw 122 (WAG); Bourgeau 429 (WAG).

Cistus crispus L., Sp. Pl.:524 (1753)
Atlas. 2 t.47. *Cistus Mas folio rotundo Hirsutissimo* B: Pin: 464 (Bauhin 1623:464).
Cistus Mas quartus. Clus: Hist: 69 (Clusius 1601:69).
Dutch: Cistus-Manneke, met ronde ruijge Bladeren.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic note. Bauhin's name was cited by Linnaeus in the protologue of *Cistus villosus.*



Cistus albidus. Atlas 2 t.46

Distribution. Mediterranean area from Sicily westwards, Portugal.
Introduction (ante) 1656. Cultivated in 1656 (Chittenden 1951:491).
Specimens seen. Bourgeau 1577 (WAG); Touw 523 (WAG).

Cistus incanus L. **ssp. incanus**, Sp. Pl.:524 (1753)
Atlas. 2 t.45. *Cistus Mas folio Oblongo incano* B: Pin: 464 (Bauhin 1623:464).
Cistus Mas prima. Clus: Histor: 68 (Clusius 1601:68 *'Primus Cistus mas'*).
Dutch: Cistus-Manneke.
Commelin. Not published in Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Both Bauhin's and Clusius' names are cited in the protologue of *Cistus albidus* L., Sp. Pl. 1753:524.
This species is also known as *C.villosus* L. and as *C.creticus* L.
Distribution. Mediterranean area from Corsica eastwards till the Krym.
Introduction (ante) 1650. Cultivated in 1650 (Chittenden 1951:493 as *C.villosus*).
Specimens seen. Hennipman et al. 1180 (WAG); Segal 287 (WAG).

Cistus ladanifer L., Sp. Pl.:523 (1753) [Pl.11]
Atlas. 2 t.41. *Cistus Ledon Flore macula nigricante notato.* J. Bauh: Tom: 2. Lib: XIII.8 (Bauhin 1651,2: 8).
Cistus ladanifera Hispanica B: Pin: 467. (Bauhin 1623: 467 'C.L.H. *incana*').
Dutch: Cistus Ledon, wiens Bloem met een swarte vlak geteijckent is.
Commelin. Hort. Amst. 1:39 t.20. Idem, without the reference to the Pinax.
Artist. Jan Moninckx (1686-1690).
Citations. *Cistus ladaniferus* L. β, Sp. Pl. ed.2, 1763: 737, [ms LINN *'ladanifera'*].
Cistus ladaniferus L. var. *maculatus* Dunal – Desfontaines 1798:409, Huth.
Taxonomic note. The form with blotched petals is the type variety.
Distribution. Mediterranean area from France westwards.
Introduction (ante) 1629. Cultivated in 1629 (Chittenden 1951:492). As this plate was included in Hort. Amst. 1, I suppose the water-colour was done not later than 1690. For the unpublished ones I accept the same.
Specimens seen. Bourgeau 1780 (WAG); Burgers 223 (WAG).

Cistus ladanifer L., Sp. Pl.:523 (1753)
Atlas. 2 t.42. *Cistus Ledon Flore emaculati coloris.*
Herm. Cat:151 (Hermann 1687:151, 'candoris' for coloris).
Dutch: Cistus Ledon, met een witte onbevleckte Coleurige Blom.
Commelin. Not published in Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic note. The white flowered form without a blotch on the petals is known as var. *albiflorus* (Dunal) Dansereau.
Distribution. As the typical form, more common.
Introduction 1687. Not known before Hermann's publication of 1687. Breyne (1689:55) wrote that several species of *Cistus* were grown from seed in the Hortus of Amsterdam. This note could apply to any of the *Cistus* species in the atlas.
Specimens seen. Bourgeau 46 (WAG); Burgers 61 (WAG).

Cistus monspeliensis L., Sp. Pl.:524 (1753)
Atlas. 2 t.43. *Cistus Ledon Hirsutum* B: Pin: 467 (Bauhin 1623:467).
Ledon quartum. Clus: Hist: 79 (Clusius 1601:79).
Dutch: Cistus Ledon, met ruijge Bladeren.
Commelin. Not published in Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Neither Bauhin's nor Clusius' name was cited by Linnaeus. Although only three sepals are visible on the plate, I consider it to represent *C.monspeliensis* which has five sepals.
Distribution. Mediterranean area.
Introduction (ante) 1656. Cultivated in 1656 according to Chittenden 1951:492.

Specimens seen. Dorgelo & De Wilde s.n. (WAG); Petter 99 (WAG); Touw 533 (WAG).

Cistus monspeliensis L., Sp. Pl.:524 (1753)
Atlas. 2 t.44. *Cistus Ledon foliis Rorismarini Hispidis*
B: Pin: 467 (Bauhin 1623:467).
Ledon septimum Clus: Histor: 80 (Clusius 1601:80).
Dutch: Cistus Ledon, met ruijge Roosemarijn blad.
Commelin. Not published in Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Neither Bauhin's nor Clusius' name was cited by Linnaeus.

Halimium alyssoides (Lam.) K.Koch, Hort. Dendrol.:32 (1853)
Atlas. 2 t.48. *Cistus Faemina portulaceae Marinae folio latiore, obtuso* B: Pin: 464 (Bauhin 1623:465).
Cistus folio Halimi prima. Clus: Histor: 71 (Clusius 1601:71).
Dutch: Cistus met bladeren van Zee-porceleyn.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Bauhin's and Clusius' names are cited in the protologue of *Cistus halimifolius* L. 1753:524. *Halimium halimifolium* (L.) Willk. & Lange is a species with five sepals, Moninckx's plate shows a plant with three sepals. The best match is with *H.alyssoides* as treated by Proctor and Heywood in Flora Europaea 2: 284 (1968).
Distribution. W.France, W.Spain and N.Portugal.

COMBRETACEAE

Conocarpus erecta L., Sp. Pl.:176 (1753)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:115 t.60. *Manghala arbor Curassavica, foliis salignis* Par. Bat. Prod. (Hermann 1689:351).
Dutch: Curassausche manghala-boom, met bladeren gelyk die van willige.
Citations. *Conocarpus erectus* L. 1753:176 – not cited in the protologue – Linn. 1762:1679 '?', [ms LINN], Huth.
Taxonomic notes. LINN 237.1 is not annotated with the number of the species in Sp. Pl. and does not qualify for typification. No specimen is available in the Clifford herbarium. From the other elements in the protologue I select Sloane 1725 t.161 f.2 as lectotype as it is the best illustration. I have found no typotype in Herb. Sloane. Stearn (1958:36) gave Jamaica as restricted type-locality.
The rather ill-drawn fruits are the only clue to the identity of this plate.
Distribution. Trop. America, W.Indies, W.Trop. Africa.
Introduction ca.1686. Commelin had the drawing made in 1690 or 1691, I suppose from a four year old specimen, received from Curaçao.
Specimens seen. LINN 237.1; Wilson 7526 (K); Philcox c.s. 74460 (K); Boldingh 2515 (U); De Wit 9108 (WAG); Sterringa 12426 (WAG); P.de Wilde 123, Curaçao (WAG).

COMMELINACEAE

Cyanotis cristata (L.) Sweet, Hort. Brit.:430 (1827)
Atlas. 8 t.45. No name.
Commelin. Not published by Commelin.
Artist. Alida Withoos (1694).
Taxonomic notes. *Commelina cristata* L. 1753:42 is based on material collected by Hermann in Ceylon. The combination *C.cristata* is commonly attributed to D.Don 1825:46. Don stated here that *Tradescantia cristata* belongs to the genus *Cyanotis*, but he did not make the combination. Dr Robert Faden kindly identified this water-colour.
Distribution. Islands in the Indian Ocean, Ceylon, S. India, S.E.Asia.
Introduction ante 1695. The first illustration of *Cyanotis cristata* was published by Reede (7 t.58, 1688). Hermann (1698:148) had the plant in cultivation at Leiden and may have introduced it from Ceylon, where he collected it (Hermann 1717:53 'Bolhida').
Specimens seen. Jeswiet 662 (WAG); Rappard 158 (WAG); A.van Royen s.n. (L 899258-655); J.J.de Wilde 4621 (WAG).

COMPOSITAE

Arctotheca calendula (L.) Levyns, Journ. S.Afr. Bot. 8:284 (1942)
Atlas. 7 t.1. *Anemospermos Africana jacobaeae maritimae foliis, flore sulphureo.*
Commelin. Rar. & Exot.:36 t.36. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Arctotis calendula* L. 1753:922, [Hort. Cliff.: 412.1, V.Royen:178, ms LINN], Burm.f. 1768 P.F.C.: 28, Miller 1768.
Arctotis tristis L. 1753:922 – Bergius 1767:320.
Arctotis calendulacea L. γ *tristis* (L.) Persoon 1797: 833.
Cryptostemma calendulaceum (L.) R.Br. β *lyratum* – Huth.
Taxonomic notes. *Arctotis calendula* has a new nomen specificum legitimum in Sp. Pl., therefore LINN 1036.7 '2 *calendula*' is proposed as the lectotype.
No specimen is found in H.S.C. that vouches for Hort. Cliff. 412.1, but another Clifford specimen linked to *Arctotis calendulacea* L. β, is very much like Commelin's plate.
Arctotis tristis L. is a synonym of *A.calendula.* There is a specimen in the Bergius herbarium (SBT), annotated '*tristis*' in a handwriting that probably is Linnaeus'.
Cryptostemma calendulacea (L.) R.Br. is a synonym of *A.calendula.*

Arctotis acaulis. Atlas 6 t.50

Distribution. South Africa, at present widely naturalised.
Introduction ante 1705. Commelin did not specify the source of his plant. The species is common in cultivation at present.
Specimens seen. LINN 1036.7; H.S.C. 412 (BM); Acocks 1457 (S); Bos 715 (WAG); Ecklon 228 (S).

Arctotis acaulis L., Sp. Pl. ed.2:1306 (1763)

Atlas. 6 t.50. *Anemospermos Africana foliis plantaginis flore sulphureo.*
Commelin. Rar. & Exot.:35 t.35. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Arctotis acaulis* L. 1763:1306, Burm.f. 1768 P.F.C.:28, Miller 1768, Lam. 1783:236, Willd. 1803: 2349, Huth.
Taxonomic notes. No specimen of *Arctotis acaulis* is present at LINN. Commelin's plate is the only other element in the protologue, all information in the diagnosis can be gleaned from Commelin's plate and text. I therefore propose Commelin's Plate 35 as the lectotype.
Distribution. South Africa: S.W.Cape.
Introduction ante 1705. Commelin did not mention the source of his plant. He provided the first record of the species in cultivation. At present this species is uncommon in cultivation in Europe.
Specimens seen. Bos 326 (WAG); Thunb. s.n., type of *Arctotis scapigera* Thunb. (UPS); Davis (SAM-60359).

Arctotis aspera L., Sp. Pl.:922 (1753)

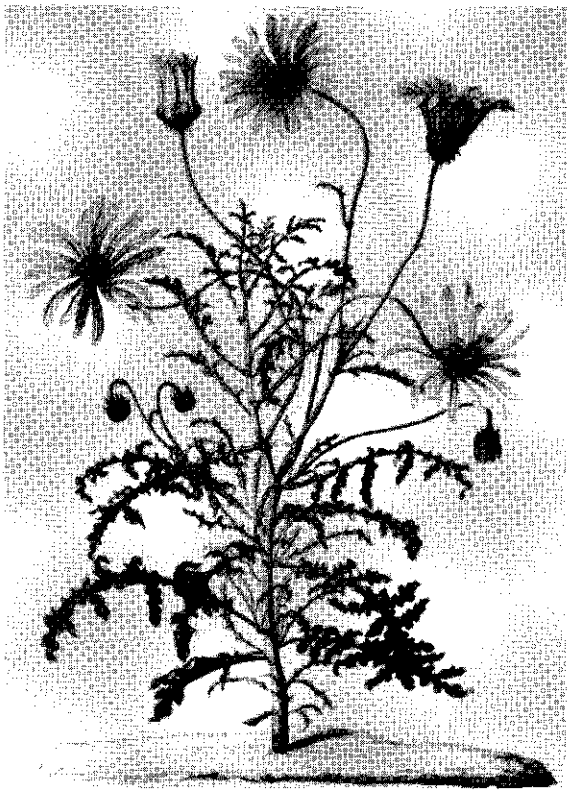
Atlas. 3 t.21. *Anemospermos Africana Foliis Cardui Benedicti, Florum radiis intus Sulphureis.*
Commelin. Hort. Amst. 2:43 t.22. Idem.

Arctotis aspera. Atlas 3 t.22

Artist. Not signed (1686-1700).
Citations. *Arctotis aspera* L. 1753:922,[Hort. Cliff.: 412.3, V.Royen:178, ms LINN, Boerhaave 1719,1: 100.2, Tilli 1723:13, Burman 1738:167], Burm.f. 1768 P.F.C.:28, Lam. 1783:237, Willd. 1803:2356, Ait.f. 1813:173 'α', Huth.
Taxonomic notes. Commelin's plate shows leaves less dissected than commonly seen in specimens of *Arctotis aspera.* Lamarck (l.c.) wrote 'La figure qu'en a donné Commelin, ne rend que médiocrement la forme véritable des feuilles'. Nevertheless I think that it represents the species.
The present monographer of *Arctotis,* Professor T.Norlindh, advised me to consider LINN 1036.10 as the lectotype.
Distribution. South Africa: S.W.Cape.
Introduction. Commelin did not specify the source of his plant.
Specimens seen. H.S.C. 412.3 (BM); LINN 1036.10; Burmeister ex Horto Leidense (SBT).

Arctotis aspera L., Sp. Pl.:922 (1753)

Atlas. 3 t.22. *Anemospermos Africana foliis Cardui Benedicti, Florum radiis intus albicantibus.*
Commelin. Hort. Amst. 2:45 t.23. Idem.
Artist. Jan Moninckx (1699-1700).

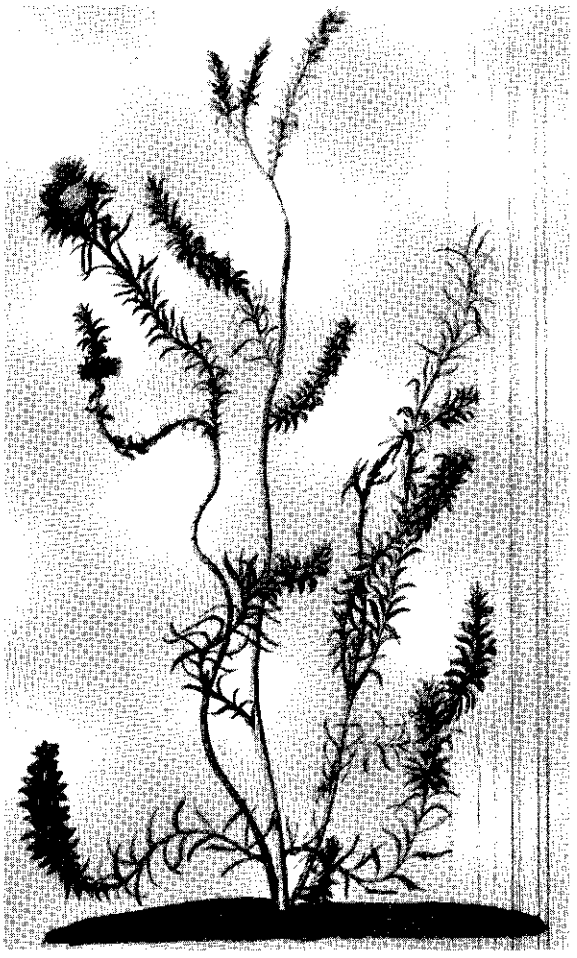


Arctotis revoluta. Atlas 8 t.68

Citations. *Arctotis aspera* L. 1753:922 – not cited in the protologue – [Hort. Cliff.:412.3 β, ms LINN], Miller 1768, Huth.
Arctotis carduifolia Burm.f. 1768 P.F.C.:28.
Taxonomic notes. *Arctotis carduifolia* Burm.f. is represented by one specimen in the Burman herbarium (G). It is written up with Commelin's polynominal. Norlindh (unpublished) labelled it as the type of *Arctotis carduifolia* Burm.f. This name is synonymous with *A.aspera* L.
Distribution. South Africa: S.W.Cape.
Introduction 1698. Commelin's plant was grown from seed received from 'Africa' (the Cape) in 1698.
Specimens seen. H.S.C. 412.3 (BM); Herb. Burman, lectotype of *Arctotis carduifolia* (G).

Arctotis revoluta Jacq., Hort. Schoenbrun 2:24 t.173 ('1797')

Atlas. 8 t.68. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. The involucral bracts, the inner with a scarious margin, the outer reflexed, point to *Arctotis.* The crispate leaves are characteristic of *A.revoluta.* Professor T.Norlindh, the present monographer of *Arctotis,* gave me as his opinion that *A.revoluta* should be reduced to an infraspecific rank under *A.aspera* L.
Distribution. South Africa: S.W.Cape.

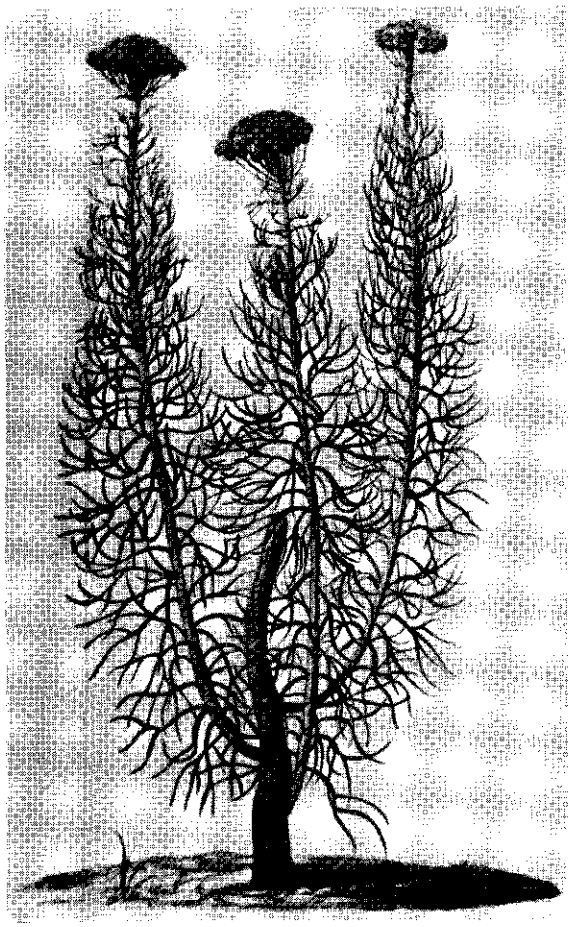


Athanasia capitata. Atlas 3 t.44

Introduction ante 1706. No earlier record of *A.revoluta* is known to me.
Specimen seen. Lewis 3808 (SAM).
Icones. Mason 1972 t.78 f.3.

Athanasia capitata (L.) L., Sp. Pl. ed.2:1181 (1763)

Atlas. 3 t.44. *Coma aurea Africana fruticans Linariae foliis glaucis & lanuginosis.*
Commelin. Hort. Amst. 2:91 t.46. Idem.
Artist. Jan Moninckx (1696-1700).
Citations. *Athanasia lanuginosa* Cav., Icones 1:2 t.3 '?' (1791).
Holophyllum lanuginosum (Cav.) DC. 1837:86, Huth.
Pre-Linnean: Ray 1704:174.
Taxonomic notes. *Holophyllum lanuginosum* (Cav.) DC. is a synonym of *Athanasia capitata* (L.) L. fide Harvey in Harvey & Sonder 1865:191. The type of *Holophyllum* Lessing 1832 is *H.capitatum* (L.) Lessing. Commelin's plate is a fair match to Table 3 of Cavanilles. Also LINN 986.3 '*capitata*' agrees well with Commelin's illustration.



Athanasia crithmifolia. Atlas 3 t.48

The basionym *Santolina capitata* L., Pl. Rar. Afr.:18 (1760), is typified by a specimen in herb. Burman (G). Dr Kåre Bremer confirmed the identification.
Distribution. South Africa: S.W.Cape.
Introduction 1696. Commelin received his plant in 1696 from W.A.van der Stel.
Breyne (1678 t.78) published an earlier illustration.
At present this species is not in cultivation.
Specimens seen. LINN 986.3; Bolus 3375 (BOL); herb. Burman, three specimens, one labelled as the lectotype (G); MacOwan 1893 (SAM, G-DC); Pappe s.n. (SAM 16917); Smith 4810 (PRE); herb. Ventenat (G); Wall s.n. (S).

Athanasia crithmifolia (L.) L., Sp. Pl. ed.2:1118 (1763)

Atlas. 3 t.48. *Coma aurea Africana fruticans foliis Crithmi marini.*
Commelin. Hort. Amst. 2:99 t.50. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Santolina crithmifolia* L. 1753:843, [Hort. Cliff.:397.3 β, Hort. Ups.:25.2, ms LINN, Boerhaave 1719,1:122.3, Pontedera 1720:176, Vaillant 1721:313, Tilli 1723:44].
Athanasia crithmifolia (L.) L. 1763:1118, Burm.f. 1768 P.F.C.:24, Lam. 1783:327, Ait.f. 1812:521, Sweet 1818:183, Salm-Dyck 1834:37, DC. 1837:89, Huth.
Taxonomic notes. The nomen specificum legitimum for *Santolina crithmifolia* is cited in an amended form from Hort. Cliff.: 397.3 and Hort. Ups.: 25.2. The specimen '7 *crithmifolia*' LINN 986.16 is proposed as lectotype by Bremer & Wijnands (1982). *Athanasia crithmifolia* (L.) L. is the lectotype of the genus *Athanasia* L.
Distribution. South Africa: S.W.Cape.
Introduction ante 1696. Commelin did not specify the source of his plant. Plukenet figured the species in 1696 t.302 f.7.
Specimens seen. LINN 986.15 '7 *crithmifolia*', lectotype; '*Santolina* 7', paratype (S-Linn); H.S.C. 397.3, paratype (BM); Bayliss 6172 (WAG); Drège s.n. (SAM-16927); Werdermann et Oberdieck 113 (K); Wijnands 908 (WAG); Van Royen s.n. (L 9001436).

Athanasia dentata (L.) L., Sp. Pl. ed.2:1181 (1763)

Atlas. 7 t.6. *Coma aurea Africana fruticans foliis inferioribus incisis, superioribus dentatis.*
Commelin. Rar. & Exot.:41 t.41. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Santolina dentata* L. 1753:843, [Hort. Cliff.: 398.5, V.Royen:147.5, ms LINN, Tilli 1723:5, Boerhaave 1719,1:125].
Athanasia dentata (L.) L. 1763:1181, Burm.f. 1768 P.F.C.:24, Miller 1768, Lam. 1783:328, Willd. 1803: 1805, Ait.f. 1812:520, Sweet 1818:183.
Morysia dentata (L.) DC. 1837:91, Huth.
Taxonomic notes. *Santolina dentata* L. is based on Hort. Cliff.:398.5, the corresponding specimen in H.S.C. is proposed as lectotype.
Morysia diversifolia Cass. is a superfluous name based on the same type.
Distribution. South Africa: S.W.Cape.
Introduction ante 1705. Commelin gives no information on the source of his plant. I do not know of an earlier record of this species; at present it is not in cultivation.
Specimens seen. H.S.C. 398.5, lectotype (BM); Bos 781 (WAG); Olivier 1496 (WAG); Fries c.s. 97 (WAG); Hutchinson 3171 (K); Drège s.n. (SAM 16984); cultivated specimen from Hortus Upsaliensis (S-Linn); Wijnands 896 (WAG).

Athanasia parviflora L. (ed. Murray), Syst. Veg. ed.13:617 (1774)

Atlas. 4 t.5. *Elichrysum Africanum frutescens foliis Crithmi marini.*
Commelin. Hort. Amst. 2:113 t.57. Idem.
Artist. Not signed (1686-1700).
Citations. *Tanacetum crithmifolium* L., 1753:843,

[Hort. Cliff.: 397.4, V.Royen:146, ms LINN, Boerhaave 1719,1:121.17], Bergius 1767:240 'Bona nisi nimis grandis', Burm.f. 1768 P.F.C.:24, Miller 1768. *Athanasia parviflora* L. 1774:617 – Lam. 1783:327. *Hymenolepis parviflora* (L.) DC. 1837:85, Huth.

Taxonomic notes. *Tanacetum crithmifolium* has a new nomen specificum legitimum in Sp. Pl. The type is LINN 986.17 '*Tanacetum* 1 *crithmifolium*', annotated *A[thanasia] parviflora* by J.E.Smith.

Athanasia parviflora L. is a nomen novum for *Tanacetum crithmifolium*, the epithet being occupied in *Athanasia* by *A.crithmifolia* (L.) L. 1763, based on *Santolina crithmifolia* L. 1753:843. In Mant. alt. 464 (1771) Linnaeus already noted that *T.crithmifolium* is an *Athanasia*, but he did not make a combination or publish a nomen novum for it.

Distribution. South Africa: S.W.Cape.

Introduction ante 1700. Commelin does not mention the source of his plant. It must have been in cultivation for some years, as Commelin mentions that the size of the plant differs with different gardeners.

Specimens seen. LINN 986.17, lectotype; Hanekom 1247 (WAG); Werdermann & Oberdieck 641 (WAG); Bayliss 700 (WAG); Drège s.n. (SAM 16914 and 49727); Wijnands 893 (WAG); Van Royen s.n. (L. 900143.62).

Athanasia pubescens (L.) L., Sp. Pl. ed.2:1182 (1763)

Atlas. 3 t.45. *Coma aurea Africana fruticans omnium maxima foliis tomentosa & incanis.*

Commelin. Hort. Amst. 2:93 t.47. Idem.

Artist. Jan Moninckx (1686-1700).

Citations. *Santolina pubescens* L., Cent. II Pl. 1756: 329, Am.ac. 1759,4:329.

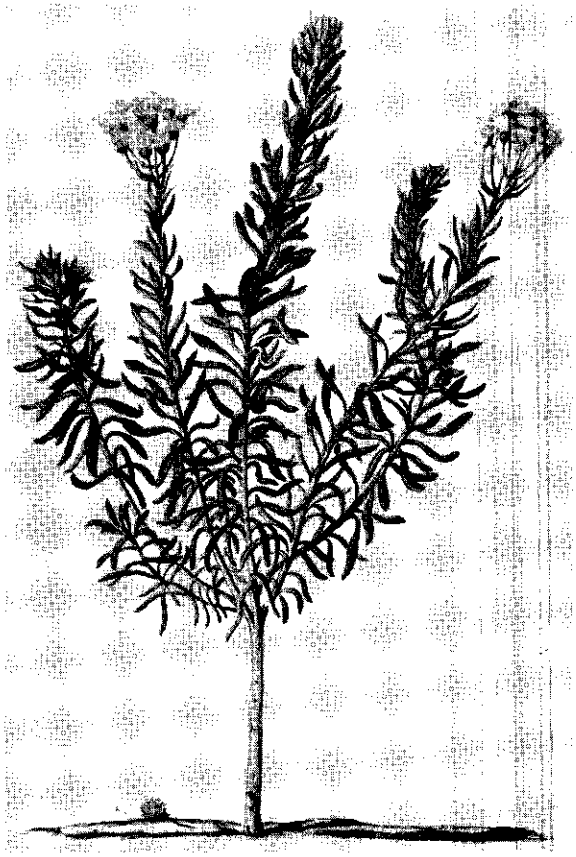
Athanasia pubescens (L.) L., Sp. Pl. ed.2, 1763:1182, Burm.f. 1768 P.F.C.:24, Miller 1768, Lam. 1783:326, Willd. 1803:1804, Ait.f. 1812:520, Sweet 1818:183, DC. 1837:88, Loudon 1844:1074, Huth.

Taxonomic note. *Santolina pubescens* is based on a Burman specimen. Three specimens are preserved in herb. Burman (G), annotated as *'Athanasia pubescens'*. One probably belongs to *Athanasia trifurcata* (L.) L., and was used for t.68 f.2 in J.Burman, Rar. Afr. Pl. (1739). A second is annotated 'Comm. Hort. Amst. II t.47', it is not *A.pubescens*. The third specimen is *A. pubescens* as nowadays understood; the specimen is annotated 'Afr. austr. Cap. b. Spei *Athanasia pubescens'*, it is proposed here as the lectotype of *Santolina pubescens* L.

Distribution. South Africa: S.W.Cape.

Introduction ante 1700. Commelin received the plant in flower from the 'commissaris' Louis Trip, without year. 'Last year' (1700 or 1699) it was raised also from African seeds.

Specimens seen. LINN 986.8 '*Sant. pubescens*' and 986.9 '*Athanasia pubescens*'; Pillans 7159 (K); Compton 9521 (NBG); Bremer 374 (S); Esterhuysen 3531 (S); Wijnands 948 (WAG); herb. Burman, lectotype (G); Drège s.n. (G); Zeyher 846 (G-DC).



Athanasia pubescens. Atlas 3 t.45

Athanasia trifurcata (L.) L., Sp. Pl. ed.2:1181 (1763)

Atlas. 3 t.47. *Coma aurea Africana fruticans foliis glaucis & in extremitate trifidis.*

Commelin. Hort. Amst. 2:97 t.49. Idem.

Artist. Jan Moninckx (1699).

Citations. *Santolina trifurcata* L., 1753:843, [Hort. Cliff.:397.3 var *septem* α, V.Royen 1740:146.3, ms LINN, Boerhaave 1719,1:121.4, Vaillant 1721:313, Tilli 1723:44],

Athanasia trifurcata (L.) L. 1763:1181, Burm.f. 1768 P.F.C.:24, Miller 1768, Lam. 1783:326, Willd. 1803: 1806, Ait.f. 1812:521, Sweet 1818:183, Lessing 1832: 263, DC.1837:89 'bona', Huth.

Taxonomic notes. A new diagnosis is provided for *Santolina trifurcata* in Sp. Pl.; LINN 986.13 '6 *Santolina trifurcata*' is proposed as the type.

Distribution. South Africa: S.W.Cape.

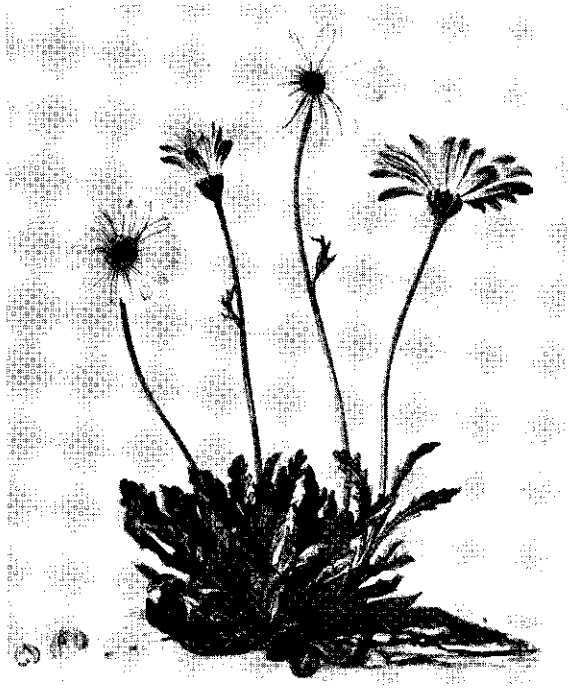
Introduction. No earlier record of the species is known. Commelin raised it from seed, received from 'Africa' in 1697. The plant in the illustration seems to be at

least two years old. Tournef. 1700:461 *'Santolina Africana, corymbifera, Coronopifolio ampliore'* might be the same species, fide Hort. Cliff.:397.3.
Specimens seen. H.S.C. 397.3 α (BM); Fourcade 1947 (K); Marais 598 (K); Bos 62 (WAG); Werdermann et Oberdieck 642 (WAG); Zeyher s.n. (SAM 16924); Wijnands 936 & 960 (WAG).

Baccharis cf. **floribunda** H.B.K., Nov. Gen. et Sp. 4:64 (1820)
Atlas. 8 t.12. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. The identification is tentative only, it is the best match I could find in the descriptions of *Baccharis* in the Caribean area and Venezuela. I did not see specimens of it.

Castalis nudicaulis (L.) T.Norlindh, Studies in the Calenduleae:89 (1943)
Atlas. 3 t.32. *Bellis Africana Florum pediculis pene aphyllis, foliis incisis.*
Commelin. Hort. Amst. 2:66 t.33. Idem.
Artist. Jan Moninckx (1698).
Citations. *Calendula nudicaulis* L. 1753:922, [ms LINN, Boerhaave 1719,1:113.11, Fabricius 1763:149], Bergius 1767:313 'bona', Burm.f. 1768 P.F.C.:28, Willd. 1803:2343, Ait.f. 1813:167, Sweet 1818:198. *Dimorphotheca nudicaulis* (L.) DC. 1837: 71, Huth. *Castalis nudicaulis* (L.) Norl. 1943:89.
Taxonomic note. Commelin's plate was designated as lectotype of *Calendula nudicaulis* by Norlindh (l.c.).
Distribution. South Africa: S.Cape (see Norlindh 1943: 406 for a map).
Introduction 1697. Commelin received seeds in 1697 from Huydecoper, the next year the plant shown in the illustration was grown from these seeds.
Specimens seen. Boucher 2249 (K); Salter 6244 (K); Grubb s.n. (SBT); Acock 2462 (S); Ecklon 142 (S).

Castalis nudicaulis (L.) T.Norlindh var. **graminifolia** (L.) T.Norlindh, Studies in the Calenduleae: 94 (1943)
Atlas. 3 t.33. *Bellis Africana Florum pediculis foliosis, foliis angustis & integris.*
Commelin. Hort. Amst. 2:67 t.34. Idem.
Artist. Jan Moninckx (1696-1700).
Citations. *Calendula graminifolia* L. 1753:922, [V. Royen:177.4, ms LINN, Boerhaave 1719,1:113.12], Bergius 1767:311 'bona', Burm.f. 1768 P.F.C.:28, Willd. 1803:2346.
Dimorphotheca graminifolia (L.) DC. 1837:71, Huth. *Castalis nudicaulis* (L.) Norl. var. *graminifolia* (L.) Norl. 1943:94.
Taxonomic notes. Commelin's plate was designated as lectotype of *Calendula graminifolia* by Norlindh (1943: 94).

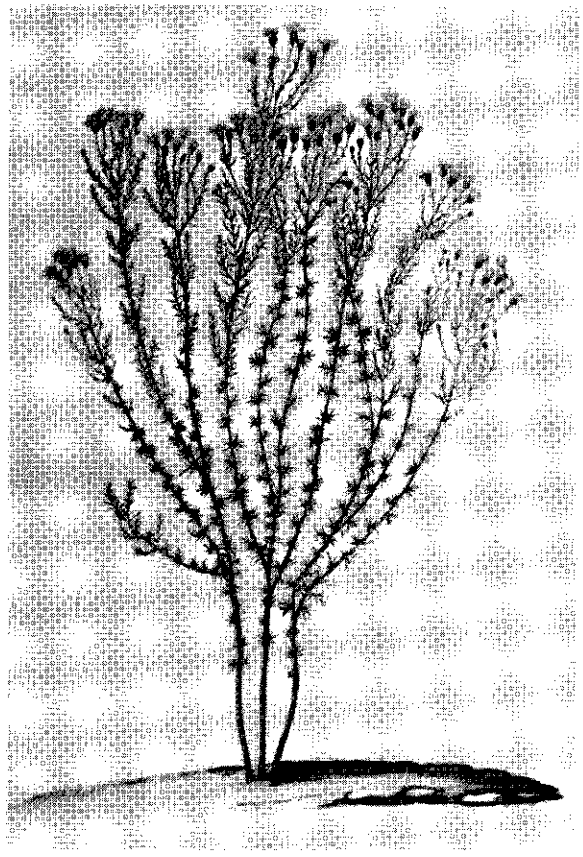


Castalis nudicaulis. Atlas 3 t.32

Distribution. South Africa: S.W.Cape.
Introduction ante 1701. Commelin received the illustrated plant from Gerbrand Pancras.
Specimens seen. LINN 1035.8; MacOwan 148 (K); Acock 4448 (S); Thunberg s.n. (S).

Centaurea glastifolia L., Sp. Pl.:915 (1753)
Atlas. 7 t.4. *Centaurium majus orientale erectum, glasti folio, flore luteo.* Tourn: Coroll: instit. (Tournefort 1703:32).
Commelin. Rar. & Exot.:39 t.39. Idem.
Artist. Maria Moninckx (1703-1705).
Citations. *Centaurea glastifolia* L. 1753:915, [Hort. Cliff.:421.8, V.Royen:142.32, ms LINN, Boerhaave 1719,1:143.1], Miller 1768, DC. 1837,6:568, Huth.
Taxonomic notes. The nomen specificum legitimum for *Centaurea glastifolia* is taken from Hort. Cliff.; H.S.C. 421.8 was designated as lectotype by Wagenitz in Davis 1975:523.
If the genus *Centaurea* is split, the correct name is *Chartolepis glastifolia* (L.) Cass.
Distribution. E.Anatolia, Transcaucasia.
Introduction ca.1703. Seeds were received from Gundelsheimer in or about 1703.
Specimens seen. H.S.C. 421.8, lectotype (BM); Becker 540 ed. Hohenacker (WAG); Pallas 61 (SBT).

Chrysocoma ciliata L., Sp. Pl.:841 (1753)
Atlas. 3 t.46. *Coma aurea Africana fruticans Ericae foliis.*



Chrysocoma ciliata. Atlas 3 t.46

Commelin. Hort. Amst. 2:95 t.48. Idem, but *'folio'*.
Artist. Maria Moninckx (1699-1700).
Citations. *Chrysocoma ciliata* L. 1753:841 – not cited in the protologue – Linn. 1763:1177, Burm.f. 1768 P.F.C.:24, Huth.
Chrysocoma ciliaris Willd. 1803:1789, Ait.f. 1812:514, Sweet 1827:227.
Taxonomic notes. *Chrysocoma ciliata* L. has an original nomen specificum legitimum in Sp. Pl. The type is LINN 982.4 '2 *cilia*-?', although the number of the species in Sp. Pl. is 3, not 2. No.2 is *Chrysocoma cernua* L., the type of this name is LINN 983.3 '3 *cernua*', so that the numbers in Sp. Pl. apparently are interchanged in the herbarium annotations.
On the typification of the name *Chrysocoma ciliata* L. some comment is given by Bayer (1981:287) in her revision of *Chrysocoma.* She considers it improbable that *C.ciliata* L. can be typified by LINN 982.4, since it is annotated as *'cernua'* and as *'ciliaris'*.
J.E.Smith's annotation as *'cernua'* is of no consequence as regards the nomenclatural status of this sheet.
I cannot read Linnaeus' own annotation as *'ciliaris'* with certainty because after *'cilia'* the word ends hieroglyphically. This would not be the only case in which the spelling of Linnaeus' published epithet differs slightly from his herbarium annotation.
The nomen specificum legitimum for *C.ciliata* L. reads *'Chrysocoma suffruticosa, foliis linearibus recurvis scabris ciliatis, floribus erectis'*. There is nothing in this that conflicts with the characters shown in the specimen LINN 982.4. I therefore designate this specimen as the lectotype of *Chrysocoma ciliata* L. This specimen is conspecific with Grubb s.n. *'Chrysocoma* mihi *tenuifolia'* (SBT), the type of *Chrysocoma tenuifolia* Bergius (1767:235), a name thus reduced to the synonymy of *C.ciliata* L.
Another element in the protologue of *C.ciliata* L. is Dillen's Plate t.88 f.103 (1732). This plate was cited by Linnaeus later in the protologue of *Chrysocoma scabra* L. 1763:1177 and annotated as such in Linnaeus' copy of Dillen (cf. Schmidt 1965:83).
Commelin's Plate 48 is not very diagnostic. De Candolle noted (1836:353) 'habitum [of *C.cernua*] exhibet, sed cilia foliorum nec in descr. nec in icone indicantur'. The best, although not entirely convincing, match I found for Commelin's plate is with specimens of *C.ciliata* L.
The Willdenow specimen of *Chrysocoma ciliaris* Willd. is probably not a *Chrysocoma:* fide Bayer 1981:288. The name is nomenclaturally a nomen novum for *C. ciliata* L., however.
Distribution. Southern Africa, see Bayer 1981:357-359 for maps.
Introduction 1698. Commelin's plant was grown from seed received in 1698 from the Cape ('Africa').
The species is not in cultivation at present.
Specimens seen. LINN 982.4; Grubb s.n. (SBT); Pillans 9254 (BOL); Schlieben 11434 (WAG); Werdermann & Oberdieck 822 (WAG); Schlechter s.n. (AMD); Pritzel & Diels s.n. (AMD).

Chrysocoma coma-aurea L., Sp. Pl.:840 (1753)

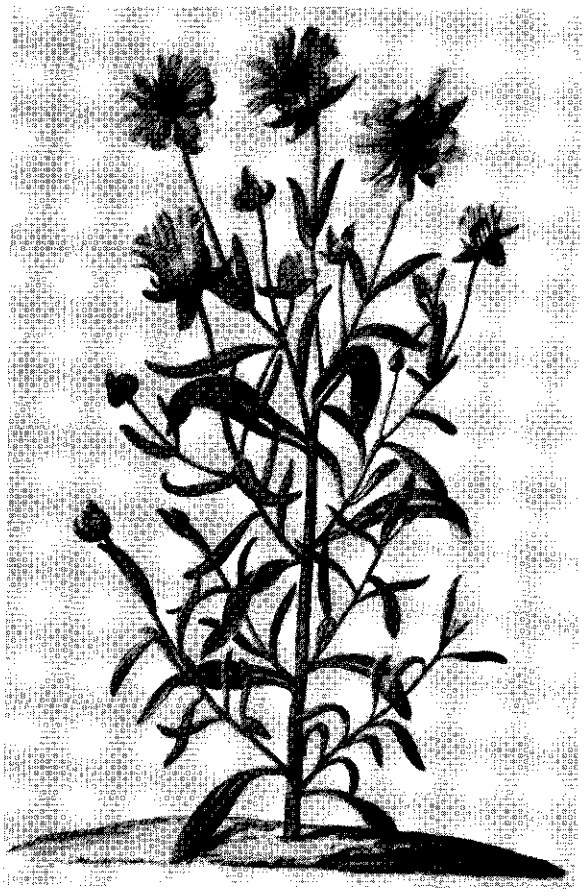
Atlas. 3 t.43. *Coma aurea Africana fruticans foliis Linariae angustis major.*
Commelin. Hort. Amst. 2:89 t.45. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Chrysocoma coma-aurea* L. 1753:840, [ms LINN, Boerhaave 1719,1:122, Tilli 1723:44], Miller 1768.
Chrysocoma cernua L. 1753:841 – not cited in the protologue – Linn. 1763:1177.
Taxonomic notes. The nomen specificum legitimum for *Chrysocoma coma-aurea* L. is cited from Hort. Cliff.: 397.2. A vouching specimen is preserved in the Clifford herbarium. Bayer (1981:290) designated LINN 982.2 '1 *Coma aurea*' as the lectotype of the name; the number of the species in Sp. Pl. is 1.
Distribution. South Africa: S.W.Cape, see Bayer (1981: 349) for a map.
Introduction. The plant was communicated by Gerbrand Pancras, no year is given. Pancras was nominated 'commissaris' of the Hortus Medicus in 1698. The

species was cultivated in Holland and England; Plukenet 1694 t.327 f.2 illustrated the species, he had it from Bobart.
Specimens seen. H.S.C. 397.3; LINN 982.2; Esterhuysen 26759 (BOL); MacOwan 118 (K); Rodin 3192 (BOL).

Chrysocoma coma-aurea L., Sp. Pl.:840 (1753)
Atlas. 3 t.43. */ Coma aurea Africana fruticans/ foliis angustioribus minor.*
Commelin. Hort. Amst. 2:89 t.45. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Chrysocoma cernua* L., 1753:841-842, Burm. f. 1768 P.F.C.:24, Miller 1768, Willd. 1803:1789, Ait.f. 1812:513, Sweet 1818:182.
Chrysocoma coma-aurea L.var. *cernua* (L.) DC. 1836: 353.
Taxonomic notes. Commelin's plate does not represent *Chrysocoma cernua* L. if this name is typified by LINN 983.3 '3 *cernua*', as proposed by Bayer (1981:285). It is most likely a sparsely leaved specimen of *C.coma-aurea* L.
Introduction. Commelin did not specify the origin of his plant.

Cineraria geifolia (L.) L., Sp. Pl. ed.2:1242 (1763) [Pl.28]
Atlas. 4 t.21. *Jacobaea Africana Hederae terrestris folio repens.*
Commelin. Hort. Amst. 2:145 t.73. Idem, syn. *Aster annuus flore luteo.*
Artist. Jan Moninckx (1698-1700).
Citations. *Othonna geifolia* L., 1753:924, [Hort. Cliff.: 410.7, ms LINN, Ray 1704:174.2, Boerhaave 1719,1: 98].
Cineraria geifolia (L.) L. 1763:1242, Bergius 1767:289, Burm.f. 1768 P.F.C.:27, Miller 1768, Willd. 1803:2077, Ait.f. 1813:72, Sweet 1818:189, DC. 1837:307, Huth.
Taxonomic notes. *Othonna geifolia* is based on Hort. Cliff.:410.7, the corresponding specimen in H.S.C. is proposed as lectotype.
Distribution. South Africa: Cape Province.
Introduction 1697. The plant was grown from seed received from 'Africa' (the Cape) in 1697.
Specimens seen. H.S.C. 410.7, lectotype (BM); LINN 1000.1 & 2; Burman ex Horto Leidense (SBT); Burchell 363 (K); Werdermann & Oberdieck 194 (WAG); Grubb s.n. (SBT).

Coreopsis grandiflora Hogg ex Sweet, Britt. Fl. Gard. 2:t.175 (1826)
Atlas. 8 t.46. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. The water-colour could represent *C. lanceolata* L. or *C.grandiflora* Sweet. *C.lanceolata* differs from *C.grandiflora* in more basally leafy stems, less divided leaves, longer stalked and larger flower heads



Coreopsis grandiflora. Atlas 8 t.46

(Sheriff 1936:352, Dress 1965:29, Boom 1975:326). The drawing of Jan Moninckx shows a plant leafy to the top, undivided leaves, relatively short peduncles and rayflowers not much larger than the involucrum. In all the better match is with *C.grandiflora.*
C.grandiflora is typified here by Sweet's plate. I did not investigate the typification of *C.lanceolata;* Dillen 1732 t.48 f.56 I consider as an illustrative syntype, the specimens in LINN 1026.8 & 9 are no type material.
Distribution. New Mexico to Florida, northwards to Missouri.
C.lanceolata has a more northern range extending to the Great Lakes.
Introduction ante 1706. Boom (l.c.) gives 1724 for *C. lanceolata,* probably based on Dillen (l.c.) who gives earlier synonyms, and 1821 for *C.grandiflora.* If my identification is correct *C.grandiflora* was the first *Coreopsis* in cultivation.
Specimen seen. Wijnands 863, culta (cv. Sunburst) (WAG).

Echinops ritro L., Sp. Pl.:815 (1753)
Atlas. 8 t.74. No name.

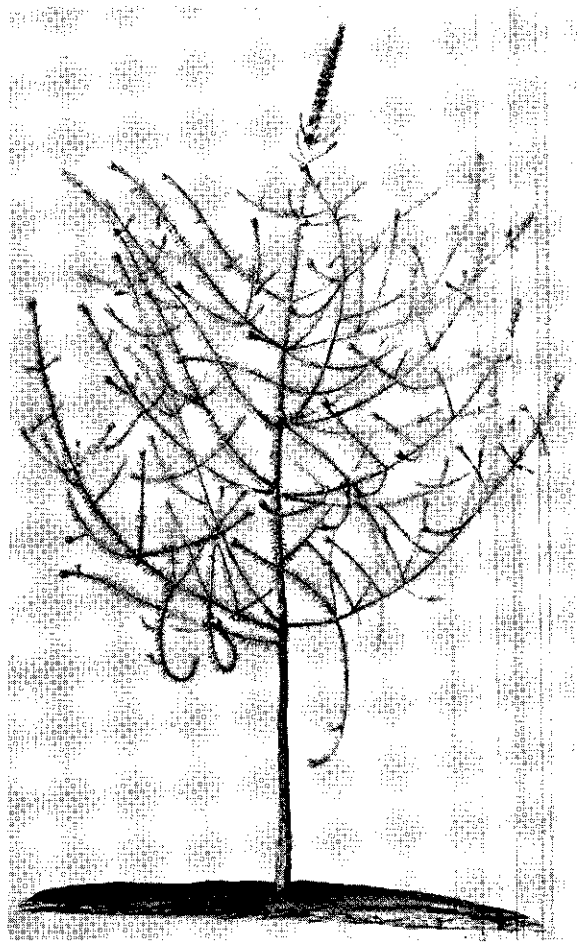
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Distribution. S. and E.Europe.

Eclipta prostrata (L.) L., Mant. Pl. Alt.:286 (1771)

Atlas. 8 t.20. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. This species is commonly known as *E.alba* (L.) Hassk. This name is synonymous with *E. prostrata.* The first author to unite these taxa was Roxburgh (Fl. Ind. 3:438. 1832), who used *E.prostrata.* This matter was discussed by Koyama & Boufford in Taxon 30:504-505 (1981).
The basionyms are *Verbesina prostrata* L. 1753:902 and *Verbesina alba* L. 1753:902. No specimens are available in LINN. Grierson in Dassanayake & Fosberg (1980:212) designated Plukenet Herb. (BM) as the lectotype of *V.prostrata* L. I consider his figure 118 f.5 as the lectotype and the specimen as the typotype.
Distribution. A weed general in the subtropics and tropics.
Introduction. Plukenet 1691 t.118 f.5 probably is the first record of this species.
It is commonly cultivated at present in Botanical Gardens.
Specimens seen. Breteler 4221 (WAG); Groenendijk 9 (WAG); Wijnands 381, culta (WAG).

Elytropappus gnaphaloides (L.) Levyns, Transact. Roy. Soc. S.Afr. 23:94 (1935)

Atlas. 4 t.7. *Frutex Africanus aromaticus Flore spicato exiguo.*
Commelin. Hort. Amst. 2:117 t.59. Idem, syn.: *Artemisia Africana Frutescens.*
Artist. Jan Moninckx (1699).
Note on the plate. The engraving gives a much simplified impression of the water-colour.
Citations. *Artemisia ambigua* L., 1763:1191 'an?', [ms LINN], Burm.f. 1768 P.F.C.:24.
Phylica trichotoma Thunb. (= *Staavia globosa* Sond. fide Pillans 1942:158) – Huth.
Taxonomic notes. Linnaeus' *Artemisia ambigua* was a problem for him, he thought it to be intermediate between four genera. Linnaeus' name is typified by *'Artemisia dubia'* LINN 988.55 by Hilliard & Burtt 1971:23, and Hilliard 1981:307, the species is currently known as *Ifloga ambigua* (L.) Druce. Commelin's plant does not belong there. It could be many things.
First of all it should be noted that the swollen ends of the branches are not flowering capitula. The inflorescence is the spike-like structure. Specimens of *Stoebe vulgaris* Levyns match reasonably well with it. This species is however from the Transvaal. Of the Cape *Stoebe*'s, *S.plumosa* seems closest. A collection, Bos 58, of this species from the foothills of the Stellenbosch mountains behind Coetzenburg, shows a feature quite like Moninckx's swollen branch tips. The careful field-note reads 'worls of very hairy & felty silvery grey leaf-like structures, almost like miniature inflorescences of *Phylica capitata,* . . . maybe these are monstruosities caused by some insect'. Here Huth's identification comes to mind. As Commelin had his plant from seed, it does not seem likely that his structures are caused by insects. The same 'buds', as Commelin calls them, are seen on *Stoebe vulgaris* in Rauh & Schlieben 9734.
Stoebe plumosa is based on *Seriphium plumosum* L. This name can be typified by '2 *plumosum*' LINN 1049. 4. Commelin's plate is not very much like this specimen. Moreover, Commelin's plant has larger leaves, and the 'galls' in the specimen cited are distributed all over the inflorescences, they are not restricted to the branchtips as in Commelin's plant.
In the final analysis, I identify it with *Elytropappus gnaphaloides* (L.) Levyns, the other 'Slangbos' of the Cape. Commelin stated that the thickened branch tips are buds of inflorescences. I think he is to be believed.



Elythropappus gnaphaloides. Atlas 4 t.7

In herbarium specimens I have not seen them, but as Compositae tend to flower on when pressed, this is not surprising.
Elytropappus gnaphaloides is based on *Seriphium gnaphaloides* L., Cent. I Pl. no.87. Whether LINN 1048.7 '3 *Seriphium gnaphalodes*' belongs here, I cannot decide.
Distribution. South Africa: Cape.
Introduction. Commelin received seeds from Africa, he did not say when.
Specimens seen. *Ifloga ambigua* (L.) Druce: '*Artemisia dubia*', lectotype, LINN 988.55; Marsh 11211 (WAG).
Stoebe plumosa (L.) Thunb.: Bos 58 (WAG); '2 *plumosum*' LINN 1049.4, lectotype.
Stoebe vulgaris Levyns: Devenish 1379 (WAG); Taat 27 (WAG); Rauh & Schlieben 9734 (WAG).
Elytropappus gnaphaloides (L.) Levyns: Bos 77 (WAG); Esterhuysen 16936 (PRE); Levyns 4866(PRE); Pillans 12764 (PRE); Smith 2579 (PRE).

Euryops pectinatus (L.) Cass., Dict. Sc. Nat. 16: 51 (1820)
Atlas. 4 t.17. *Jacobaea Africana frutescens foliis Absinthii umbelliferi incanis.*
Commelin. Hort. Amst. 2:137 t.69. Idem, syn. *Chrysanthemum montanum Abrotani folio, flore luteo.*
Artist. Johanna Helena Herolt (1699).
Citations. *Othonna pectinata* L. 1753:926, [Hort. Cliff.: 419.1, V.Royen:179.3, ms LINN, Ray 1704:175, Boerhaave 1719,1:99], Burm.f. 1768 P.F.C.:29 ('25'), Miller 1768, Willd. 1803:2374.
Euryops pectinatus (L.) Cass. 1820:51 – DC. 1837: 443, Huth, Nordenstam 1968:221 with reproduction of the plate as frontispiece.
Taxonomic note. Nordenstam (l.c.) designated H.S.C. 419.1 as lectotype of *Othonna pectinata.*
Distribution. South Africa: S.W.Cape.
Introduction ante 1700. The plant was grown from seed received from 'Africa' (the Cape), no year is given.
Specimens seen. H.S.C. 419.1, lectotype (BM); LINN 1038.4; Acocks 5362 (S); Esterhuysen 28649 (S); Van Royen s.n. (L 900283.2).

Felicia fruticosa (L.) Nichols., Dict. Hort. 2:370 (1893-94)
Atlas. 3 t.26. *Aster Africanus frutescens, foliis angustis, & plerumque conjunctis.*
Commelin. Hort. Amst. 2:53 t.27. Idem.
Artist. Jan Moninckx (1686-1699).
Citations. *Aster fruticosus* L. 1753:872, [Hort. Cliff.: 409.17, V.Royen:168.10, ms LINN, Boerhaave 1719,2: 96.27], Burm.f. 1768 P.F.C.:27, Miller 1768, Lam. 1783:302.
Diplopappus fruticulosus (Willd.) Less. 1831:118 – Huth.
Felicia fruticosa (L.) Nich. 1893-94:370 – Grau 1973: 203.
Taxonomic notes. Grau 1973:275 typified *Aster fruticosus* L. by LINN 997.6 & 7, but he had not seen these specimens. The nomen specificum legitimum is taken without any change from Hort. Cliff. There is a good specimen that matches Commelin's plate in H.S.C. 409.17 and I designate it as the type, Grau's typification being rejected because it was not based on a single specimen.
Distribution. South Africa.
Introduction ante 1699. Plukenet had the plant in 1700 t.340 'fol.29 pl.29'.
Commelin gives no information on his source, but as he describes the habitat and flowering period in Africa, he must have had it from the Cape. In Hort. Cliff. Linnaeus includes Tournefort 1700: 482 '*Aster Africanus, ramosus, Hyssopi folii, floribus coeruleis* Oldenland'. I have no clue to its identity. It is interesting to note that Tournefort had plants from Oldenland.
Specimens seen. H.S.C. 409.17, lectotype (BM); LINN 997.6 '1' and 997.7; Wijnands 859, culta (WAG).

Felicia tenella (L.) Nees, Gen. Sp. Ast.:208 (1833)
Atlas. 3 t.28. *Aster Africanus frutescens Lavandulae folio, Flore purpureo.*
Commelin. Hort. Amst. 2:57 t.29. Idem.
Artist. Maria Moninckx (1699-1700).
Citations. No previous interpretation of this plate is known to me.
Taxonomic notes. My identification is putative. It is mainly based on a cultivated specimen in the Bergius herbarium (SBT) that is very much like Moninckx' water-colour.
Distribution. South Africa, S.W.Cape.
Introduction 1698. Commelin's plant was grown from seed received from the Cape in 1698.

Helichrysum crassifolium (L.) D.Don in Loudon, Hort. Brit.: 341 (1830) [Pl.22]
Atlas. 4 t.2. *Elichrysum Africanum frutescens angustis & longioribus foliis incanis.*
Commelin. Hort. Amst. 2:109 t.55. Idem.
Artist. Jan Moninckx (1697-1700).
Citations. *Gnaphalium orientale* L. 1753:853, [Hort. Cliff.: 402.9, Hort. Ups.:256.3, ms LINN], Burm.f. 1768 P.F.C.:25, Lam. 1788:749 (with some doubt), Ait.f. 1813:13, Sweet 1818:184.
Helichrysum orientale (L.) Gaertn. 1791:404 – Sweet 1827:223, Huth.
Gnaphalium fruticosum Mill. 1768.
Taxonomic notes. *Gnaphalium orientale* L. is based on Hort. Cliff.:402.9 and Hort. Ups.:256.3. The specimen in H.S.C. 402.9 vouches for the entry in Hort. Cliff. and LINN 989.35 '13 HU' is a specimen from the Linnean garden at Uppsala. Hilliard & Burtt (1981:245) designated as lectotype of *G.orientale* L. 'sheet no.10 in herb. Cliff.'. Sheet no.10 is non-existent and I pre-

sume that Hilliard & Burtt meant to designate H.S.C. 402.9.
Gnaphalium fruticosum Mill. is typified by Commelin's plate 55 as proposed by Hilliard & Burtt (1981:242). These authors treat *G.fruticosum* Mill. as a synonym of *Helichrysum orientale* (L.) Gaertn. Commelin describes his plant as living at the Cape. If Hilliard & Burtt are correct, Commelin must have confused the origin of his plant, because *H.orientale* is a Mediterranean species. Their opinion is confirmed in a way by the plant described by N.L.Burman as *Gnaphalium incanum* (1768:25). The type of *G.incanum* was identified as *H.orientale* by Hilliard & Burtt (1981:243). This type is a cultivated specimen from the Hortus in Amsterdam. It is not impossible that Commelin's plant remained in cultivation for some 40 years.
I am not certain that Commelin's plate 55 represents the Mediterranean *H.orientale,* for two reasons. The plate does not match exactly specimens I have seen of *H.orientale* which has larger capitula with yellow, not white, involucral bracts. Moreover, Nicolaas Oortmans is credited for the introduction of the plant by Commelin. Oortmans had no relation with the Mediterranean. He lived at the Cape (see the biographical note on Oortmans). It is possible that *H.orientale* was introduced to the Cape, but this is most unlikely. The other species received from Oortmans in 1697, *Manulea cheiranthus* (L.) L., is a Cape plant beyond any doubt. After all, I was inclined to accept Commelin's claim that his plant was from the Cape. However, Mrs O.M. Hilliard, who kindly discussed this problem with me, is convinced that Commelin's plate does not represent a South African *Helichrysum,* but a Mediterranean one. The most likely candidate, as Mrs Hilliard pointed out to me, is *H.crassifolium,* which matches Commelin's plate slightly better than *H.orientale.* I feel fortunate to be able to follow the monographer's decision in this problem.
Gnaphalium fruticosum Mill. should now be placed in the synonymy of *Helichrysum crassifolium* and not of *H.orientale.*
Distribution. Balearic Isles.
Introduction. Commelin wrote that he received his plant in 1697 from the Cape, sent by Nicolaas Oortmans. Probably Commelin has confused his notes on the source of this plant.
Specimen seen. Bianor s.n. (E, photo).

Helichrysum foetidum (L.) Moench, Methodus Plantarum:575 (1794)

Atlas. 4 t.3. *Elichrysum Africanum latifolium foetidum capitulo aureo.*
Commelin. Hort. Amst. 2:111 t.56. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Gnaphalium foetidum* L. 1753:851, [Hort. Cliff.:402.13, Hort. Ups.:256.2, ms LINN, Boerhaave 1719,1:120.8 & 9], Bergius 1767:246, Burm.f. 1768

Helichrysum foetidum. Atlas 4 t.3

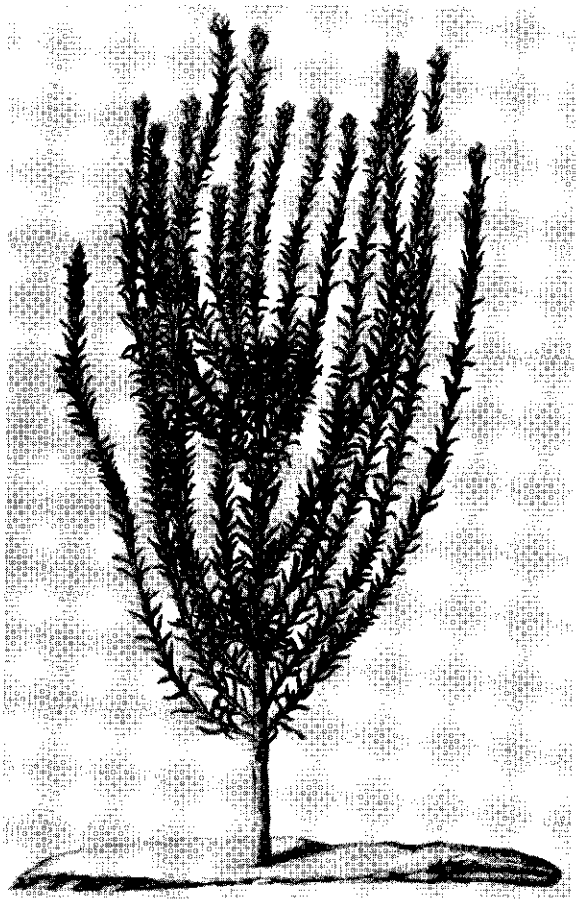
P.F.C.:25, Willd. 1803:1875, Ait.f. 1813:16, Sweet 1818:184.
Helichrysum foetidum (L.) Moench 1794:575 – Huth.
Taxonomic notes. *Gnaphalium foetidum* L. is based on the cited entries in Hort. Cliff. and Hort. Ups. The specimen H.S.C. 402.13 is a good match of Commelin's plate. It was designated as lectotype by Hilliard & Burtt (1981:242).
The species varies in having yellow or white capitula. Yellow is the more common colour but the type has white capitula.
Note on the plate. The water-colour under discussion is the basis of the engraving published by Caspar Commelin. It is the plant with yellow capitula. The plate is cited mostly as '. . . *cap. argenteo*', a form mentioned in Commelin's caption and text but not shown. Linnaeus cited *cap. luteo* in Hort. Cliff.:402.13 α, Aiton f. cited it also.
Distribution. From Southern Africa north to Cameroun and Ethiopia.
Introduction ante 1692. The species was illustrated by

Plukenet in 1692 (t.243 f.1) and by Morison in 1699 (t.20 f.32). Commelin did not specify the source of his plant.
Specimens seen. H.S.C. 402.13, lectotype (BM); Hilliard & Burtt 10814, with yellow capitula (K); MacGillivray 545, with white capitula (K); Bayliss 5265 and 7903, with yellow capitula, and 7341 with white capitula (WAG).

Helichrysum foetidum (L.) Moench, Methodus Plantarum:575 (1794)
Atlas. 4 t.4. *Elichrysum Africanum latifolium foetidum capitula argenteo. Conyza Africana graveolens, capitulis argenteis.* Pluckenetii Phytographiae Tabula CCXLIII. (Plukenet 1692 t.243 f.1).
Commelin. Hort. Amst. 2:111. Idem. The water-colour was not used for the engraving in Hort. Amst.
Artist. Jan Moninckx (1686-1700).
Taxonomic notes. Plukenet's plate which is cited by Commelin is a paratype of *Gnaphalium foetidum* L. Linnaeus preferred Commelin's *'foetidum'* over Plukenet's *'graveolens'* as the epithet for this species.

Helichrysum cf. **paniculatum** (L.) Willd., Sp. Pl. ed.4, 3:1911 (1804)
Atlas. 7 t.2. *Elichrysum Africanum tomentosum frutescens floris calyce argenteo.*
Commelin. Rar. & Exot.:37 t.37. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. No interpretation of this plate is known to me.
Taxonomic notes. This plate and the next one *'calyce aureo'*, t.3, belong to the same species. *Helichrysum paniculatum* has both colour forms, pink ones also, and matches the plates reasonably. The peduncles in the specimens seen generally are longer however.
The basionym *Xeranthemum paniculatum* L. 1753: 859 is typified by the specimen in Herb. Burman (G) illustrated in Burman 1738 t.67 f.1, proposed by Hilliard & Burtt 1981:250. These authors expressed their opinion that *Helichrysum paniculatum* should be excluded from *Helichrysum,* to be accommodated in the genus currently known by the illegitimate name *Helipterum* DC.
Distribution. Southern Africa.
Introduction ante 1705. Commelin did not specify the source of his plant.
No earlier record of it is known.
The species is not in cultivation at present.
Specimens seen. Acock 1547 (S); Bayliss 7680 (S); Nordenstam 869 (short peduncles) and 3248 (S).

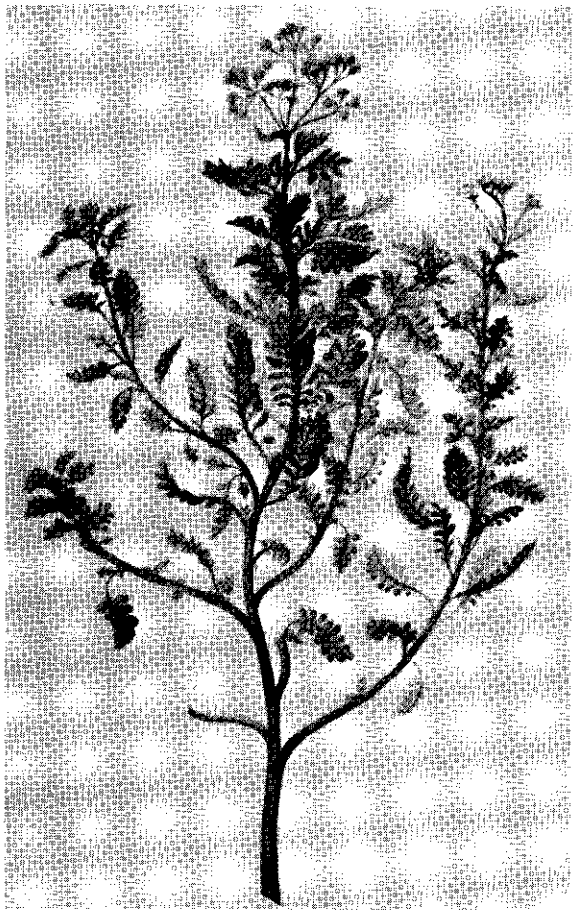
Helichrysum cf. **paniculatum** (L.) Willd., Sp. Pl. ed.4, 3:1911 (1804)
Atlas. 7 t.3. *Elichrysum Africanum tomentosum frutescens floris calyce aureo.*
Commelin. Rar. & Exot.:38 t.38. Idem.
Artist. Not signed (1686-1705).



Helichrysum paniculatum. Atlas 7 t.3

Citations. No interpretation of this plate is known to me.

Hippia frutescens (L.) L., Mantissa altera:291 (1771)
Atlas. 5 t.28. *Tanacetum Africanum arborescens, foliis lavendulae multifido folio.*
Commelin. Hort. Amst. 2:201 t.101. Idem.
Artist. Johanna Helena Herolt (1699).
Citations. *Tanacetum frutescens* L. 1753:844, [Hort. Cliff.:398.3, V.Royen:154.2, ms LINN, Boerhaave 1719,1:124.4, Bergius 1767:243, Burm.f. 1768 P.F.C.: 24, Miller 1768, Willd. 1803:2382, Ait.f. 1813:179, Huth.
Taxonomic notes. *Tanacetum frutescens* has a new nomen specificum legitimum in Sp. Pl. The specimen in LINN 1039.3 '3' is proposed as lectotype. This specimen is also the type of *Eriocephalus pectinifolius* L. (1767).
Distribution. Southern Africa, including the Cape.
Introduction ante 1699. Commelin did not specify the source of his plant.
Specimens seen. H.S.C. 398.3 and 398 after *Tanacetum*



Hippia frutescens. Atlas 5 t.28

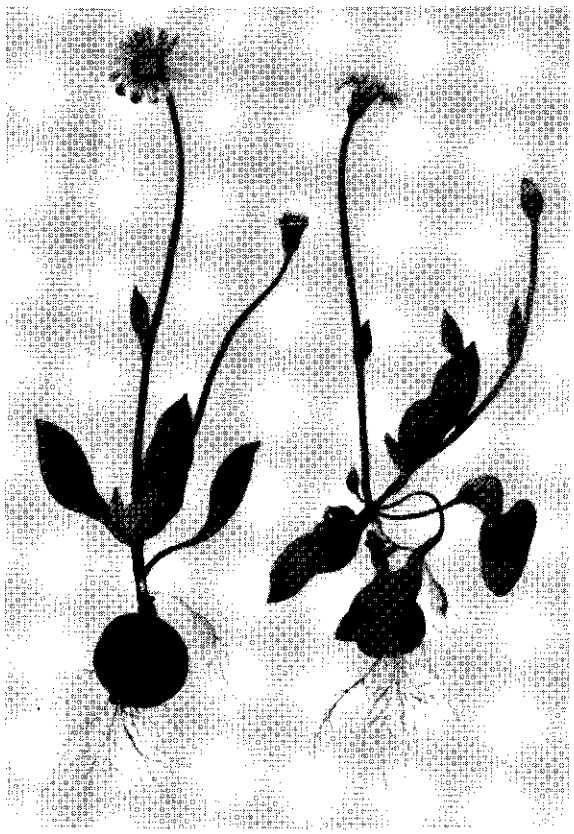
(BM); LINN 1039.3, lectotype; Bayliss 6028 (WAG); Bos 739 (WAG); Thunberg s.n. (UPS-Thunb. 20905).

Kleinia ficoides (L.) Haw., Syn. Pl. Succ.:313 (1812) [Pl.57]
Atlas. 7 t.5. *Senecio Africanus arborescens ficoides folio & facie.*
Commelin. Rar. & Exot. 40 t.40. Idem.
Artist. Jan Moninckx (1704-1705).
Citations. *Cacalia ficoides* L. 1753:834, [Hort. Cliff.: 395.2, ms LINN, Boerhaave 1719,1:117, Tilli 1723: 157, Bradley 1727,5:11 t.49, Fabricius 1763:154], Mill. 1768, Burm.f. 1768 P.F.C.:23, Willd. 1803:1727, DC. 1802 t.90, Kraus 1893:115.
Kleinia ficoides (L.) Haw. 1812:313.
Taxonomic notes. *Cacalia ficoides* L. has a new nomen specificum legitimum in Sp. Pl., that essentially is a rephrasing of the name in Hort. Cliff. No specimen is available in LINN nor in H.S.C. Commelin's plate is the only other element available for typification, it represents the species as presently understood.
Distribution. South Africa: S.W.Cape.
Introduction 1702. The plant was grown from seed received in 1702 from W.A.van der Stel.
The species is still in cultivation.
Specimen seen. Goldblatt 1773 (WAG, S).

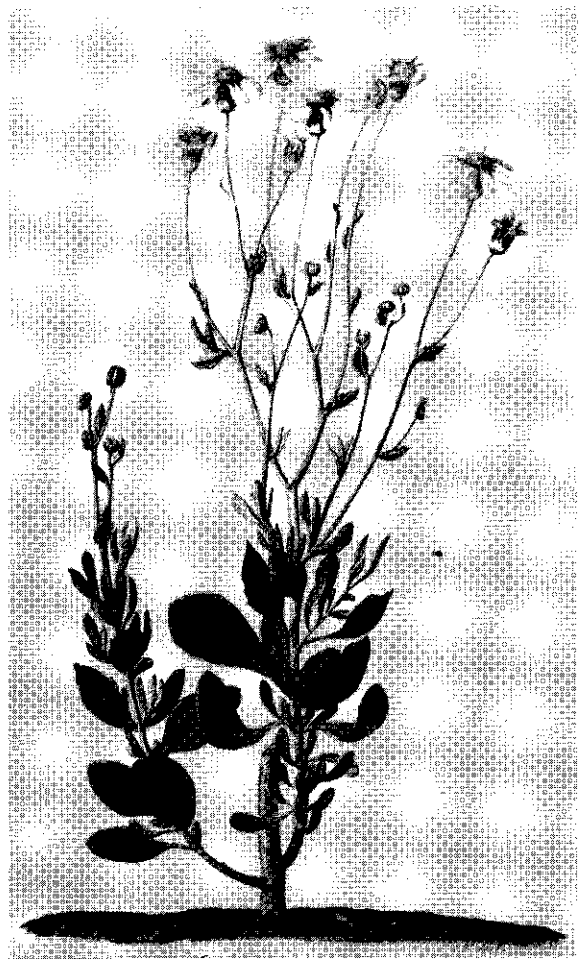
Osteospermum spinosum L. var. **runcinatum** Bergius, Descr. Pl. Cap.:327 (1767)
Atlas. 3 t.41. *Chrysanthemoides Osteospermon Africanum odoratum spinosum & viscosum.*
Commelin. Hort. Amst. 2:85 t.43. Idem.
Artist. Jan Moninckx (1697).
Citations. *Osteospermum spinosum* L. 1753:923, [Hort. Cliff.: 424.1, V.Royen 1740:179, ms LINN, Boerhaave 1719,1:103.1], Burm.f. 1768 P.F.C.:28, Miller 1768, Ait.f. 1813:174, Sweet 1818:198, Huth.
Osteospermum spinosum L. var. α *runcinatum* Bergius 1767:327, Norlindh 1943:225.
Osteospermum spinescens Willd. (non Thunb.) 1803: 2365.
Taxonomic notes. Norlindh (l.c.) designated LINN 1037.1 '*spinosum* 2', as the type of *Osteospermum spinosum* L. He did so to preserve the present interpretation of the name. As the nomen specificum legitimum is taken unchanged from Hort. Cliff., lectotypification with the specimen H.S.C. 424.1 would seem appropriate. As this specimen belongs to Bergius' α *runcinatum,* as does Commelin's plate as well, this latter typification might satisfy technical requirements but would upset present usage of the name. Norlindh's decision is to be followed.
Distribution. South Africa: S.W.Cape (see Norlindh 1943:413 for a map).
Introduction 1697. Commelin's plant was grown from seed in 1697. These seeds came from Africa, data on its habitat 'clay soils, flowering in September' at the Cape are given. No earlier record of the species is known.
Specimens seen. H.S.C. 424.1 (BM); Bos 27 (WAG); Lam & Meeuse 4314 (L); Wilms 3375 (K, L); V.Royen s.n., with Commelin's phrase (L); Thunberg s.n. (UPS-Thunb. 20849).

Othonna bulbosa L., Sp. Pl.:924 (1753)
Atlas. 8 t.76. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Distribution. South Africa: S.W.Cape.
Specimens seen. Esterhuysen 17413 (BOL); D.van Royen s.n. (L).

Othonna coronopifolia L., Sp. Pl.:926 (1753)
Atlas. 4 t.18. *Jacobaea Africana frutescens Coronopifolio.*
Commelin. Hort. Amst. 2:139 t.70. Idem.
Artist. Maria Moninckx (1686-1700).
Citations. *Othonna coronopifolia* L. 1753:926, [Hort. Cliff.:419.2, V.Royen:179.1, Ray 1704:175.5, Boerhaave 1719,1:98.10], Burm.f. 1768 P.F.C.:29, Miller



Othonna bulbosa. Atlas 8 t.76

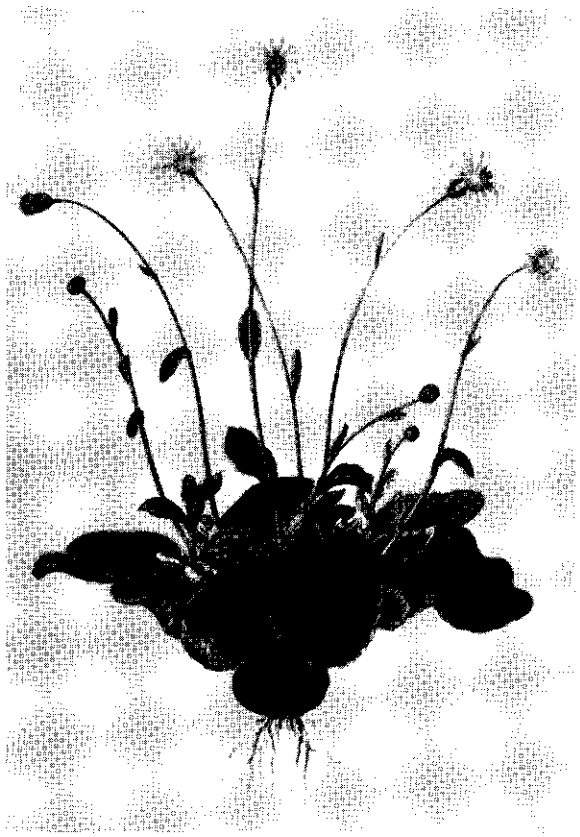


Othonna frutescens. Atlas 4 t.22

1768, Willd. 1803:2376, Ait.f. 1813:176, Sweet 1818: 198, Haw. 1821:195, DC. 1837:475, Huth.
Othonna frutescens L. 1771:289 – Sweet 1827, Salm-Dyck 1834:188.
Taxonomic notes. *Othonna coronopifolia* is based on Hort. Cliff.:419.2 and on Van Royen:179.1. No specimen is available in H.S.C., nor in L – Van Royen. LINN 1038.12 is proposed here as the lectotype of *Othonna coronopifolia* L.
Distribution. South Africa: S.W.Cape.
Introduction. Commelin gave no information on the source of his plant, it was propagated by cuttings and seeds.
Specimens seen. Bayliss 843 (K, WAG); Hanekom 1394 (WAG); Lam & Meeuse 4249 (L); MacOwan 1905 (SAM); Schlechter 7885 (L, S); Leighton 1789 (BOL); Lotsy & Goddijn 1539 (L).

Othonna ?frutescens Bergius, Descr. Pl. Cap.: 335 (1767)
Atlas. 4 t.22. *Jacobaea Africana frutescens crassis & succulentis foliis.*
Commelin. Hort. Amst. 2:147 t.74. Idem; the seed was received as *Cirsium frutescens.*
Artist. Jan Moninckx (1699-1700).

Citations. *Othonna cheirifolia* L. 1753:926, [Hort. Cliff.:419.3, V.Royen:179.2, Ray 1704:174.3, Boerhaave 1719,1:98.8].
Cineraria othonnites L. 1763:1244 'confer', Miller 1768.
Othonna crassifolia L. 1767:118, Willd. 1803:2376.
Othonna frutescens Bergius 1767:335 – not cited in the protologue –, Linn. 1771:289 't.76', [ms LINN], Persoon 1797:837, Willd. 1803:2381, DC. 1837:478 & 483, Huth.
Taxonomic notes. *Othonna cheirifolia* L. is based on Hort. Cliff.:419.3 and V.Royen:179.2. No specimens are available that vouch for these entries. Linnaeus cited these references for *Othonna crassifolia,* therefore it is probably better to consider '*cheirifolia* 13' LINN 1038.14 for the typification of this name. *Othonna cheirifolia* L. was transferred to *Othonnopsis cheirifolia* (L.) Benth. & Hook.f., a N.African species.
Commelin's Plate 74 is quite different from LINN 1038.14. *Cineraria othonnites* L. is probably based on LINN 1038.22, a specimen annotated by Linnaeus as *'Cineraria othonnites'* but this identification was deleted by



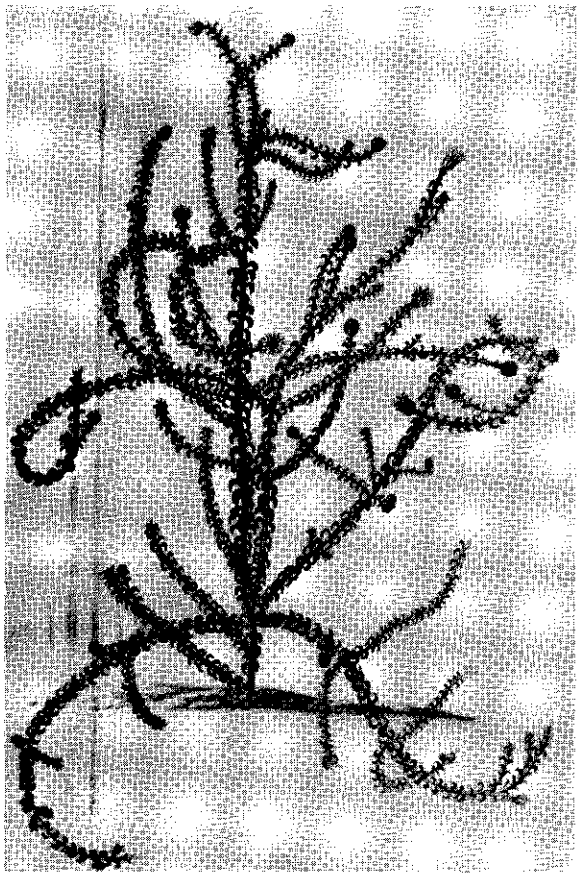
Othonna heterophylla. Atlas 8 t.18

Linné fil. and changed to *Othonna frutescens.* These names are not necessarily synonymous.
Othonna crassifolia L. as usually interpreted is quite a different species with terete, succulent leaves.
Commelin's Plate 74 shows some resemblance to *O. dentata* L. in its leaf-shape and capitula, but there are obvious differences in habit and synflorescence, especially in the bracts.
Commelin's plate is rather similar to the specimen LINN 1038.23 which is annotated *'Othonna frutescens'* by Linné fil. The identity of *O.frutescens* Berg. (an L. ?) is uncertain, but historically it is the most correct name I can use for Commelin's plant.
The names involved need typification in connection with a revision of the genus (Nordenstam, in preparation) and the identification of the plate remains tentative at this stage.
Distribution. South Africa.
Introduction 1699-1700. Commelin credited W.A.van der Stel for the introduction of this plant.

Othonna heterophylla L.f., Suppl. Pl.:387 (1782)
Atlas. 8 t.18. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. South Africa: S.W.Cape.
Specimens seen. Esterhuysen 2973 (BOL); Stokoe 7265 (BOL).

Pentzia suffruticosa (L.) Hutch. ex Merxm., Mitt. Bot. Staatss. München 6:486 (1967)
Atlas. 5 t.27. *Abrotanum africanum fruticans multiflorum, foliis tanaceti duplico minoribus.*
Commelin. Hort. Amst. 2:199 t.100. *Tanacetum africamum fruticans multiflorum foliis tanaceti vulgaris duplico minoribus.*
Artist. Jan Moninckx (1699).
Citations. *Tanacetum suffruticosum* L. 1753:843, [Hort. Cliff.: 398.4, V.Royen:155, ms LINN, Boerhaave 1719,1: 124.6], Bergius 1767:241 'bona', Burm.f. 1768 P.F.C.: 24, Willd. 1803:1810, Ait.f. 1813:1, Sweet 1818:183. *Tanacetum multiflorum* Thunb. – Huth.
Taxonomic notes. *Tanacetum suffruticosum* has its nomen specificum legitimum cited unchanged from Hort. Cliff. No specimen is available in the Clifford herbarium, but as the specimen in the Linnean herbarium LINN 987.11 '6 *suffruticosum*' is a Clifford specimen, I propose it as lectotype.
Distribution. South Africa.
Introduction 1698. The plant was grown from seed received from Africa in 1698.
Specimens seen. LINN 987.11, lectotype; Morris 5733 (K); Acocks 23200 (K); Bayliss 6106 (WAG); Werdermann & Oberdieck 436 (WAG); Pillans 9530 (BOL); Van Royen s.n. (L 900361.27).

Polyarrhena reflexa (L.) Cassini, Dict. Sc. Nat. 56:173 (1828)
Atlas. 3 t.27. *Aster Africanus frutescens, splendentibus & parvis foliis.*
Commelin. Hort. Amst. 2:55 t.28. Idem.
Artist. Not signed (1686-1700).
Citations. *Xeranthemum ciliatum* L. 1753:859, [ms LINN].
Aster reflexus L. 1753:877, [Ray 1704:159], Bergius 1767:285, Burm.f. 1768 P.F.C.:26, Lam. 1783:301, Persoon 1797:801, Willd. 1803:2015, Lessing 1832:87. *Felicia reflexa* (L.) DC. 1836:222 – Huth, Roessler 1959:304.
Polyarrhena reflexa (L.) Cass. 1828:173 – Grau 1970: 356.
Gorteria squarrosa L., Pl. Afr. Rar. 1760:23, Burm.f. 1768 P.F.C.:28, Willd. 1803:2272.
Rohria setosa (L.) Thunb. 1793:101 (fide Roessler l.c.). *Berkheya setosa* (L.) Willd. 1803:2273.
Taxonomic notes. Commelin's Plate 28 was cited by Linnaeus for three names: *Xeranthemum ciliatum* (1753), *Aster reflexus* (1753), and *Gorteria squarrosa* (1760).
Commelin's plate is the only element in Linnaeus' protologue of *Xeranthemum ciliatum* and, therefore, it is the type.



Polyarrhena reflexa. Atlas 3 t.27

Aster reflexus was based by Linnaeus on several elements. Grau (1970:353) designated LINN 997.2 as the lectotype. Cassini transferred *Aster reflexus* in 1828 to *Polyarrhena reflexa,* the name I adopt as the correct one for Commelin's Plate 28.

Gorteria squarrosa was based by Linnaeus on several elements, including Commelin's Plate 28 and so might be considered to be a superfluous name for *Xeranthemum ciliatum* L. However, Linnaeus emphasised that he based *Gorteria squarrosa* on a specimen collected by Oldenland (sent to him through Burman; see preface to Pl. Rar. Afr.) because he mentions Oldenland as the discoverer in the protologue. Typification of *Gorteria squarrosa,* therefore, ought not to be based on Commelin's plate. I propose as the lectotype a specimen in Herb. Burman (G) cited by Roessler in his monograph of *Cullumia* (1959:298) and not LINN 1027.4 as was proposed by Roessler (1959:297). Rejection of Roessler's choice is necessitated by the following considerations. *Gorteria squarrosa* L. dates from 1760 (Pl. Afr. Rar.) and not from 1763 (Am. Ac. 6) as Roessler supposed when designating the type. Plantae Africanae Rariores was largely based on specimens forwarded by Burman, the specimen in the Burman herb. (G) may have originated from Oldenland. At present there is no way of tracing Oldenland's specimens but as Burman's herbarium represents the link with Pl. Afr. Rar. a type specimen ought to be taken from Burman's collection and not from LINN. Any other choice would reduce *Gorteria squarrosa* to a synonym of *Xeranthemum ciliatum* L.

At present *Gorteria squarrosa* is currently named *Cullumia squarrosa* (L.) R.Br. I note that *Cullumia ciliata* (L.) Druce (1914:416) which was intended to replace *Cullumia decurrens* Less. is, actually, a synonym of *Polyarrhena reflexa* (L.) Cass.

Later authors (Thunberg, Willdenow) cited Commelin's t.28 for *Rohria setosa* (L.) Thunb. and for *Berkheya setosa* (L.) Willd. respectively. Both authors recombined *Gorteria setosa* L. (1771).

At present *Gorteria setosa* is *Cullumia setosa* (L.) R.Br., typified by LINN 1027.6 as proposed by Roessler (1959:282).

Distribution. South Africa: S.W.Cape.

Introduction ante 1699. Commelin did not specify the source of his plant. He described it as very tender. It was propagated annually by cuttings. No earlier record of this species is known to me, nor do I know it to be at present in cultivation.

Specimens seen. LINN 997.2, lectotype; Grubb s.n. (SBT); Kallstroem 'ex Anglia' (SBT); Thunberg s.n. (SBT).

Senecio elegans L., Sp. Pl.:869 (1753)

Atlas. 3 t.29. *Aster Africanus annuus senecionis foliis.*

Commelin. Hort. Amst. 2:59 t.30. Idem.

Artist. Jan Moninckx (1698-1700).

Citations. *Senecio elegans* L. 1753:869 – not cited in the protologue – [ms LINN], Linn. 1763:1218, Willd. 1803:1990, Huth.

Taxonomic notes. Commelin's Plate 30 is more typical of *Senecio elegans* than Plate 31, although the former is not cited in the Linnean protologue and the latter is. In nature this species behaves as an annual, but in cultivation it may be kept for two or more years (cf. Harvey 1865:361).

Introduction. Commelin raised his plant from seed, received in 1698 from the Cape (cf. Commelin 1701: 57).

Senecio elegans L., Sp. Pl.:869 (1753)

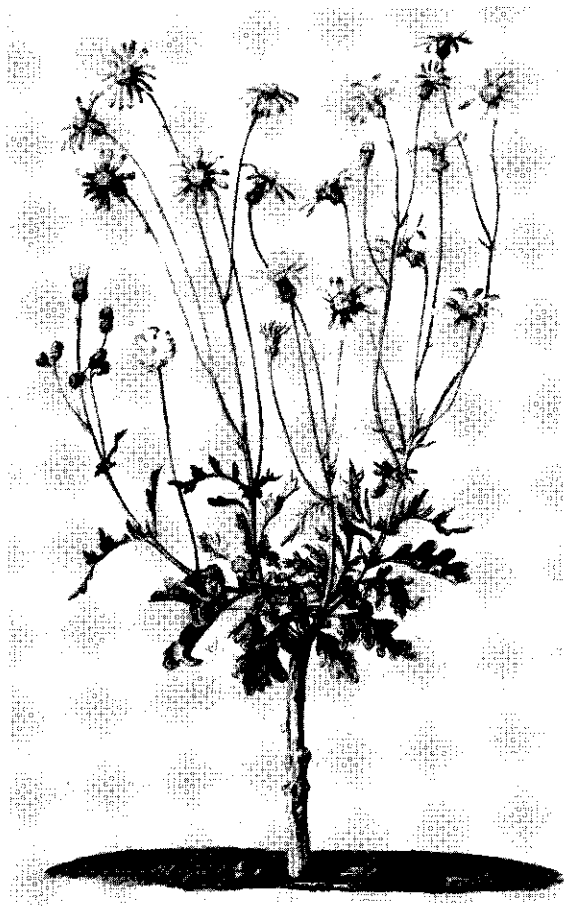
Atlas. 3 t.30. *Aster Africanus frutescens, foliis senecionis crassioribus.*

Commelin. Hort. Amst. 2:61 t.31. Idem.

Artist. Jan Moninckx (1698-1700).

Citations. *Senecio elegans* L. 1753:869, [Hort. Cliff.: 406.4, Hort. Ups.:260.2], Kippist in Harvey, Fl. Cap. 1865,3:361 'Commelin's wretched plate'.

Taxonomic notes. The nomen specificum legitimum for *Senecio elegans* in Sp. Pl. is cited from Hort. Cliff. and Hort. Ups. Two vouching specimens are present in the



Senecio elegans. Atlas 3 t.30

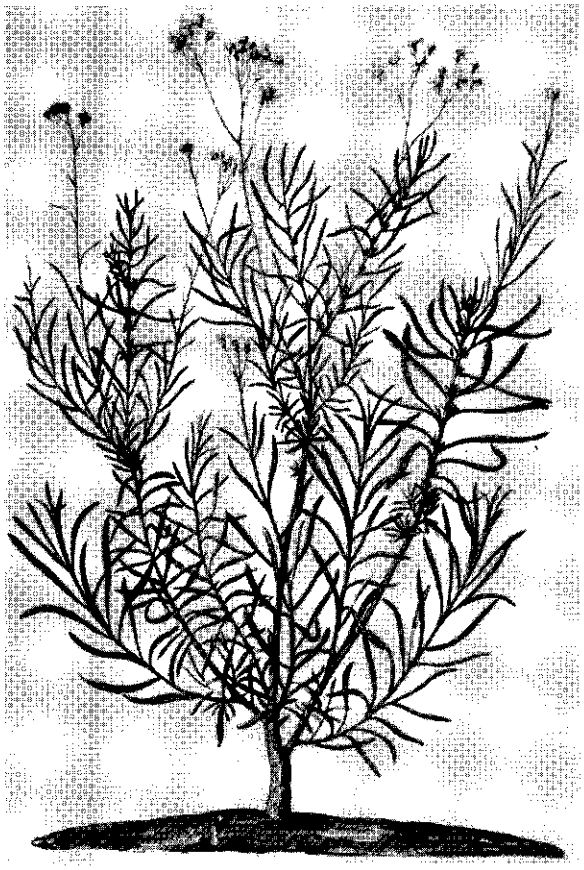
Clifford herbarium (BM), but LINN 996.31 *'elegans* 13' was designated as the type by Kippist in Harvey. Commelin's Plate 31, with its succulent leaves, is less typical of *S.elegans* than Plate 30. Linnaeus cited Plate 31 in the protologue of *S.elegans*, and not t.30. Plate 31 probably represents a plant from the coastal populations of *S.elegans* L. Linnaeus (1763:218) published *S. elegans* β for Volckamer's t.225. Commelin's Plate 31 is very similar to Volckamer's.
Distribution. South Africa.
Introduction. Commelin received this plant in flower from Gerbrand Pancras, in 1698 or later.
Specimens seen. H.S.C. 406.4 (BM); LINN 996.31; Bayliss 651 (WAG); Schlieben & Ellis 311 (WAG); Wijnands 588, culta (WAG).

Senecio ilicifolius L., Sp. Pl.:871 (1753)

Atlas. 7 t.7. *Jacobaea africana frutescens, foliis incanis incisis & subtus cinereis.*
Commelin. Rar. & Exot. 42 t.42. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Senecio ilicifolius* L. 1753:871, [Hort. Cliff.: 406.7, ms LINN, Seba 1734,1:34 t.22 f.4], Bergius 1767:281 '?', Burm.f. 1768 P.F.C.:26, Miller 1768, Willd. 1803:2012 *'illicifolius'*, Ait.f. 1813:47, Sweet 1818:187, Salm-Dyck 1834:254, Huth.
Taxonomic notes. *Senecio ilicifolius* is based on Hort. Cliff. 406.7, the corresponding specimen in H.S.C. is proposed as lectotype, it is annotated with Commelin's phrase-name.
Distribution. South Africa.
Introduction ante 1706. Commelin gives no information on the source of his plant. I know of no earlier record of this species. It is not in cultivation at present.
Specimens seen. H.S.C. 406.7, lectotype (BM); LINN 996.69 '26'; Bos 714 (K, WAG); Bayliss 7724 (WAG); Dahlstrand 3150 (K); Schlieben & Ellis 12322 (WAG); Ecklon & Zeyher 302, 544 (SAM); Esterhuysen 6635 (BOL); Schlechter 2225 (S); Thunberg s.n. (SBT).

Senecio linifolius L., Syst. Nat. ed.10:1215 (1759)

Atlas. 4 t.19. *Jacobaea Africana frutescens Lavandulae-folio latiori.*
Commelin. Hort. Amst. 2:141 t.71. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Senecio linifolius* L. 1759:1215, [ms LINN, letter to J.Burman 4-11-1758 ed. Van Hall 1830:28]. *Senecio longifolius* L. 1763:1222-3, Bergius 1767:279, Burm.f. 1768 P.F.C.:26, Willd. 1803:2009, Ait.f. 1813: 46, Sweet 1818:187, DC. 1837:400, Huth.
Taxonomic notes. *Senecio linifolius* L. 1759 is based on specimens from the Cape, sent by Burman to Linnaeus. In Linnaeus' letters to Burman of ? 1757 and 4-10-1758 (ed. Van Hall 1830:16 and 28) these specimens are numbered '9' and '22'. I have not found specimens with these numbers in the Linnean herbaria nor in Burman's herbarium in Geneva (G). I did find eight specimens in Herb. Burman (G) named *'Senecio linifolius'* and one *'Senecio longifolius'*.
In my opinion these nine sheets represent four species. Three sheets represent the plant currently known as *Senecio longifolius.* One of these I have chosen as lectotype of *S.linifolius* and I labelled it as such. Commelin's plate now becomes a paratype. At present the name *Senecio linifolius* L. is used for a plant of Southern Spain, the Baleares and Morocco (Chater & Walters 1976:195). *Senecio longifolius* L. is by current opinion the South African species pictured by Commelin. I consider this nomenclature to be untenable. As shown above *S.linifolius* L. 1759 rests entirely on Cape specimens. *S.linifolius* L. as treated in Flora Europaea must be interpreted as *S.linifolius* (L.) L., Sp. Pl. ed.2, 1763:1220 based on *Solidago linifolia* L. 1753:881. This name would be typified by H.S.C. 410.9 if such a specimen would be available. There is, however, no specimen present, although the entry has a tick in the copy of Hortus Cliffortianus at BM, indicating that a specimen was entered into the Clifford herbarium.



Senecio linifolius. Atlas 4 t.19

Of the remaining syntypes the reference to Bauhin's Pinax does not help; no specimen is found in the Burser herbarium (UPS). Boccone's illustration t.49 (1697) is proposed here as the lectotype of *Solidago linifolia* L.

When Linnaeus transferred this *Solidago* to *Senecio* (1763) he probably realised that an earlier *S.linifolius* (1759) existed. So, he made a superfluous nomen novum, *S.longifolius* L., for the South African plant and omitted to refer to *S.linifolius* 1759.

I see no other way than to use *S.linifolius* L. for Commelin's plant. I have not found an available substitute name for *S.linifolius* (L.) L. 1763. Rather than leave it with an illegitimate name I propose for it *Senecio lythroides* Wijnands nom.nov. I am well aware of the risk that an earlier valid name may exist in the literature but it will take a monograph of *Senecio* to establish a final solution. Pending the publication of a *Senecio* study establishing certainty about the correct names, *S.lythroides* may serve at least till that day and replace *S.linifolius* (L.) L. for the W.Mediterranean taxon, which name is against the Code.

Senecio lythroides Wijnands, *nomen novum* for *Senecio linifolius* (L.) L., Sp. Pl. ed.2:1220 (1763); lectotype: Boccone, Museo di piante . . . t.49 (1697); non *Senecio linifolius* L., Syst. Nat. ed.10:1215 (1759); type: herb. Burman s.n. (G), paratype Commelin 1701:141 t.71.

Note on the plate. Commelin's plate is commonly cited as *'Jacobaea . . . latiore et angustiore'. 'Angustiore'* is from Commelin's text where he mentioned two plants. *'Latiore'* is the plant he described and illustrated, *'angustiore'* is another plant cultivated in Amsterdam which Commelin declared to represent Breyne 1678 t.63. Klinsmann (1855:11) interpreted Breyne's plate as *Senecio longifolius.*

Distribution. Southern Africa, including the Cape.

Introduction ante 1701. Commelin gave no information on the source of this plant. The species is not common in cultivation at present.

Specimens seen. For *Senecio linifolius* L.: Herb. Burman s.n., lectotype (G); Bayliss 7508 (WAG); Brink 205 (K); Wells 2611 (L); Wijnands 570 and 589, culta (WAG); Ecklon & Zeyher 2978 (SAM); Thunberg s.n. (S); herb. Alstroemer *'Senecio linifolius'* corrected by Linn.f. to *'longifolius'* (S-Linn).

For *Senecio lythroides* Wijnands: Brandt 996, Malaga (S); Een s.n., Granada (S); Lindahl s.n., Ibiza (S); Van Prehn Wiese 630, Guadelest (WAG); Roivanen s.n., Mallena (S); Wall s.n., Alicante (S); J.de Wilde c.s. 2715, Morocco (L, WAG); Bayer 32 (L); Boom 11370 (L); Durando s.n. (L); Rouy s.n. (L).

Senecio rigens L., Sp. Pl. ed.2:1224 (1763)

Atlas. 4 t.20. *Jacobaea Africana frutescens folio longo & glauco.* [Pl.27]

Commelin. Hort. Amst. 2:143 t.72. Idem.

Artist. Not signed (1699-1700).

Citations. *Senecio rigens* L. 1763:1224, [Ray 1704:74], Burm.f. 1768 P.F.C.:26.

Othonna parviflora Bergius 1767:335, [ms LINN], Linn. 1771:289, Persoon 1797:836, Ait.f. 1813:178, DC. 1837:476, Huth.

Taxonomic notes. *Othonna parviflora* Bergius is not a synonym of *O.parviflora* L.1771 (fide Levyns 1941: 143). *Othonna quinquedentata* Thunb. was suggested as the correct name for *O.parviflora* L. Levyns did not give an opinion as regards the identity of *O.parviflora* Berg. I studied the type of this name, designated here, Grubb s.n. 'e Cap. b.sp.' (SBT) together with Professor B.Nordenstam. This specimen represents the species known at present as *Othonna amplexicaulis* Thunb. A label, identified by Dr L.Kers as probably in Wikström's handwriting, confirms this identification. Since Bergius published his species in 1767 and Thunberg his in 1800, *Othonna parviflora* Bergius is the correct name for this species. I do not consider the later use of the name *Othonna parviflora* sensu Linnaeus (now *O.quinquedentata* Thunb.) sufficient reason to propose *O.parviflora* Bergius as eligible for rejection under article 69 of the I.C.B.N.

Senecio rigens L. 1763 was combined as *Othonna rigens* (L.) Levyns in Adamson & Salter (1950). There was, however, already an *Othonna rigens* L., Pl. Rar. Afr. 1760, No.80, which is *Gazania rigens* (L.) Gaertner 1791 (based on *Gorteria rigens* L. 1763). Nordenstam (1961:279) originally considered *Othonna amplexicaulis* Thunb. to be the correct name for *Senecio rigens* L. 1763, but as shown above, *Othonna parviflora* Berg. is the correct name. Professor Nordenstam (private communication) agrees with this conclusion.

It should be noted that the Linnean specimen LINN 996.77 '27 *Senecio rigens*' has no relation to the taxon *Senecio rigens* L. It is most likely an isoparatype of *Senecio rigidus* L., see the discussion of that species.

Another name to be considered is *Senecio vestitus* Bergius (1767:283). Bergius was in doubt whether or not his species was the same as *Senecio rigens* L.; but in his opinion Commelin's Plate 72 was clearly a different species. The type of *Senecio vestitus* Berg., designated here, Grubb s.n. 'e Cap. b.sp.' (SBT) is not an *Othonna* but represents the species known at present as *S. vestitus* Berg. I have seen collections of Drège, Goldblatt and Thunberg of this species in S.

The type of *Gorteria rigens* L. 1763 was designated by Roessler (1959:371) as LINN 1027.3. Since *Gorteria rigens* is a combination of *Othonna rigens* L. 1760 which was based on Oldenland's specimen in Burman's herbarium (G), the Burman specimen cited by Roessler (1959:374) is a more appropriate lectotype, however. The presence of some lower involucral bracts and the shape of the pappus in Moninckx's water-colour exclude Commelin's plant from *Othonna;* it is a true *Senecio,* identified by Professor Nordenstam as *S. lanceus* Ait.

In the absence of a specimen, the typification of *Senecio rigens* L. rests upon the references in the protologue to: Commelin, Volckamer, and Ray. Ray gave a description only, a vouching specimen might be preserved in BM but as Linnaeus did not study Ray's herbarium such a specimen cannot typify the name anyway. Commelin's and Volckamer's plants are conspecific; their phrase-names are almost identical and their plants probably had the same origin. Since the Linnean nomen specificum legitimum is in agreement with Commelin's plate and text, and since Linnnaeus cited Commelin's phrase as the first synonym, I propose Commelin's Plate 72 as the lectotype of *Senecio rigens* L. In consequence, *Senecio rigens* L. is the correct name for the species known at present as *Senecio lanceus* Ait.

The above discussion boils down to:

Senecio rigens L. 1763:1224
  lectotype: Commelin Hort. Amst. 2:143 t.72
  syn. nov.: *Senecio lanceus* Ait. 1789:494.
  type: Hort. Kew 1775 ex Seminibus Capensibus (BM, photo).

Othonna parviflora Bergius 1767:335
  type: Grubb s.n. (SBT)
  syn.: *Othonna amplexicaulis* Thunb. 1800
    Othonna rigens Levyns in Adamson & Salter 1950 non L.

Othonna quinquedentata Thunb.
  syn.: *Othonna parviflora* L. non Berg.

Gazania rigens (L.) Gaertner 1791
  syn.: *Gorteria rigens* (L.) L. 1763
    Othonna rigens L. 1760
  type: ?Oldenland in herb. Burman (G).

Distribution. South Africa: S.W.Cape.

Introduction 1698. Commelin grew his plant from seed received from 'Africa' (the Cape) in 1698. Aiton (l.c.) attributed the introduction to Masson in 1774.

Specimens seen. Bolus 5081 (BOL); Salter 7143 (BOL); Schlechter 621 (BOL); Wilman 215 (BOL).

Senecio rigidus. Atlas 4 t.23

Senecio rigidus L., Sp. Pl.:872 (1753)

Atlas. 4 t.23. *Jacobaea Africana frutescens foliis rigidis & hirsutis.*

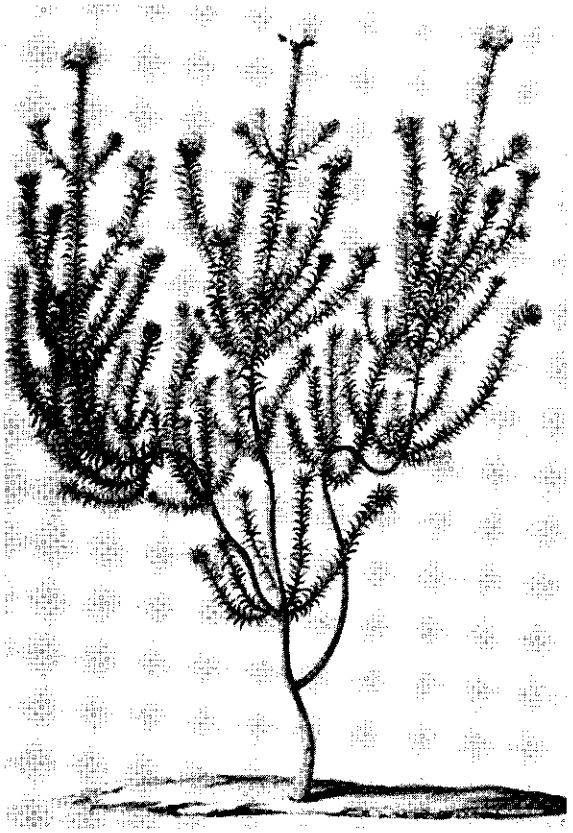
Commelin. Hort. Amst. 2:149 t.75. Idem.

Artist. Not signed (1697-1700).

Citations. *Senecio rigidus* L. 1753:872, [Hort. Cliff.: 406.6, V.Royen:164.5, ms LINN, Ray 1704:175.4, Boerhaave 1719,1:98.6, Seba 1734,1 t.22], Miller 1768, Willd. 1803:2013, Ait.f. 1813:47, Sweet 1818:187, DC. 1837:392, Huth.

Sonchus tenerrimus. Atlas 8 t.14

Taxonomic notes. The nomen specificum legitimum for *Senecio rigidus* in Sp. Pl. is cited from Hort. Cliff. and V.Royen. It reads *'Senecio corollis radiantibus, foliis cordato-oblongis amplexicaulibus scabris acuminatis serratis, caule fruticoso'.* The vouching specimen in H.S.C. 406.6 is proposed here as the lectotype.
There is a specimen in the Linnean herbarium in Stockholm originating from Burman that Linnaeus annotated as '26 *rigidus*'. The specimen was formerly part of the herbarium Alstroemer. An identical specimen is found in the Linnean herbarium at London, LINN 996.77, it is annotated '27 *rigens*'. There are two *Senecio* 26 in Sp. Pl., viz. *S.ilicifolius* and *S.rigidus,* so that 27 is the correct number for *S.rigidus.* '27' is written in a different ink than *'rigidus'.* Both specimens are sterile and, therefore, do not qualify for typification. The other Linnean specimens of *S.rigidus* L., viz. LINN 996.70 and 996.71 are not annotated with the no.26 recte 27 in Sp. Pl.
Distribution. South Africa: Cape.
Introduction 1697. Commelin's plant was grown from seed, received in 1697 from 'Africa' (the Cape). No earlier record of the species is known. *Senecio rigidus* is not in cultivation at present.
Specimens seen. '26 *rigidus*' (S-Linn); '27 *rigens*' (LINN 996.77); Goldblatt 2144 (WAG); Hornstedt s.n. (SBT); Werdermann & Oberdieck 66 (WAG); Wilms 318 (AMD); Esterhuysen 26776 (BOL); Bolus 3064 (BOL); D.Van Royen s.n. (L 90159.471).



Stoebe aethiopica. Atlas 8 t.24

Sonchus tenerrimus L., Sp. Pl.:794 (1753)
Atlas. 8 t.14. No name.
Commelin. Not published by Commelin.
Annotations on the water-colour read 'Boerhaave pag. 116' and 'V.Royen pag.169'.
Artist. Not signed (1686-1706).
Taxonomic notes. No name occurs on page 116 of Boerhaave's Index or on p.169 of Van Royen's Prodromus which would explain the annotations.
The pinnatisect leaves with strongly constricted lobes in the water-colour clearly point to *Sonchus tenerrimus* L. Boulos (1973:158) typified this name by LINN 949.9.
Distribution. Azores, Mediterranean area, Iran (see Boulos 1973:160 for a map).
Specimens seen. LINN 949.9; Ross 750 (WAG); Segal 327 (WAG); W.de Wilde c.s. 8647 (WAG).

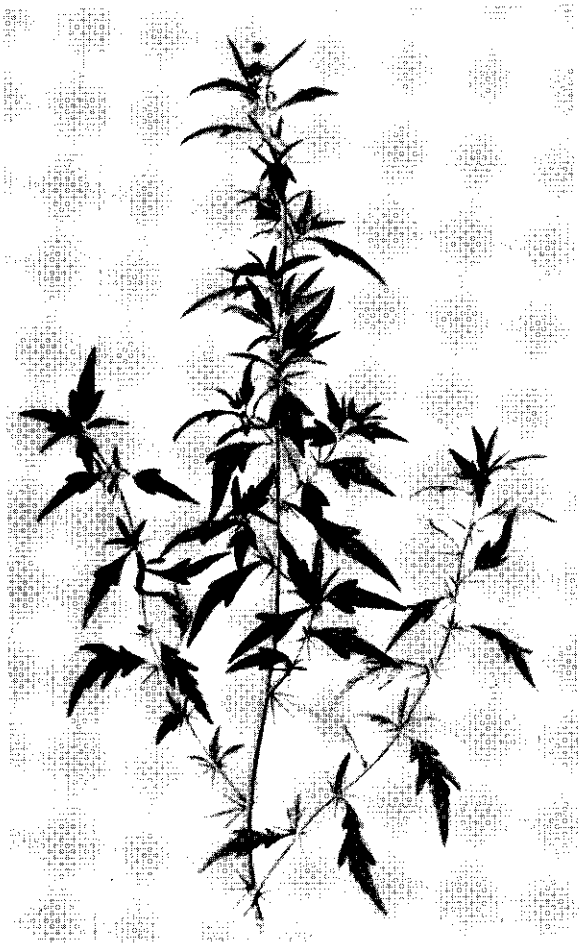
Stoebe aethiopica L., Sp. Pl.:831 (1753)
Atlas. 8 t.24. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic note. A specimen of *Stoebe aethiopica* in herb. Burman (G) is annotated *'Selago* [*prunastri* deleted] *spinosa'.* I propose this specimen as the type

of *Selago spinosa* Burm.f., Florae Capensis Prodromus 1768:28.
Distribution. South Africa.
Specimens seen. Galpin 11208 (PRE); Hall 4516 (PRE); Pillans 9681 (PRE); Goldblatt 4058 (WAG).

Ursinia paleacea (L.) Moench, Meth. Pl.:608 (1794) [Pl.19]
Atlas. 3 t.31. *Asteroplatycarpos Africana frutescens Crithmi Marini foliis.*
Commelin. Hort. Amst. 2:63 t.32. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Othonna abrotanifolia* L., Sp. Pl.:926 – not cited in the protologue – Linn. 1763:1310, [ms LINN, Ray 1704:161, Burman 1738:149], Burm.f. 1768 P.F.C.:29 '25', Willd. 1803:2375, Ait.f. 1813:176.
Cineraria abrotanifolia (L.) Bergius 1767:292.
Euryops abrotanifolius (L.) DC. 1837:443 – Nordenstam 1968:272.
Euryops abrotanifolius var. *eriodesmus* DC. 1837:443, Huth.
Taxonomic notes. *Asteroplatycarpos* is a new genus proposed by Caspar Commelin for this plant.
Nordenstam (l.c.) designated LINN 1038.5 as the lectotype of *Othonna abrotanifolia* L. No authentic specimen of Adriaen van Royen is available in L. Var. *eriodesmus* DC. includes the type.
Commelin's plant does not belong to the genus *Euryops*. In general habit it resembles *E.abrotanifolius*, but the wide membranaceous appendages of the involucrum establish it as an *Ursinia*. Professor Nordenstam recognised it as such from the water-colour. It was fortunate that he was able to examine the original water-colour and so could correct the erroneous cited plate published under *Euryops* in his monograph of the genus.
Commelin's plant is best matched with the species known as *U.crithmoides* (Berg.) Poir. Prassler used this name in her monograph (1967:411-416) and not *U.paleacea* (L.) Moench, although *Arctotis paleacea* L. (Pl. Afr. Rar. 1760, no.84) has priority over *Arctotis crithmoides* Bergius (Descr. Pl. Cap. 1767:326). Prassler rejected *Arctotis paleacea* as a nomen ambiguum since the epithet has been used for the species correctly named *U. subflosculosa* (DC.) Prassler. I see no reason to reject the name as its correct application is not ambiguous.
Arctotis paleacea L. is not vouched by a specimen in Burman's herbarium (G), on which many species described in Pl. Afr. Rar. were based. Both Linnaeus (1760) and Burman (1768:28) cited *Aster foliolis integris angustis, flore magno, luteo* J.Burman 1739:176 t.65 f.1 for *Arctotis paleacea*. I cannot identify this plate, but it does not belong to *Ursinia paleacea*. I have not found a specimen that could have been the basis for Burman's plate in his herbarium.
Two specimens of *Ursinia paleacea* in Burman's herbarium are annotated as *Arctotis trifurcata*. This name was published by N.L.Burman in Florae Capensis Prodromus 1768:28. Prassler overlooked this name in her revision of *Ursinia*. As lectotype of *Arctotis paleacea* Burm.f. I selected a specimen in herb. Burman (G). Burman (1768) considered *A.paleacea* and *A.trifurcata* to be distinct species.
As lectotype of *Arctotis paleacea* I propose LINN 1036.17 *'Arctotis paleacea'*.
Distribution. South Africa: S.W.Cape (see Prassler 1967: 470, map 16).
Introduction ante 1700. Commelin grew his plant from seed received from 'Africa' (the Cape).
Specimens seen. Herb. Burman, lectotype of *Arctotis trifurcata* (G); Herb. Bergius, type of *Arctotis crithmoides* (SBT); LINN 1036.17, lectotype of *Arctotis paleacea;* Andersson s.n. (S); Coppejans 1521 (WAG); Esterhuysen 11955 (BOL); Rogers 26478 (G); Schlechter 712 (G); Salter 6988 (BOL); Wall s.n. (S); Werdermann & Oberdieck 237 (WAG).

Verbesina alata L., Sp. Pl.:901 (1753)
Atlas. 1 t.44. *Chrysanthemum Cannabinum Americanum alatum, Flore aphyllo globoso aurantio, foliis Baccharidis.* Breynii Prod:2 (Breyne 1689:32).
Chrysanthemum Conyzoides, alato caule Curassavicum. Herm: Parad: Batav: Prod: (Hermann 1689:323).
Dutch: Amerikaanse Chrysanthemum, met een gevleugelde steel, breede Bladeren, en ronde gebolde oranjeverwige Blommen.
Commelin. Hort. Amst. 1:5 t.3. *Chrysanthemum americanum caule alato, flore aphyllo, globoso, aurantio, foliis baccharidis.*
Dutch: Americaansche oranje-verwige gansebloemen, met gevleugelde steelen, bolwyse, en bladerloose bloemen.
Artist. Jan Moninckx (1686-1690).
Citations. *Verbesina alata* L. 1753:901, as 't.13', [Hort. Cliff.:411.1, Hort. Ups.:267.1, ms LINN, Fabricius 1763: 151, Volckamer 1700 t.106, Boerhaave 1719:123, Burman 1737:57], Willd. 1803:2222, Poiret 1808:544, Huth, Stearn 1961:LI.
Taxonomic notes. The diagnosis of *Verbesina alata* is cited from Hort. Cliff. The specimen in H.S.C. 411 is proposed as lectotype.
Distribution. Antilles.
Introduction ante 1689. Commelin grew the plant from seed received from Curaçao; no year is given.
Hermann and Breyne provided the first records of this species in cultivation. Breyne saw the plant in Fagel's garden and in Amsterdam. Hermann (1698) illustrated the species on t.125.
Specimens seen. H.S.C. 411, lectotype (BM); '1 *alata*' LINN 1021.1; A.v.Royen (L 90192-463 and 470); Bijhouwer 164 (WAG); Rutten-Pekelharing 18 (U).

Xanthium spinosum L., Sp. Pl.:987 (1753)
Atlas. 8 t.30. No name.
Commelin. Not published by Commelin.

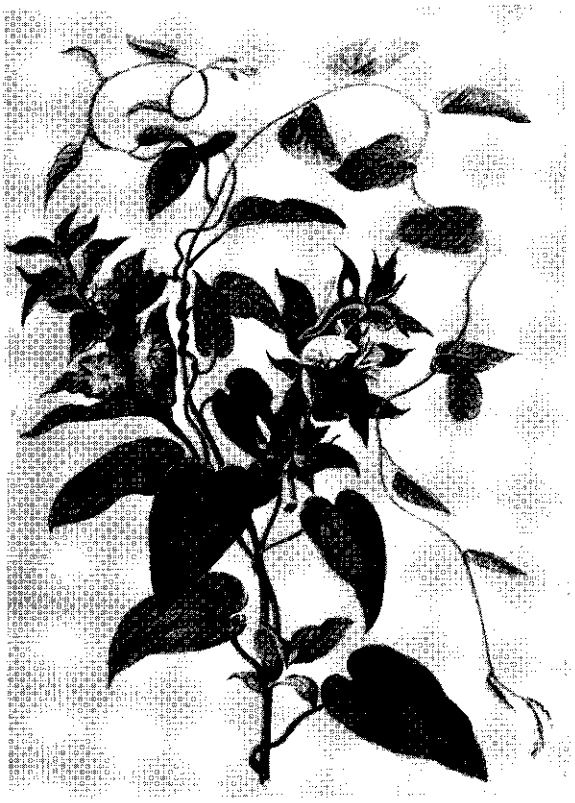


Xanthium spinosum. Atlas 8 t.30

Artist. Alida Withoos (1694).
Distribution. South America originally, widely naturalized in ruderal habitats all over the world.
Linnaeus gives as habitat 'Lusitania', based on Plukenet 1692 t.239 *'Xanthium lusitanicum spinosum'.* Magnol (1697:208) knew the species from Montpellier in 1695.
Introduction ante 1687. The water-colour was made in 1694.
The species was grown by Hermann in Leiden as *'Xanthium lusitanicum spinosum'* from seed sent by Tournefort (Hermann 1687 app. 1698 t.246). Volckamer (1700) illustrated it on t.408.
Specimens seen. *'spinosum* 2', type, LINN 1113.3; Segal 430, Corsica (WAG); J.de Wilde c.s.1848, Morocco (WAG); H.A.de Wit 321, Turkey (WAG).

CONVOLVULACEAE

Convolvulus canariensis L., Sp. Pl.:155 (1753)
Atlas. 3 t.49. *Convolvulus canariensis semper virens, foliis mollibus & incanis, floribus ex albo purpurascentibus.*



Convolvulus canariensis. Atlas 3 t.49

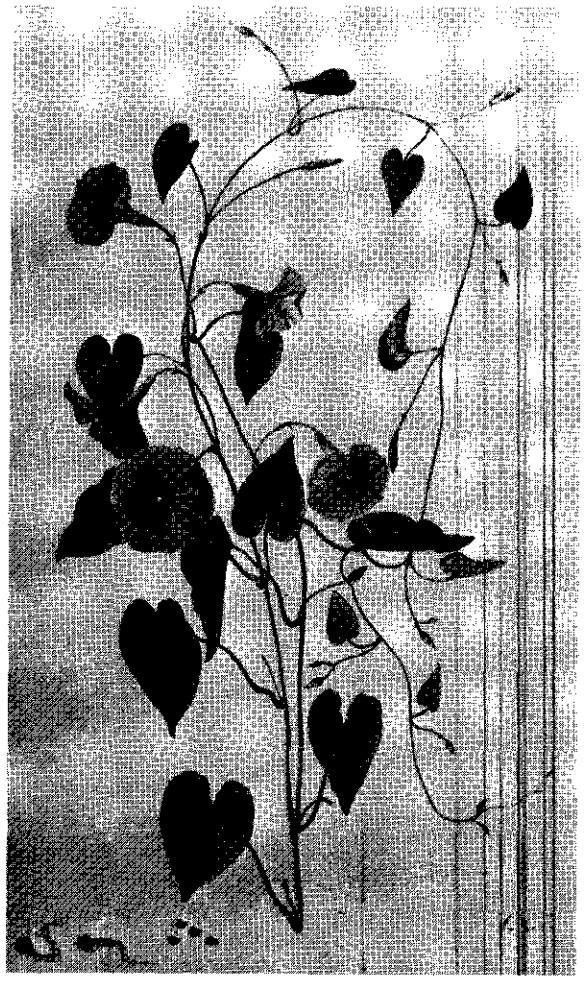
Commelin. Hort. Amst. 2:101 t.51. Idem.
Artist. Jan Moninck (1686-1700).
Citations. *Convolvulus canariensis* L. 1753:155, [Hort. Cliff.:67.4, ms LINN, Boerhaave 1719,1:245.3], Miller 1768, Willd. 1797:858, Webb & Berth. 1844:25, Huth.
Taxonomic notes. Sa'ad 1967:248 designated LINN 218.17 as type of *Convolvulus canariensis.* No specimen is available in BM that vouches for Hort. Cliff.: 67.4.
Distribution. Canary Islands: Tenerife, Gran Canaria, Palma, Gomera, Hierro.
Introduction ante 1692. No year of introduction is given, the garden had it 'for some time already'. Plukenet, cited by Commelin, illustrated it in 1692 t.325 f.1. The species is in cultivation nowadays.
Specimens seen. LINN 218.17; Bourgeau 1428 (WAG); Dinn 252 (WAG); Sventenius s.n. (Tafira); Wijnands 626 (WAG); Asplund 1171 (S).

Ipomoea batatas (L.) Lam., Tabl. Encycl. Méth. (Bot.) 1:465 (1793)
Atlas. 8 t.2. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Distribution. Widely cultivated, the wild form is probably native in Mexico.
Introduction. Hermann (1689:325) had *'Convolvulus*

Indicus radice tuberosa eduli cortice rubro Batattas dictus', most likely this is *Ipomoea batatas.*

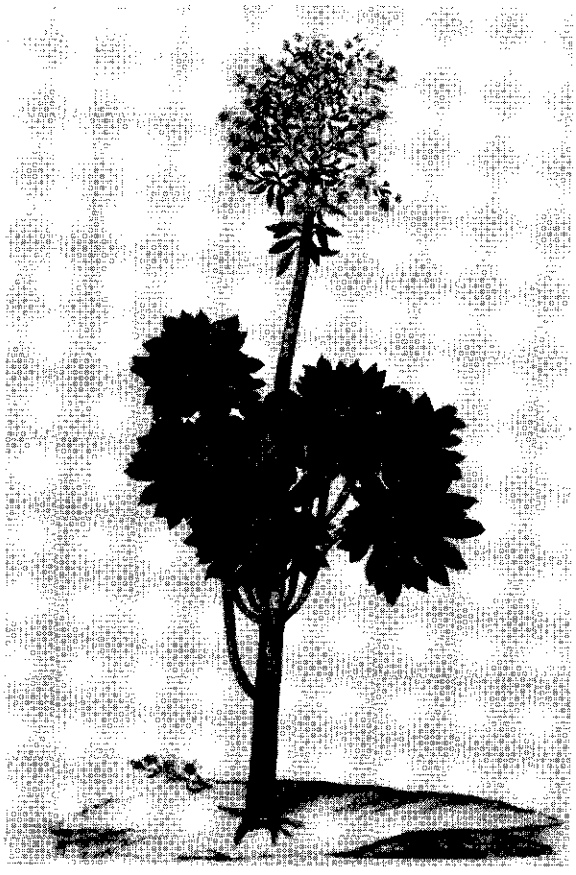
Ipomoea coccinea L., Sp. Pl.:160 (1753)
Atlas. 6 t.37. *Quamoclit Americana hederae folio flore Coccineo.*
Commelin. Rar. & Exot.:21 t.21. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Ipomoea coccinea* L. 1753:160, [Hort. Cliff.: 66.2, Hort. Ups.:39.1, V.Royen:429, ms LINN, Boerhaave 1719,1:247, Tilli 1723:141], Burm.f. 1768 Fl. Ind.:49, Miller 1768, Aublet 1775:144, Willd. 1797: 880.
Quamoclit coccinea (L.) Moench 1794 – Huth, Hallier f. 1899:415.
Taxonomic notes. *Ipomoea coccinea* has the nomen specificum legitimum cited from Hort. Ups.; LINN 219.3 '4 *coccinea*' is not annotated 'HU' but I think it serves well as lectotype. It is an excellent match to Commelin's plate. The fruiting pedicels are almost not reflexed, in this species they are usually strongly reflexed. The specimen H.S.C. 66.2 is too young to show this character but probably represents this species as does V.Royen s.n. (L 901161-388), which is annotated by the younger Van Royen so does not qualify for typification.
This continental North American species is often confused with *I.hederifolia* L. 1759:925, a West Indian species (*Ipomoea coccinea* Griseb. 1862). Plumier 1693:89 t.103, cited in the protologue of *I.coccinea*, belongs to *I.hederifolia.* The plants for which Burman f. and Aublet cited Commelin also belonged to *I.hederifolia.* Its type is Plumier ed. Burman t.93 f.2, designated by Austin in Dassanayake and Fosberg (1980:325).
Distribution. N.Mexico, Arizona.
Introduction ante 1705. Commelin gives no information on the source of his plant. The species is probably represented in the Codex of the Duchess of Beaufort 1 t.30 f.1.
Specimens seen. '4 *coccinea*' LINN 219.3, lectotype; H.S.C. 66.2 (BM); D.v.Royen s.n. (L); Sears 2089 (S).

Ipomoea ochracea (Lindl.) G.Don var. **curtissii** (House) Stearn, Proc. Linn. Soc. Lond. 170:145 (1959)
Atlas. 2 t.2. *Convolvulus americanus pilosus, flore luteo, umbone purpureo.*
Dutch: Hayrige americaansche winde, met een geele bloem, en purpur-verwige schild.
Commelin. Hort. Amst. 1:15 t.8. Idem.
Artist. Jan Moninckx (1690-1691).
Citations. Linnaeus – ms LINN no annotation. Huth – no interpretation.
Taxonomic notes. The plate is never mentioned in literature as far as can be ascertained. It belongs to the *Ipomoea obscura*-complex as defined in Fl. W. Trop. Afr. 2:349 (1963). It is, however, large-flowered and



Ipomoea ochracea var. *curtisii.* Atlas 2 t.2

thus belongs to *I.ochracea* or *I.fragilis* Choisy (= *I.obscura* (L.) Ker-Gawl. var. *fragilis* (Choisy) Meeuse), considered by Verdcourt (in F.T.E.A. 4,2:117) as the taxon where *I.obscura* merges with *I.ochracea.* In the editor's notes in Commelin the plant is considered to be close to a plant in the Hortus Beaumontianus. This latter plant is depicted in Seba 2 t.80 f.3 (1735); the original drawing is in the Icones collection of the Rijksherbarium Leiden no.940-123-27 S.D.M.-1690. This plant is said to be introduced from Guinea and belongs to *I.ochracea.* The drawing was made in the Hortus Beaumontianus and the plant is listed in Kiggelaer's catalogue (*Convolvulus Africanus seu guinensis pumilis sagittae foliis fl. campanulato obsoleti luteo fundo purpurascente*). As Commelin's plant is said to be of American origin I place it under var. *curtissii.* The plate differs from its type (Curtiss 562 Cuba 12-12-1904, L, isotype!) in the lower number of flowers in the inflorescence. Meeuse (1956 t.1221) stated that young plants are 1-3-flowered and plants under unnatural conditions some-



Aeonium arboreum. Atlas 7 t.43

times have solitary flowers. The variety is considered to be the naturalised *I.ochracea* in the West Indies. Would it really have already become naturalized there 114 years before the type-collection? The plant was grown from seed sent in 1690 from America. Stearn (1959:145) stated that the American plant differs from the African one in having glabrous seeds. *I.micrantha* which belongs to the *I.obscura*-complex, has glabrous seeds also.
Distribution. The American variety is known from Cuba, Jamaica and Panama, it is not treated for the Lesser Antilles by Powell 1979.
Introduction. Commelin raised his plant from seed, received from America in 1690.
Specimen seen. Curtiss 562, Havana, isotype (L).

CRASSULACEAE

Aeonium arboreum (L.) Webb & Berth., Phyt. Canar. 3,2(1):185 (1840)
Atlas. 7 t.43. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. Morocco.
Introduction ante 1600. This species was known to Clusius and Dodoens.
Specimen seen. Gattefossé s.n. anno 1935 (K).

Aeonium canariense (L.) Webb & Berth., Phyt. Canar. 3,2(1):196 (1841) [Pl.33]
Atlas. 4 t.45 & 46. *Sedum canarinum foliis omnium maximis.*
Sedum majus canarinum acaulon, pilis ad oras foliorum hispidis argenteo lucidis fimbriatum. Pluck. Phytog. tab. 314 f.1 (Pluk. 1694 t.314 f.1).
Corozone celio canariensibus ab insulanis dictum.
Commelin. Hort. Amst. 2:189 t.95. Idem.
Artist. Not signed (1686-1700).
Citations. *Sempervivum canariense* L. 1753:464, [Hort. Cliff.:179.2, V.Royen 1740:547, ms LINN, Boerhaave 1719,1:285.3, Ray 1704:362], Miller 1768, Huth.
Aeonium canariense (L.) Webb & Berth. 1841:196, Praeger 1932:133.
Taxonomic notes. No specimens are available in H.S.C., LINN, or herb. V.Royen to typify *Sempervivum canariense* L. The reference to Plukenet is excluded since this plate represents *Aeonium tabuliforme* (Haw.) Webb & Berth. Commelin's Plate 96 is proposed as lectotype of *Sempervivum canariense* L.
Distribution. Canary Islands: Tenerife.
Introduction. Commelin gives no details on the origin of his plant. His plate is the first record of this species in cultivation. It is still rather common in collections, although many of the specimens cultivated as *A.canariense* are hybrids.
'Corozone celio' is given as the local name. Webb & Berth. (l.c.) note that 'Corazoncillo' is the local name for *Androsaemum webbianum* Spach.
Specimen seen. Webb s.n. ex herb. Hooker (K).

Cotyledon orbiculata L. var. **spuria** (L.) Toelken, Bothalia 12:619 (1979) [Pl.54]
Atlas. 6 t.39. *Cotyledon Africana frutescens, folio longo & angusto, flore flavescente.*
Commelin. Rar. & Exot.:23 t.23. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Cotyledon orbiculata* L. 1753:429, [Hort. Cliff.:176.2, V.Royen:454, Boerhaave 1719,1:287.7, Tilli 1723:47].
Cotyledon spuria L. 1762:614, Burm.f. 1768 P.F.C.: 13, Miller 1768, Willd. 1799:754, Ait.f. 1811:109, Sweet 1827:178, Loudon 1830:183, Huth.
Cotyledon purpurea Thunb. 1794:83 – Haw. 1819: 23.
Cotyledon orbiculata L. var. *spuria* (L.) Toelken 1979: 619.
Taxonomic notes. Toelken (l.c.) discussed Linnaeus' concept of *C.spuria* and showed it to be a mixture but the main element is Commelin's plate since Linnaeus' observation on the finger-like alternate leaves can only

have been based on the bracts in Commelin's Plate 23, which therefore is the lectotype of *C.spuria* L.
The type of *C.orbiculata* L. is LINN 549.1. *Cotyledon purpurea* Thunb. is a synonym of *C.spuria* L.
Distribution. South Africa: Cape west of Worcester.
Introduction ante 1706. Commelin gave no details on the source of his plant. He knew from the Witsen Codex that it grows on rocky places at the Cape.
Specimen seen. Thorne 38966 (SAM).

Crassula capitella Thunb. ssp. **thyrsiflora** (Thunb.) Toelken, J.S.Afr. Bot. 41:100 (1975)
Atlas. 6 t.12. *Aloe Africana glabro folio minutissimis cavitatibus donato.*
Commelin. Prael. Bot.:76 t.25. Idem.
Artist. Maria Moninckx (1686-1702).
Citations. *Aloe pertusa* Haw. 1804:25 't.29'.
Turgosea pertusa (Haw.) Haw. 1821:14-15, Loudon 1830:113.
Crassula capitella Thunb. ssp. *thyrsiflora* (Thunb.) Toelken 1975:100 – 1977:395.
Taxonomic notes. Haworth described *Aloe pertusa* solely on the basis of Commelin's Plate 25, which is therefore the holotype. Later on he acquired a plant that he identified as the one in Commelin's plate and recognised it as belonging to his genus *Turgosea* (later written by Haworth as *Purgosea*). Toelken (1977) reduced *T.pertusa* to *Crassula capitella* ssp. *thyrsiflora.*
Note on the water-colour. The phrase-names for t.12 in the atlas and Commelin's t.25 are the same; the plants are totally different. The water-colour shows a *Gasteria* (see the text on *Gasteria nigricans* (Haw.) Duval), the published plate a *Crassula.*
Distribution. South Africa: Cape; Namibia.
Introduction. The plant was received in 1701.
Specimen seen. Bayliss 5802 (WAG).

Crassula coccinea L., Sp. Pl.282 (1753) [Pl.55]
Atlas. 6 t.40. *Cotyledon Africana Frutescens flore umbellato coccineo.*
Commelin. Rar. & Exot.:24 t.24. Idem.
Artist. Maria Moninckx (1686-1706).
Citations. *Crassula coccinea* L. 1753:282, [Hort. Cliff.: 116.1, ms LINN, Boerhaave 1719,1:288.8, Tilli 1723: 47, Bradley 1727:t.50, Breyne 1739:XX f.1], Bergius 1767:82, Burman f. 1768 P.F.C.:8, Miller 1768, Willd. 1791:1547, DC. 1799 t.1, Tölken 1972:69.
Rochea coccinea (L.) DC. – Kraus 1893:116, Huth.
Taxonomic notes. *Crassula coccinea* L. is typified by H.S.C. 116.1 by Tölken (l.c.). Tölken reduced the genus *Rochea* to *Crassula* in his monograph of the latter genus.
Distribution. South Africa: Cape Province.
Introduction ante 1705. Commelin did not mention the source of his plant. The species is common in cultivation at present.
Specimens seen. LINN 400.1; H.S.C. 116.1, lectotype (BM); Burchell 8513 (K); Garside 1225 (K); Esterhuysen s.n. (BOL); Pillans 8334 (BOL); Wijnands 889 (WAG).

Crassula perfoliata L. var. **perfoliata**, Sp. Pl.:282 (1753)
Atlas. 6 t.11. *Aloe Africana caulescens perfoliata glauca & non spinosa* (Oldenland no.20).
Commelin. Prael. Bot.:74 t.23. Idem.
Artist. Maria Moninckx (1701-1702).
Citations. *Aloe perfoliata* L. ι 1753:320.
Aloe disticha L., [ms LINN].
Aloe perfoliata L. ζ Willd. 1799:186.
Aloe perfoliata L. or *Aloe paniculata* Jacq. (= *Aloe striata* Haw.) – Huth.
Crassula perfoliata L. 1753:282, [Hort. Cliff.:116.2, Boerhaave 1719,2:129.12, Tilli 1723:7], Burm.f. 1768 P.F.C.:8, Willd. 1791:1550, DC. 1799:3 t.13, Kraus 1893: 116, Tölken 1972:71 & 1977:500.
Larochea perfoliata (L.) Haw. 1821:6.
Taxonomic notes. Linnaeus' *Aloe perfoliata* ι is based on Commelin's plate. Identification of this plate as an *Aloe* continued until 1895 (Huth).
Crassula perfoliata L. is typified by Dillenius s.n. (OXF) proposed by Tölken 1972:71. I suppose this must be considered a representative specimen or, maybe, the typotype, as there is no proof that Linnaeus has seen this specimen. The type is J.Dillen, Hort. Eltham. 1732: 114 t.96 f.113, *Crassula altissima perforata.* The plate was annotated by Linnaeus as *Crassula perfoliata* (Schmidt 1965:83).
Aloe disticha, Linnaeus' annotation in his copy of Commelin, is presently mainly accommodated in *Gasteria.*
Distribution. South Africa: S.W.Cape.
Introduction 1701. Maria Moninckx' plate is the first record of the species in cultivation. The plant was received in 1701 and 1702 from the Governor of the Cape (W.A.van der Stel).
Specimens seen. Bayliss 6352 (K); West s.n. (BOL).

Crassula perfoliata L., Sp. Pl.:282 (1753)
Atlas. 6 t.16. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1702).
Note on the plate. This very young specimen is most probably *Crassula,* possibly *C.perfoliata* L. This species is also represented by a water-colour in the atlas, viz. in vol.6 t.11. Drawing t.16 was made on the same vellum as *Haworthia venosa* (Lam.) Haw.

Crassula species
Atlas. 7 t.42. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).

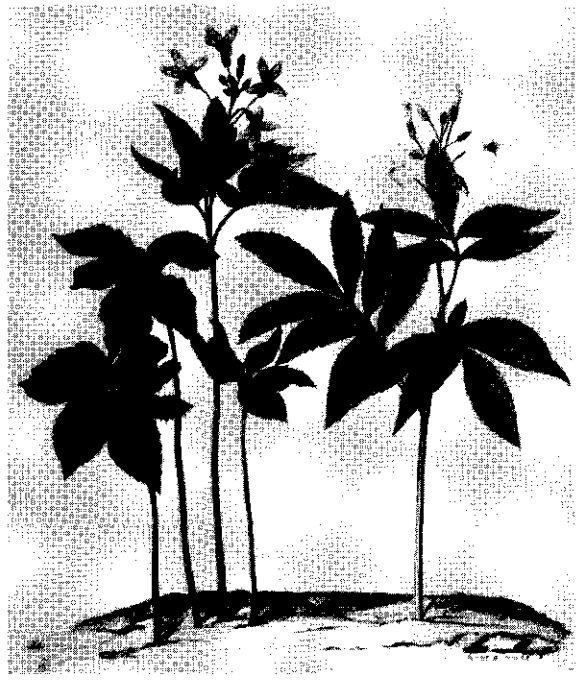
Kalanchoe ceratophylla Haw., Rev. Pl. Succ.: 23(1821) [Pl.62]
Atlas. 8 t.43. No name.

Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. *Kalanchoe laciniata* (L.) DC. is based on *Cotyledon laciniata* L. 1753:430. This name has been typified by LINN 594.5 by Cufodontis 1965:734. Although this specimen has no leaves I think it probably represents the same species as Maria's water-colour. The characters in common are: a glabrous inflorescence, a relatively long calyx, an urceolate corolla-tube, and stamens protruding from the corolla.
LINN 594.5 is not annotated with the number 6 of the species in Sp. Pl. The nomen specificum legitimum is cited from Hort. Cliff. 175. The corresponding specimen in H.S.C. represents a different species. It is pubescent, has a shorter calyx and the stamens are included. It represents an African species, viz. *K.schweinfurthii.* Fernandes 1980:373 rejected the typification of Cufodontis and designated the Clifford specimen as lectotype. I agree with her entirely.
This leaves me with the problem of the correct name for Maria's plant. Wickens (fide Fernandes l.c.) identified LINN 594.5 as a plant close to *K.gracilis* Hance, which is an endemic of Taiwan, fide Chung, Flora of Taiwan 3:13 (1977). As no other Commelin plant is known to have been introduced from Formosa it most likely is another species, viz. *K.laciniata* sensu Backer and Bakhuizen van den Brink, Flora of Java 1:202 (1963). The correct name for this species appears to be *Kalanchoe ceratophylla* Haw., cf. Wickens 1982: 673.
Distribution. S.E.Asia, the mainland probably.
Introduction ante 1706. Rumphius may have figured this species in t.95 of vol.5, but Fernandes (l.c.) expressed considerable doubt on its identity. Boerhaave 1719,1 t.288 shows a plant that could well be the same species as the Moninckx' water-colour.
Specimens seen. LINN 594.5.
For *K.laciniata:* H.S.C. 175 (BM); Pereira & Correia 1975 (WAG).

CRUCIFERAE

Cardamine heptaphylla (Vill.) O.E.Schulz, Feddes Repert. 46:116 (1939)
Atlas. 8 t.32. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Distribution. W. & C.Europe.

Cardamine pentaphyllos (L.) Crantz, Class. Crucif.:127 (1769)
Atlas. 8 t.32. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Distribution. W. & C.Europe.



Cardamine pentaphyllos, Cardamine heptaphylla. Atlas 8 t.32

Heliophila integrifolia L., Sp. Pl. ed.2:926 (1763)
Atlas. 8 t.3. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. South Africa.
Introduction ante 1687. Hermann (1687:364 t.365) published the first record of this species in cultivation.

CUCURBITACEAE

Luffa operculata (L.) Cogn., in Martius, Flora Bras. 6(4):12 t.1 (1878) [Pl.53]
Atlas. 6 t.38. *Momordica americana fructu reticulato sicco.*
Commelin. Rar. & Exot.:22 t.22. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Momordica operculata* L., Syst. Nat. ed.10, 1759: 1278, [ms LINN, Boerhaave 1719,2:77.5, Tilli 1723:115], Aublet 1775:806, Willd. 1805:603, Sweet 1818:212, Martius 1843:82, Huth.
Luffa operculata (L.) Cogn. 1878:12, Cogn. & Harms 1924:71, Burkart 1957:390.
Kraus (1893:120) interpreted an unspecified Commelin plate as *Sicyos angulatus* L., I suppose that Kraus had this Plate 22 in mind.
Taxonomic notes. For the typification of *Momordica operculata* L. two specimens are available in the Linnean Herbarium in London: LINN 1150.3 and 4, and one in Stockholm. The diagnosis refers to the fruits as

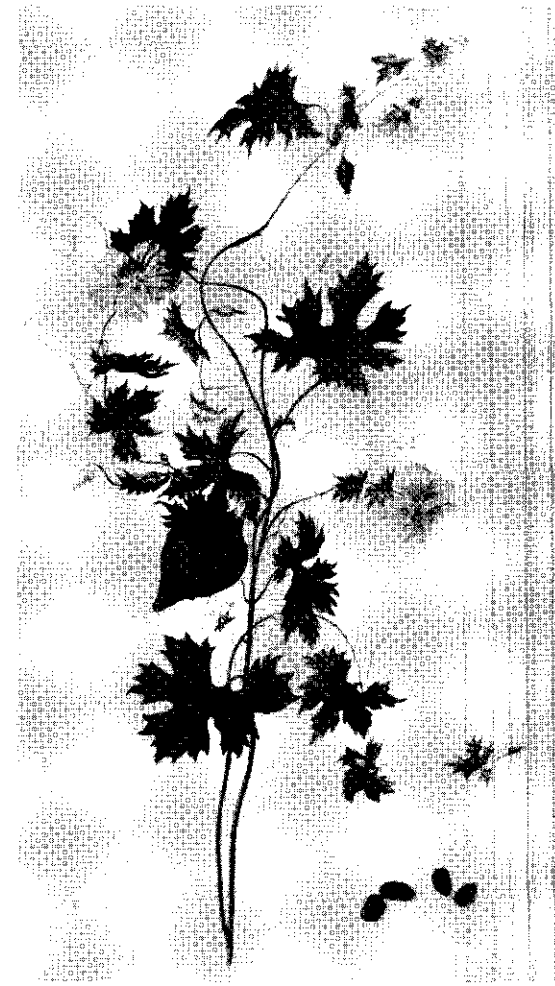
does the epithet, but the Linnean specimens do not bear developed fruits whereas Commelin's plate does. I consider it as the main basis of Linnaeus' species and thus, after consultation of C.Jeffrey (Kew), propose it as the type. Burkart (l.c.) wrote in the same sense 'esta basada en una lamina de Commelin'.
Distribution. Tropical America, mainland.
Introduction ante 1705. Commelin gives no source of his plant. I do not know an earlier record of the species. The shape of the leaves in the plate matches specimens seen from Mexico better than those from South America. My guess is that the plant came from Mexico.
The species is occasionally cultivated in Botanic Gardens, mostly under the synonymous name *Luffa purgans* Mart.
Specimens seen. Palmer 548, 770, 1018, Mexico (K); Arnoldo 346, Curaçao (U); Lanjouw & Lindeman 1094, Suriname (U).

Momordica balsamina L., Sp. Pl.:1009 (1753)

Atlas. 1 t.17. *Balsamina cucumerina* J.Bauh.
Momordica, Balsemina rotundi Folia, repens seu mas B: Pin. (Bauhin 1623:306).
Dutch: Balsem-Appel-Manneken.
Commelin. Not published by Commelin, but mentioned in Hort. Amst. vol.1:104.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Meeuse (1962:49) proposed as type of *M.balsamina* LINN 1150.1. Jeffrey (1980:790) rejected this proposal since the nomen specificum legitimum in Sp. Pl. is taken unchanged from Hort. Cliff. and there is no proof that LINN 1150.1 was in the herbarium in 1753. However, I see no reason for doubt that the specimen LINN was available in 1753 and therefore I accept Meeuse's proposal.
Distribution. Drier parts of the Old World tropics.
Introduction 1568. Chittenden 1951:1312 gave 1568 as year of introduction.
Specimens seen. H.S.C. 450.1 (BM); LINN 1150.1; Hanekom 1803 (WAG); J.de Wilde 4157 (WAG).

Momordica charantia L., Sp. Pl.: 1009 (1753)

Atlas. 1 t.16. *Balsamina Cucumerina Ceylanica, Fructu Flavescente* (Commelin 1689).
Pandi-pavel Hort: Malab. (Reede vol.8:17 t.9. 1688).
Dutch: Balsem-Appel van Ceylon, met groote geele Vrucht.
Commelin. Hort. Amst. 1:103 t.54. *Balsamina cucumerina indica fructu majore flavescente.*
Dutch: Indiaansch comcommerachtig balsem-kruyd met een groote geele vrucht.
Artist. Jan Moninckx (1688).
Citations. *Momordica charantia* L. 1753:1009, [Hort. Cliff.:451.2, Fl. Zeyl. n.351, V.Royen:262.2, ms LINN, Boerhaave 1719,2:77.4, Tilli 1723:115, Burm. 1737: 161], Burm.f. 1768 Fl. Ind.:306 (206), Aublet 1775,2:

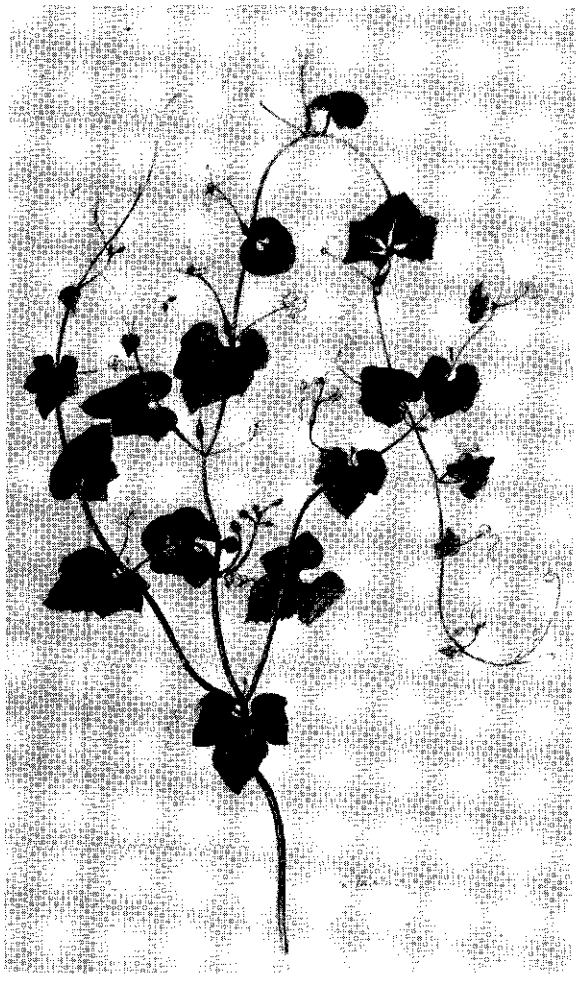


Momordica balsamina. Atlas 1 t.17

886, Willd. 1805:602, Huth, Mart. Fl. Bras. 1878, 6(4): 14, Cogn. in Engler 1924:24.
Taxonomic notes. The specimen in the Clifford herbarium is generally considered as the lectotype (Keraudren-Aymonin 1975:42, Jeffrey 1980:789).
Distribution. Tropics of the Old World.
Introduction 1686. Chittenden 1951:1312 gives 1710 as year of introduction. Commelin had the plant in fruit in 1688, his source probably was Ceylon considering the name in the Atlas. Commelin in Reede (l.c.) mentioned a fruiting specimen in Amsterdam in 1686, grown from seed sent from Mauritius by Isaac Lamotius. Breyne (1689:84) recorded this species from Amsterdam and Beverningk's garden.
Specimens seen. H.S.C. 451.2, lectotype (BM); Rappard 88 (WAG); W.de Wilde c.s. 5092 (WAG).

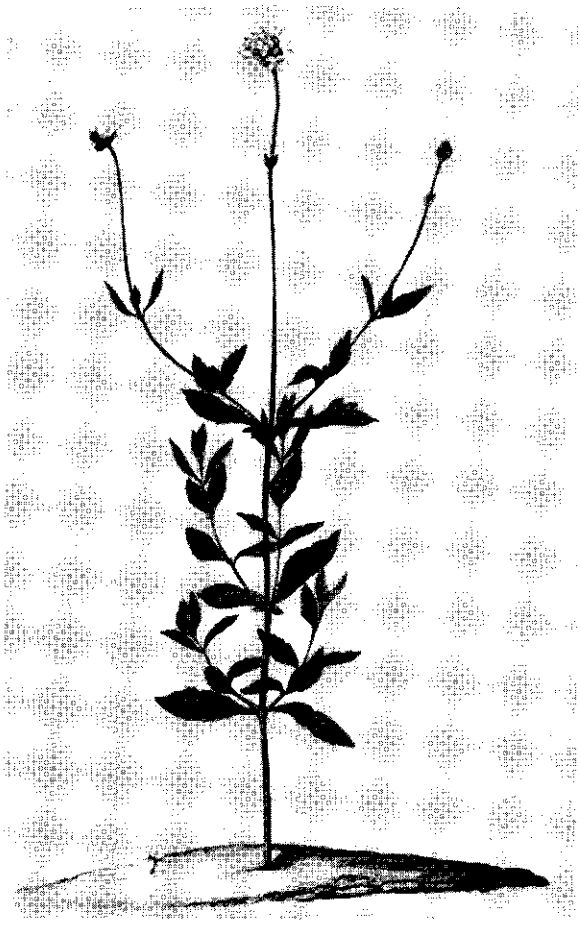
Trichosanthes cucumerina L., Sp. Pl.: 1008 (1753)

Atlas. 8 t.41. No name.



Trichosanthes cucumerina. Atlas 8 t.41

Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. *Trichosanthes cucumerina* L. is based on Pada valam, Reede 8:39 t.15 (1688). There is no specimen in LINN.
The cultivated plant is var. *anguina* (L.) Haines, the Snake Gourd. The water-colour probably represents the wild species.
The identification was confirmed by Dr C.Jeffrey.
Distribution. India.
Introduction ante 1705. I know of no earlier record of this species in cultivation. Breyne, Miscellanea curiosa 1688:136 fig. ad observatio 137, illustrated *'Planta scandens hederaceis foliis Zeylanica'* that in my opinion might be *Trichosanthes cucumerina* L.
The species is represented in the Codex of the Duchess of Beaufort 1 t.31.
Specimens seen. Vijay Khanna s.n. (WAG); De Wit & Van Zee 70, var. *anguina*, cult. (WAG).



Cephalaria rigida. Atlas 4 t.43

DIPSACACEAE

Cephalaria rigida (L.) Roem. & Schult., Syst. Veg. 3:44 (1818)
Atlas. 4 t.43. *Scabiosa Africana frutescens foliis rigidis sp(l)endentibus & serratis, Flore albicante.*
Commelin. Hort. Amst. 2:185 t.93. Idem, *'spendentibus'* in error.
Artist. Maria Moninckx (1699).
Citations. *Scabiosa leucantha* L. *β spuria* L. 1753:98; [Hort. Cliff.:30.4 *β*, Boerhaave 1719,1:129].
Scabiosa rigida L., Am. Ac. 1760,6:84, Pl. Afr. nr.4, Burm.f. 1768 P.F.C.:4, Willd. 1797:546, Ait.f. 1810: 224, Sweet 1818:23, Sonder 1864:42.
Cephalaria rigida (L.) Roem. & Schult. 1818:44, Loudon 1830:43, Huth.
Taxonomic notes. The specimen in H.S.C. 30.4 *β* (BM) agrees well with Commelin's plate. As Linnaeus did not cite Hort. Cliff. for *β spuria* Commelin's plate typifies this: it is the only element cited for 4 *β* in Hort. Cliff. *Scabiosa rigida* L. is represented by four specimens in herb. Burman (G); the one with an annotation on the

differential characters between *S.rigida* and *C.leucantha,* also found in Linnaeus' protologue, is proposed here as the lectotype.
Distribution. South Africa: Cape Province and Natal (Napper 1968:470).
Introduction 1698. Commelin received seeds in 1698, sowed in 1699. In that year, he obtained more seeds from Africa (the Cape). *Scabiosa Africana perennis dissectis foliis lucidis glabris,* Hermann 1689:373, could represent this species.
Specimens seen. H.S.C. 30.4 β (BM); LINN 120.3; Schlechter 7294 (K, G); H.Bolus 2974 (BOL); Wolley Dod 810 (BOL); herb. Burman (G).

EBENACEAE

Diospyros glabra (L.) De Winter, Bothalia 7:457 (1961)
Atlas. 5 t.14. *Vitis idaea aethiopica buxi minoris folio, floribus albidis.*
Commelin. Hort. Amst. 1:125 t.65. Idem.
Dutch: Moorelandsche kraakbesien met kleene palmsbladeren en witte bloemen.
Artist. Maria Moninckx (1686-1690).
Citations. *Royena glabra* L. 1753:397, [Hort. Cliff.: 149.2, ms LINN, Boerhaave 1719,2:71.3], Bergius 1767: 144 'bona', Burm.f. 1768 P.F.C.:13, Miller 1768, Willd. 1799:632, Ait.f. 1811,3:62, Sweet 1818:97, Huth, A.DC. 1844,8:214, Hiern 1873:88, Kraus 1893:117.
Taxonomic notes. De Winter (1963:63) designated LINN 570.3 as the type of *Royena glabra* L. This specimen is not annotated with the number '2' of the species in Sp. Pl., where the diagnosis is cited from V.Royen:441.
A good specimen available is H.S.C. 149.2.
Distribution. South Africa: Cape Province.
Introduction ante 1690. The editors Kiggelaer & Ruysch acknowledge Huydecoper for the introduction of the plant from the Cape. Plukenet 1696 t.321 f.4 shows a fragment.
Specimens seen. Schlechter s.n. (WAG); Bos 762 (WAG); Goldblatt 3077 (WAG).

Diospyros whyteana (Hiern) F.White, Bothalia 7:458 (1961)
Atlas. 5 t.22. *Staphylodendron Africanum Semper virens, Foliis splendentibus.* Cat. Hort. Med. Amst. (Commelin 1689).
Commelin. Hort. Amst. 1:187 t.96. Idem.
Dutch: Altoos groen-staande africaansche pimpernoten, met blinkende bladeren.
Artist. Maria Moninckx (1686-1690).
Citations. *Royena lucida* L. 1753:397, not cited in the protologue, [Hort. Cliff.: 149.1, ms LINN, Boerhaave 1719,2:235.3], Burm.f. 1768 P.F.C.:13, Gaertn. 1791,2: 80, Willd. 1799:631, Ait.f. 1811,3:61, Hiern 1873:78, 80 'bad', Huth, Kraus 1893:117.
Taxonomic notes. The genus *Staphylodendron* was proposed by Commelin and Hermann (1689:378) for this plant. This genus was accepted by Hermann 1698:232 t.232.
Royena lucida L. is typified by LINN 570.1 so designated by De Winter 1963:69. As the nomen specificum legitimum in Sp. Pl. is cited without change from Hort. Cliff.:149 and V.Royen:411, I prefer the specimen in H.S.C. 149 as the type. The sheet is annotated with Hermann's name '*Staphylodendron Africanum folio singulari lucido*' (l.c.) and seen by Hiern (l.c.).
Royena was sunk into *Diospyros* by De Winter & White (l.c.). The name *Diospyros lucida* Wall. prohibits the use of the combination of Linnaeus' epithet in *Diospyros.* The correct name is now *Diospyros whyteana,* based on *Royena whyteana* Hiern 1894, typified by Whyte s.n. (BM, not seen).
V.Royen is no longer commemorated by a generic name. Linnaeus' maxim 'Nomina generica, ad Botanici optime meriti memoriam conservandam constructa, sancte servanda sunt' (Philosophia Botanica:171) is seriously offended, the more since Van Royen's Prodromus Florae Leydensis was one of Linnaeus' main sources cited at the same level as that of his own publications. (Since *Diospyros* has some 200 names and *Royena* 20, White and de Winter's decision was obviously correct.)
Distribution. Africa, from the Cape through E. tropical Africa to Ethiopia.
Introduction ante 1689. The first illustration of this species was provided by Plukenet 1691 t.63 f.4, a paratype of *Royena lucida* L.
Commelin received fruits from the Cape as '*Buxus Capensis*'.
Specimens seen. Fries, Norlindh & Weimarck 3828 (WAG); Bos 902 (WAG).

Diospyros whyteana (Hiern) F.White, Bothalia 7:458 (1961)
Atlas. 8 t.34. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).

ERICACEAE

Erica cf. **curvirostris** Salisb., Trans. Linn. Soc. 6:375 (1802)
Atlas. 8 t.40. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. Mr E.G.H.Oliver kindly provided the identification of this plate. 'It would have been of a species growing not far from the Cape settlement. From this I would hazard a guess of *Erica curvirostris*' (Oliver in litt.).
Distribution. South Africa: S.W.Cape.
Introduction ante 1707. No other record of this species is known to me prior to Salisbury's publication in 1802.
Specimens seen. Esterhuysen 1600, 25621 (BOL).

Icones. Baker & Oliver, Ericas in Southern Africa t.91 (1967).

EUPHORBIACEAE

Clutia alaternoides L., Sp. Pl.:1042 (1753)

Atlas. 3 t.2. *Alaternoides Africana telephii legitimi imperati folio, Flore viridi.*
Commelin. Hort. Amst. 2:3 t.2. Idem.
Artist. Jan Moninckx (1699-1700).
Citations. *Clutia alaternoides* L. 1753:1042 (as 't.9'), [V.Royen:203.2, Hort. Cliff.:444.1 & 500, ms LINN, Boerhaave 1719,2:214], Burm.f. 1768 P.F.C.:27 ('31'), Miller 1768, Lam. 1786:54.
Cluytia alaternoides L. var. *major* Krause 1845:82 – Müller-Arg. 1862:1047, Huth.
Cluytia daphnoides Lam. 1786:54 – Willd. 1805:52, 1806:880.
Clutia africana Poir. in Lam. 1810:302, Prain 1913: 375.
Taxonomic notes. Prain (l.c.) amply discussed the central position of Commelin's plate in the interpretation of *Clutia alaternoides.*
Linnaeus used Commelin's name as epithet and the plate certainly contributed largely to Linnaeus' concept of this taxon. For the typification of the name several other elements must be considered. The only specimen annotated by Linnaeus '*alaternoides* 1' in his herbarium is LINN 1206.2; 1206.3 is a better match of Commelin's plate, but this specimen was annotated by Linnaeus filius.
In the Clifford herbarium two specimens are available: H.S.C.444.1 and 500. The last specimen matches Commelin's plate. As the nomen specificum legitimum is taken unchanged from Hort. Cliff. I consider H.S.C. 444.1 a suitable lectotype.
This choice leaves room for those who accept *C.africana* Poir. as a good species. This taxon is separated mainly on the basis of its larger leaves. Prain took this position but comparison of specimens under both names at Kew did not convince me that two good species are involved. Pillans (1950:558) considers *C.africana* a luxuriant form of *C.alaternoides,* and I tend to agree.
Clutia daphnoides Lam. is based on Sonnerat s.n. (P-LAM), Willdenow interpreted this name in a wider sense by including *C.alaternoides* and Commelin's plate. The specimen 18594 in herb. Willdenow represents Lamarck's species. Poiret's *C.africana* is not a substitute name for *C.daphnoides* Lam. as implied by Müller-Arg. in DC. Prodr. 15 (2):1050. Poiret's intention was to recognise the large leaved *C.alaternoides* as a separate species. He cited Commelin's plate next to *C.daphnoides* Willd. (not Lam.) where Commelin is cited also, so that obviously the Commelin-element in Willd. made Poiret decide that *daphnoides* Willd. differs from *daphnoides* Lam. Poiret also excluded the Commelin plate from *C.alaternoides* L. Commelin's plate is essential for Poiret's concept of *C.africana* and I, therefore, propose it as the lectotype.

Clutia alaternoides. Atlas 3 t.2

Note on the plate. Fruit details are added on the plate.
Distribution. South Africa: Cape Province.
Introduction 1696. Commelin received seeds in 1696 from 'Africa' (the Cape) as *'Ricinus frutescens flore viridi'.* The plate shows seeds received in 1696. Commelin's plant flowered but did not bear seeds because it was a male specimen. The plate is the first record of both *C.alaternoides* and *C.africana.* I do not know the species to be in cultivation at present.
Specimens seen. H.S.C. 500 (BM); LINN 1206.3; Muir 468 (K); Bos 206 (WAG); Goldblatt 2676 (WAG); Pillans 8869 (BOL).

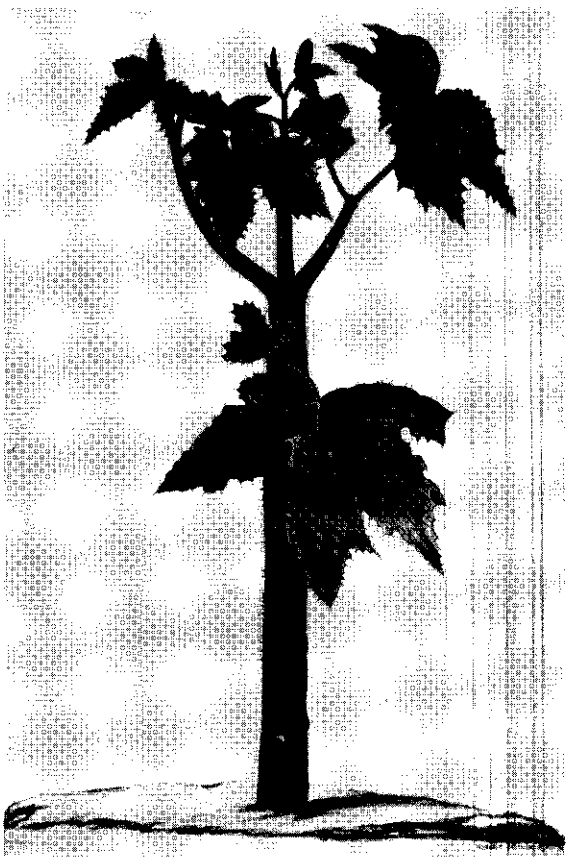
Clutia pulchella L., Sp. Pl.:1042 (1753)

Atlas. 2 t.24. *Frutex Aethiopicus Portulacae folio Flore ex albido virescente.*
Dutch: Aetiopische Heester, met Porcelijn-bladeren, en witachtige groene bloemen.

Commelin. Hort. Amst. 1:177 t.91. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Clutia pulchella* L. 1753:1042, [Hort. Cliff.: 431 & 500, V.Royen:203, ms LINN, Boerhaave 1719,2: 260], Burm.f. 1768 P.F.C.: 27 ('31'), Fl. Ind.:217, Miller 1768, Lam. 1786:54, Gaertn. 1791,2:117, Willd. 1806:882, Prain 1913:375, 376, Huth.
Taxonomic notes. A new nomen specificum legitimum is provided for *Clutia pulchella* in Sp. Pl.; LINN 1206.7 '2 *pulchella*', therefore, is proposed here as the lectotype. Prain 1913:376 wrote, in error, '2 *alaternoides*'. Commelin's plate has a better match in H.S.C. 431. Commelin's plant was male.
Boerhaave (l.c.) based his genus *Clutia* on this species, naming it after Outgers Cluyt, who served as a curator in the Leiden Hortus ca.1600.
Note on the plate. The water-colour differs strongly from the plate, both represent *Clutia pulchella.*
Distribution. South Africa: Cape Province – Natal.
Introduction ante 1690. No earlier record of this species in cultivation is known to me. I do not know it in present cultivation. Commelin received seed from the Cape sent by Simon van der Stel.
Specimens seen. LINN 1206.7 '2 *pulchella*', lectotype; H.S.C. 431, paratype (BM); Bos 913 (WAG); Goldblatt & Gentry 1487 (WAG); Bayliss 6850 (WAG); Esterhuysen 27239 (BOL); Schlechter 2411 (BOL).

Cnidoscolus urens (L.) Arthur, Torreya 21:11 (1921)

Atlas. 5 t.3. *Ricinus Tithymaloides Americanus Lactescens & Urens, Floribus Albis.*
Commelin. Hort. Amst. 1:19 t.10. Idem, Par. Bat. Prod. (Hermann 1689:376).
Dutch: Americaansche, melkgevende, brandende, en Wolf-melckse wonderboom met witte bloemen.
Artist. Maria Moninckx (1686-1690).
Citations. *Jatropha urens* L. 1753:1007, [Hort. Ups.: 290.1, Hort. Cliff.:445.2, Am. Ac. 10:119, V.Royen: 202.3, ms LINN, Boerhaave 1719,2:267, Gronov. 1762: 154], Burm.f. 1768 Fl. Ind.:306 ('206'), Jacq. 1770:8, Desr. in Lam. 1791:15'?', Willd. 1805:563, Huth.
Taxonomic notes. Since no specimens are available vouching for the descriptions in Hort. Cliff., Hort. Ups. and Van Royen – upon which the diagnosis in Sp. Pl. is based – LINN 1141.13 '6 *urens*' is proposed here as the lectotype of *Jatropha urens* L. The epithet *'urens'* is taken from Commelin.
I am not certain that the specimens L.90475-330 and -341 are authentic Van Royen material, related to the Prodromus.
Note on the plate. In contrast to all other engravings, this one is not the mirror-image of the water-colour.
Distribution. Lesser Antilles, N.W.South America.
Introduction ante 1689. Commelin gave no information on the origin of his plant, as habitat he gave Brazil and 'other American Islands'.



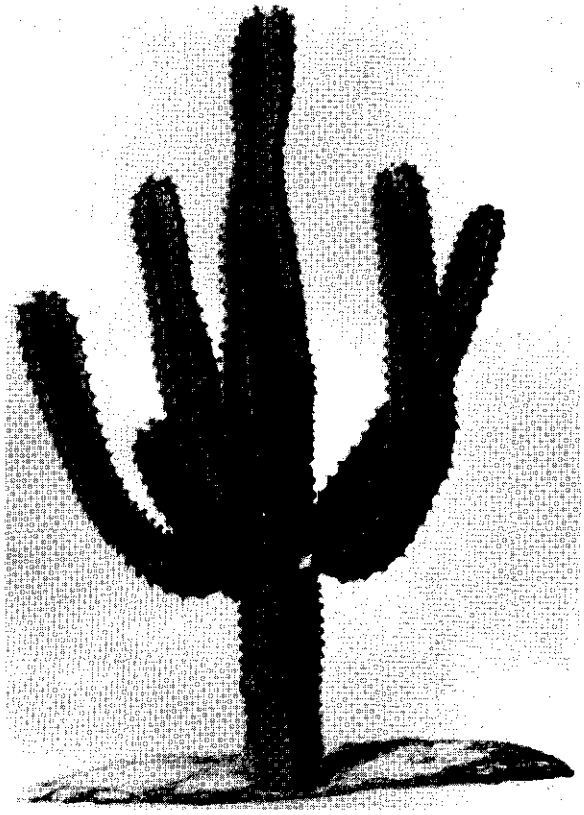
Cnidoscolus urens. Atlas 5 t.3

Agnes Block cultivated *'Ricinus Americanus urens'*, which may well have been *C.urens* (see V.d.Graft 1943: 138).
Specimens seen. LINN 1141.13, lectotype; Sterringa 12449 (WAG); P.de Wilde 107 (WAG); Smith 3391 (U); Lindeman 6692 (U).

Euphorbia antiquorum L., Sp. Pl.:450 (1753)

Atlas. 1 t.29. *Euphorbium Antiquorum.* Commelini. *Euphorbium Indicum Opuntiae facie, caule geniculato triangulari* Breynii Prod. II (Breyne 1689:62).
Schadida-Calli Hort: Malab: Part: 2 (Reede 2:81 t.42).
Commelin. Hort. Amst. 1:23 t.12. *Euphorbia Antiquorum verum.*
Scadida-Calli Horti Mal.
Dutch: Oprecht Euphorbium der ouden.
Artist. Jan Moninckx (1686-1690).
Citations. *Euphorbia antiquorum* L. 1753:450, [Hort. Cliff.:196.1, Fl. Zeyl.:89.199, Wiman in Am. Ac. 3: 107, Hort. Ups.:138.2, V.Royen:194.2, ms LINN, Boerhaave 1719,1:258.10, Tilli 1723:166, Breyne 1739: 102], Burm.f. 1768 Fl. Ind.:111, Miller 1768, Houttuyn 1777:733, Lam. 1783:413, Salm-Dyck 1834:104, Boissier in DC. 1862:81, Huth, Croizat 1934:20 (with reproduction of the plate).

Euphorbia antiquorum. Atlas 1 t.29



Euphorbia canariensis. Atlas 5 t.31

Taxonomic notes. The nomen specificum legitimum for *E.antiquorum* L. is cited from Hort. Cliff. The specimen in H.S.C. 196.1 is proposed as the lectotype. Commelin's plate shows the triangular form of this polymorph species, that was grown in Holland and was known to Linnaeus, Reede's Scadida-Calli is another form.
Distribution. India, Ceylon.
Introduction. Reede sent the plant from Ceylon as *Sidracalli.* Commelin considered this plant to be the medicinal *Euphorbium* 'Antiquorum'. His editors correct this error. The true *Euphorbium* is shown by Commelin in his tab.11, *Euphorbia officinarum.*

Euphorbia balsamifera Aiton, Hort. Kew. ed.1 vol.2:137 (1789)
Atlas. 5 t.32. *Tithymalus canariensis frutescens linariae folio.*
Commelin. Hort. Amst. 2:209 t.105. Idem.
Artist. Maria Moninckx (1699-1700).
Citations. Linnaeus did not give an interpretation of this plate.
Euphorbia dendroides L. 1753:463 – Huth.
Taxonomic notes. Plukenet 1692 t.319 f.5, cited by Commelin, is accepted as *'pessima'* by Webb & Berthelot (1847:250) in the synonymy of their *Euphorbia regis-jubae.* Plukenet's plant resembles that species more closely than Commelin's.
Although Commelin's plate is not very instructive, I think it represents *E.balsamifera.* Commelin's statement that the plant does not flower points in the same direction as this species is known to flower hardly in cultivation.
Euphorbia dendroides L. is a Mediterranean species quite different from Commelin's plant.
Distribution. Canary Islands.
Introduction 1699. François de Vroede communicated this plant to the Hortus in 1699. No earlier introduction of *E.balsamifera* is known.
Specimen seen. Wijnands 623 (WAG).

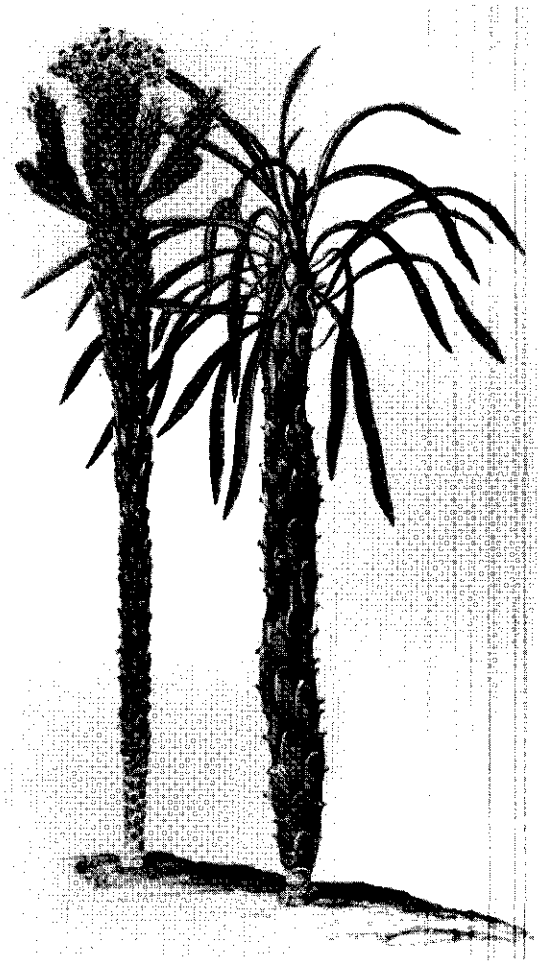
Euphorbia canariensis L., Sp. Pl.:450 (1753)
Atlas. 5 t.31. *Tithymalus aizoides fruticosus canariensis aphyllus quadrangularis et quinquangularis, spinis geminis aduncis atronitentibus armatus.*
Commelin. Hort. Amst. 2:207 t.104. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Euphorbia canariensis* L. 1753:450, [Hort. Cliff.:196.2, Wiman in Am. Ac. 3:107, Hort. Ups.: 138.1, ms LINN, Boerhaave 1719,1:258.5, Tilli 1723: 166], Houttuyn 1775:735, Lam. 1788:414, Willd. 1799: 882, Webb & Berth. 1847:255, Kraus 1893:115, Huth.

Taxonomic notes. No specimen is available for the typification of *Euphorbia canariensis* L. in LINN, H.S.C., or Herb. V.Royen. Commelin's plate is proposed here as the lectotype.
Distribution. Canary Islands: all islands.
Introduction ante 1690. Commelin gives no information on the origin of his plant. Plukenet 1692 t.320 f.2, cited by Commelin, shows the same species, including a seedling. On Commelin's authority Kiggelaer's *Tithymalus quadrangularis spinosus* etc. (1690) is the same species. This species is also represented in the Codex of the Duchess of Beaufort 1 t.33.
Specimen seen. Dinn 65 (WAG).

Euphorbia caput-medusae L., Sp. Pl.:452 (1753)

Atlas. 5 t.46. *Tithymalus aizoides Africanus simplici squamato caule.*
Commelin. Prael. Bot.:23, 57 t.7. Idem.
Artist. Maria Moninckx (1702).
Citations. *Euphorbia caput-medusae* L. 1753:452, [Hort. Cliff.: 197.6 γ, Hort. Ups.:139.5, Am. Ac. 3: 110, Boerhaave 1719,1:258.6, D'Isnard 1720:38], Burm.f. 1768 P.F.C.:14, Houttuyn 1777:739, Lam. 1788:417, Willd. 1799:887, Sweet 1818:107, Loudon 1830:190, Kraus 1893:115, Huth, Brown 1915:329, White, Dyer & Sloane 1941:353-357.
Euphorbia caput-medusae L. var. *major* Ait. 1789,2: 135 – Ait.f. 1811:158, Boissier in DC. 1862:86.
Euphorbia commelinii DC. 1813:110, Salm-Dyck 1834: 105.
Taxonomic notes. *Euphorbia caput-medusae* of Linnaeus (1753) was an assemblage of several species, as recognised nowadays. Commelin's Plate 7 represents *E.caput-medusae* L. s.str. Its habit is rather unusual for the species. White, Dyer & Sloane (l.c.) suppose that this habit was caused by the growing of a plant from a single branch, taken from the prostrate rosette. Such cuttings would grow as upright lignescent trunks or stems. However, I found a population of *E.caput-medusae* L., consisting of specimens with the habit of Commelin's plant, at Llandudno on the Cape Peninsula. The typification of *E.caput-medusae* L. is not an easy matter. No authentic specimens are available, and in modern collections, specimens are but rarely encountered.
Linnaeus' first synonym in Sp. Pl. is Commelin 1697 t.17, which could represent *E.tuberculata* Mill. or *E. pugniformis* Boiss. The plate under discussion, t.7, is cited after t.8 and without its own phrase-name. Table 8 is *E.clava* Jacq. Moreover Table 7 is under suspicion as representing *E.marlothiana* N.E.Br.,* (cf.White, Dyer & Sloane l.c.).

* Note: *E.marlothiana* N.E.Br., Fl. Cap. 1915,5,2:331, is referred to in Brown's discussion of the species as *'E.marlothii'*. *Euphorbia marlothii* is a name published by Pax, Bot. Jahrb. 10:36 (1889). Pax's species is based on Marloth 1425, Brown's on Marloth 5733.



Euphorbia caput-medusae, Euphorbia clava. Atlas 5 t.46

Burman's Table 8 represents *E.caput-medusae* L. as understood at present. Linnaeus' note 'Distinctissima planta petalis palmatis' agrees with the inflorescence shown by Burman. Linnaeus has the plate as his var. ε, I propose it as the lectotype.
For *E.commelinii* DC., Cat. Hort. Monsp. 1813:110, I propose Commelin's Plate 7 as the lectotype.
Distribution. South Africa: S.W.Cape near Cape Town.
Introduction ante 1703. Commelin did not specify the source of his plant. This species is probably represented in the Codex of the Duchess of Beaufort 1 t.34 f.1.
Specimen seen. Wijnands 927 (WAG).

Euphorbia clava Jacq., Icon. Plant. Rar. 1 t.85 (1781), text 1787:9, Collect. 1:104 (1787)

Atlas. 5 t.46. *Tithymalus aizoides Africanus simplici squamato caule chamaenerii folio.*
Commelin. Prael. Bot. 24,58 t.8. Idem.
Artist. Maria Moninckx (1702).
Citations. *Euphorbia caput-medusae* L. 1753:452,

[Hort. Cliff.:197.6 δ, ms LINN], Burm.f. 1768 P.F.C.: 14, Houttuyn 1777:739.
Euphorbia clava Jacq. 1781 t.85 – Jacq. 1787:104, Boissier in DC. 1862:89, Huth, Brown 1896:337, White, Dyer & Sloane 1941:258 (with reproduction of the plate), Jacobsen 1970:184.
Euphorbia canaliculata Lam. 1786:417.
Taxonomic notes. *Euphorbia clava* Jacq. is described fully in 1787. Lamarck's *E.canaliculata* in 1786. Jacquin, however, published the name with a drawing and analytic details in 1781, the name was validly published in 1781 and has priority (I.C.B.N. art.44). Jacquin's Plate 9 is proposed here as the type of *Euphorbia clava. E. canaliculata* was described from a living plant in the Jardin du Roi. A single damaged leaf is present in P-Lam., I propose Commelin's plate as lectotype of *Euphorbia canaliculata.*
Introduction. Seeds were received from the Cape in 1700. In the Witsen-codex the species was named *Tithymalus Africanus frutescens, flore viridi.*
Distribution. South Africa: Cape Province.

Euphorbia cotinifolia L., Sp. Pl.:453 (1753)

Atlas. 1 t.30. *Tithymalus arboreus americanus cotinifolio* Cat. Hort. Med. Amst. (Commelin 1689:350). Dutch: Americaans boomachtig wolfs-melk, met bladeren van cotinus, of veruw-loof.
Commelin. Hort. Amst. 1:29 t.15. Idem.
Artist. Jan Moninckx (1687-1690).
Citations. *Euphorbia cotinifolia* L. 1753:453, [Hort. Cliff.:198.11, V.Royen:196, Wiman in Am. Ac.:112, ms LINN, Boerhaave 1719,1:257, Seba 1734:75], Miller 1768, Aublet 1775:479, Lam. 1788:420, Ait.f. 1811: 160'?', Sweet 1818:107, Kraus 1893:115, Huth.
Taxonomic notes. The nomen specificum legitimum is rephrased from Hort. Cliff. and Van Royen 1740:196. H.S.C. 198.11 represents *E.cotinifolia* as presently understood. The specimen shows traces of a purple hue in its leaves. In the pre-Linnean literature only Breyne 1689:100 mentions this obvious character.
Distribution. 'Native origin unknown but probably tropical America', Adams 1972:426. The type locality is Curaçao.
Introduction 1686. Commelin states that plant(s) and seeds were received from Curaçao in 1686. Breyne (1689:100) has seen plants introduced from Surinam in Bentinck's and Fagel's garden in 1688. Plukenet shows a plant in 1692 t.230 f.3. Fagel had two kinds, one with purple leaves which is *E.cotinifolia,* the second had pallid spotted leaves and is not identifiable. Hermann (1689:381) had a plant in Leiden, probably from Curaçao. The species is at present in cultivation as an ornamental.
Specimens seen. H.S.C. 198.11, lectotype (BM); Kiggelaer in Herb. Sloane 220:43 the lowermost specimen (BM).

Euphorbia hypericifolia L., Sp. Pl.:454 (1753)

Atlas. 5 t.48. *Tithymalus americanus flosculis albis. Tithymalus Africanus seu Peplis major Brasiliensis flosculis albis* Raji Hist. (Ray 1686:870, who had the name from Marcgraf).
Commelin. Prael. Bot.:60 t.10. Idem.
Artist. Maria Moninckx (1686-1702).
Citations. *Euphorbia hypericifolia* L. 1753:454 (not cited in the protologue) – 1762:651 (as 60 t.60), [Hort. Cliff.:198.15, Am. Ac.3:113, Hort. Ups.:143.20, ms LINN, Gronovius 1762:75], Burm.f. 1768 P.F.C.:14 & Fl. Ind.:111, Aublet 1775:479, Houttuyn 1777:745, Lam. 1788:422, Ait.f. 1811,3:161, Sweet 1818:107, Salm-Dyck 1834:106, Huth, Brown 1896:249, Burch 1966:162.
Taxonomic notes. Burch (l.c.) analysed the application of the name *E.hypericifolia* L. He typified the name by Sloane 1707:197 t.126. Wheeler (1939) proposed LINN 630.3 as the type. This specimen is annotated 'Br', indicating that it came from P.Browne whose collections were not available to Linnaeus until 1758. The species represented by LINN 630.3 is *E.lasiocarpa* Klotsch, and Wheeler's typification must be rejected in favour of that by Burch.
Distribution. Tropical regions of all continents.
Introduction ante 1688. Commelin does not give the origin of his plant. He considers it as identical 'ovum ovo non possit esse similius' to the plant described by Marcgraf 1648,1:15. Sloane (l.c.) refers to Tournefort 1700:88 and Plukenet 1696:373. Since Plukenet's plant is described as hirsute, it might be *E.lasiocarpa. 'Chamaesyce Americana major, floribus glomeratis Cynocrambes glabra'* Breyne 1689 is the same as Marcgraf's plant according to Plukenet (l.c.). Plukenet 1691 t.113.2 might be *E.hypericifolia.*
Specimens seen. Morton 1371 (WAG); Polhill & Paulo 536 (WAG); Lewalle 1006 (WAG); Groenendijk 37 (WAG); P.de Wilde 77 (WAG).

Euphorbia mammillaris L., Sp. Pl.:451 (1753) [Pl.42]

Atlas. 5 t.47. *Tithymalus aizoides Africanus, validissimis spinis ex tuberculorum internodiis provenientibus.*
Commelin. Prael. Bot.:59 t.9. Idem.
Artist. Jan Moninckx (1686-1702).
Citations. *Euphorbia mammillaris* L. 1753:451, [Wiman in Am. Ac. 3:108, ms LINN, Boerhaave 1719,1:258.4, D'Isnard 1720:386], Burm.f. 1768 P.F.C.:14, Houttuyn 1777:736, Lam. 1788:414, Willd. 1799:883, Ait.f. 1811:156, Sweet 1818:106, Loudon 1830:190, Salm-Dyck 1834:105, Boissier in DC. 1862:88, Kraus 1893: 115, Huth, Brown 1896:347, Janse 1939:103 (with reproduction of the water-colour), White, Dyer & Sloane 1941:599-601 (with reproduction of the plate).
Taxonomic notes. Commelin's Plate 9 is the only suitable

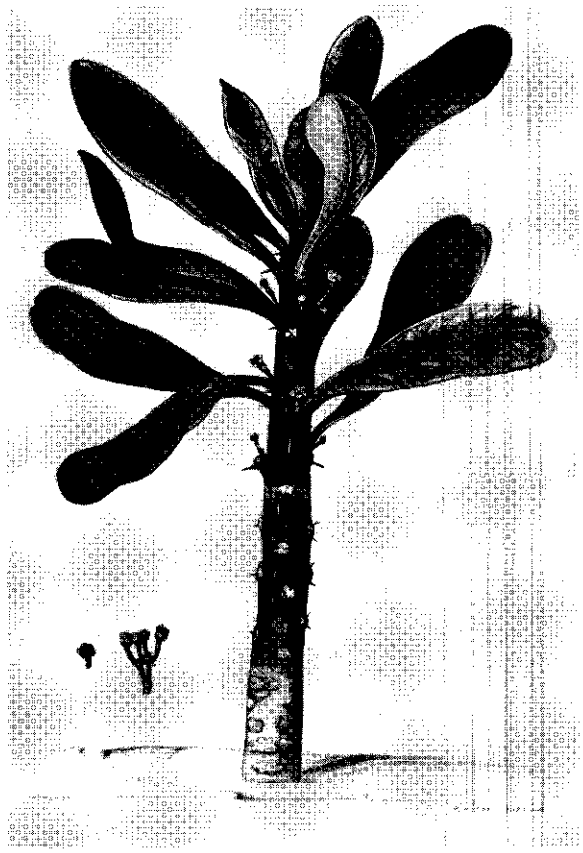
element available for the typification of *Euphorbia mammillaris* L.
Distribution. South Africa: Cape, Riversdale and Oudtshoorn districts.
Introduction ante 1702. Commelin did not specify the source of his plant.
The species is uncommon in cultivation nowadays. Most specimens labelled *'Euphorbia mammillaris'* belong to *E.fimbriata* Scop.

Euphorbia mauritanica L., Sp. Pl.:452 (1753)

Atlas. 1 t.32. *Tithymalus frutescens Africana, aphyllos Flore, ex luteo Rubicundo.*
Dutch: Wolfs-Melck, met Geel-rode Blom, van de Caap de Goede Hoop.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. This species is based on Hort. Cliff.: 197.8, Hort. Ups.:140.8, V.Royen:195 and Wiman in Am. Ac. 3:111. Dillen 1732:384 t.289 & 373 is cited as synonym. I did not investigate the typification of this species. There is no specimen in LINN. It has also been known as *E.tirucalli* Thunb. non L.
Distribution. Southern Africa, coastal areas of the Cape, Natal, Namibia.
Introduction ante 1689. The species originally was thought to be North African, hence the epithet. Dillen discusses extensively 'Xambra' and 'Rhasis' of Plinius and Rauwolf. This is not our plant. No published illustration of the species is known to me prior to Dillen. Breyne (1689:102) recorded this species from the Hortus in Amsterdam. Commelin probably was the first to cultivate it. The species is scarce in cultivation presently.
Specimens seen. Bos 100 (WAG); Pont 1506 (U).
Icones. Mason 1972 t.62 f.2.

Euphorbia neriifolia L., Sp. Pl.:451 (1753)

Atlas. 5 t.45. *Tithymalus aizoides arborescens spinosus, caudice angulari, nerii folio.*
Commelin. Prael. Bot.:22, 56 t.6. Idem, but *'rotundo'* for *'angulari'* on p.22.
Artist. Jan Moninckx (1700-1702).
Citations. *Euphorbia neriifolia* L. 1753:451, [Hort. Cliff.:196.3, Fl. Zeyl.:90 no.200, Hort. Ups.:139.4, Wiman in Am. Ac. 3:109, ms LINN, Boerhaave 1719,1: 259, Tilli 1723:166, Bradley 1725:10 t.28 (mirror-image of Commelin's plate), Burm. 1737:96], Burm.f. 1768 Fl. Ind.:111, Houttuyn 1777:738, Lam. 1788: 415, Willd. 1799:885, DC. 1800 t.46, Janse 1953:70-72 (with reproduction of the plate).
Taxonomic notes. In Linnaeus' protologue of *E.neriifolia* this species is confused with *E.nivulia* Buch.-Ham., a species illustrated by Commelin 1697 t.13.
No specimens are available for the typification of *E. neriifolia* in H.S.C., herb. Hermann, and herb. Van Royen. The specimen LINN 630.1 consists of a few leaves only, I cannot identify it.



Euphorbia nivulia. Atlas 5 t.4

Commelin's Plate 6 is proposed here as the lectotype of *Euphorbia neriifolia* L. Linnaeus took the epithet from Commelin.
Distribution. India.
Introduction. Commelin received his plant from Agnes Block in 1700 or 1701. Some years earlier it had been sent to her from Amboina.

Euphorbia nivulia Buch.-Ham., Transact. Linn. Soc. 14:286 (1825)

Atlas. 5 t.4. *Tithymalus Indicus Arborescens spinosus nerii Folio.*
Ela-Calli Hort. Mal. Part 2 (Reede 2:83 t.43).
Dutch: Indiaans boomachtig gedoornt wolfs-melk, met oleander bladeren.
Commelin. Hort. Amst. 1:25 t.13. Idem.
Artist. Maria Moninckx (1686-1690).
Citations. *Euphorbia neriifolia* L. 1753:451, [Hort. Cliff.:196.3, Fl. Zeyl. 89.200, Wiman in Am. Ac. 3: 109, Hort. Ups.:139.4, ms LINN, Burm. 1737:95], Burm.f. 1768 Fl. Ind.:111, Houttuyn 1777:738, Lam. 1788:415, DC. 1800:8 t.46, Huth.
Euphorbia nivulia Buch.-Ham. 1825:286, Boissier in DC. 1862:80, Janse 1953:71.
Taxonomic notes. *Euphorbia neriifolia* L. is a mixture

of two species. Of the syntypes Seba's, Reede's and Commelin's t.13 belong to *E.nivulia.* Hamilton (l.c.) discussed the identity of Ela Calli, and Janse (l.c.) analysed *E.neriifolia* L. Hamilton described *Euphorbia nivulia* in his commentary on the Hortus Malabaricus. Ela Calli, Hort. Mal. 2:83 t.43 is the base of it. I consider it to be the lectotype. No specimen of Hamilton has been found in BM.
Distribution. W.India.
Introduction ante 1690. Laurentius Pijl, governor of Colombo on Ceylon, sent the plant to Commelin.

Euphorbia officinarum L., Sp. Pl.:451 (1753)

Atlas. 1 t.28. *Euphorbium Dodonei.*
Euphorbium cerei effigie, Caulibus crassioribus, Spinis validioribus Armatum Breynii Prod. II (Breyne 1689: 62).
Dutch: Cereus gelykende euphorbium, met dikke stelen, en kloeke doornen.
Commelin. Hort. Amst. 1:21 t.11. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Euphorbia officinarum* L. 1753:451, [Hort. Cliff.: 196.5, Wiman in Am. Ac. 3:108, Hort. Ups.: 183.3, Mat. Med.:89.254, Boerhaave 1719,1:258.1], Burm.f. 1768 P.F.C.:14, Miller 1768, Houttuyn 1777: 736, Lam. 1788:415, Willd. 1799:884, De Candolle 1801 t.77, Boissier in DC. 1862:85, Croizat 1934:61, reproduction of the plate on p.65.
Euphorbia cereiformis L. 1753:451 – Brown in Fl. Cap. 1915, 5,2:349, Kraus 1893:115.
Euphorbia cereifolia L., nomen tantum, ms LINN only.
Taxonomic notes. Croizat amply discussed *Euphorbia officinarum.* I agree with him, although Dyer, White & Sloane (1941:657) expressed a different opinion by accepting Brown's view. Croizat's argument is centred around Commelin's plate as the basis of the Linnean concept of *E.officinarum.* Commelin figures a plant introduced from Saleh on the Atlantic coast of Morocco. As no specimens are available in the herbaria relevant to the typification of the name, I propose Commelin's plate as lectotype. *E.beaumierana* Hook.f. & Cosson is a synonym.
The name *Euphorbia cereiformis* L. is used at present for a species in cultivation, not known in the wild but supposed to be of South African origin. Brown (l.c.) takes this position and suspects that Commelin's plate may possibly be intended to represent *E.cereiformis.* Linnaeus' ms annotation to the plate in a way confirms Brown's conjecture. He excludes all synonyms cited in Sp. Pl. and in Am. Ac. 3:108. As no type-specimen is available for *E.cereiformis,* no material basis is left to substantiate *E.cereiformis* sensu Brown as a Linnean species. Linnaeus' synonyms represent, according to Brown, *E.stellaespina* Haw., *E.officinarum* L., and *Crassula pyramidalis* L.f.
D'Isnard published a revision of *Euphorbia* that had a profound influence on Linnaeus' taxonomic treatment

Euphorbia officinarum. Atlas 1 t.28

of the genus, before Wiman (Am. Ac. 3) confused the matter. D'Isnard's Table 10 represents the Cereus-like Euphorbium with slender stems, as discussed by Croizat. It could serve well as lectotype of *Euphorbia cereiformis* L. Thus, *E.cereiformis* L. and *E.officinarum* L. are conspecific.
Distribution. Atlantic coast of Morocco.
Introduction ante 1570. This species was cultivated in 1570 by Jean Boisot in Brussels. Dodoens' much copied illustration is based on his plant.
Commelin received his plant from Simon van Beaumont, who got it from Saleh in Morocco.

Euphorbia ? pugniformis Boissier in DC., Prodr. 15,2:92 (1862)

Atlas. 1 t.27. Tithymali forte genus, *Planta lactaria Africana pini Fructum facie.* Breynii Prod. II (Breyne 1600:27).
Dutch: Africaans Duijvels-Melck met geschubde Takken.
Commelin. Hort. Amst. 1:33 t.17. *Planta lactaria africana.*
Dutch: Africaansche Melck-gevende plante.
Artist. Jan Moninckx (1687).
Citations. *Euphorbia caput-medusae* L. 1753:452, [Hort. Cliff.:197.6, Am. Ac. 3:110, ms LINN, Burman 1738: 21, Isnard 1720:386, Breyne 1739:29], Burm.f. 1768 P.F.C.:14, Miller 1768, Lam. 1788:416, Sweet 1818: 107.
Euphorbia pugniformis Boiss. 1862:92 – White, Dyer

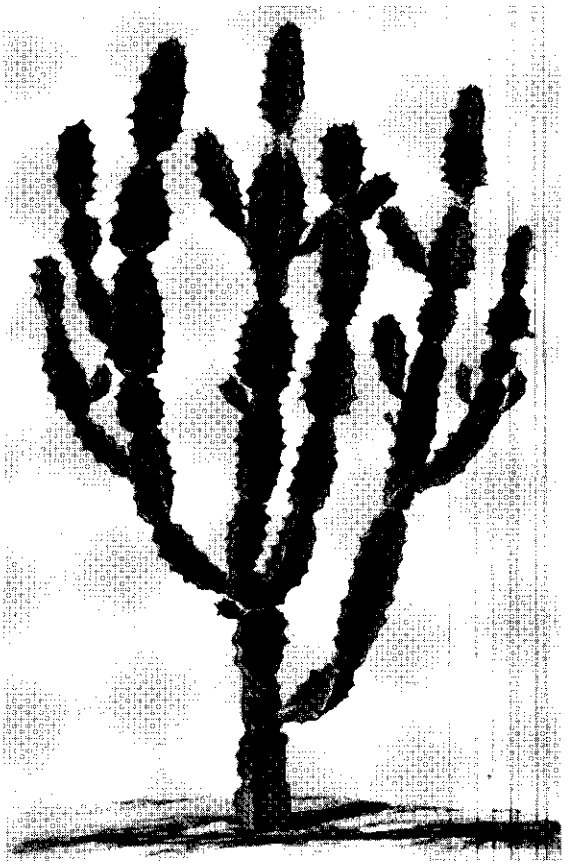
& Sloane 1941:336 (with reproduction of the plate), Huth.
Euphorbia gorgonis Berger 1910:230 – Brown 1896: 313.
Taxonomic notes. *Euphorbia caput-medusae* is lectotypified by Burman's Plate 8 (1738). The type of *E. pugniformis* Boiss. is *Euphorbium humile procumbens* Burman 1738 t.10 f.1.
Commelin's Plate 17 does not allow for a precise identification. It could represent *E.pugniformis,* but *E.tuberculata* Mill. is another possibility.
Distribution. South Africa: S.W.Cape.
Introduction ante 1679. Commelin had the plant from the Cape where it grows 'in sandy places'. Moninckx's water-colour of 1687 could be the first record of this species in cultivation. *E.pugniformis* is rather common in succulent collections at present.

Euphorbia tirucalli L., Sp. Pl.:452 (1753)

Atlas. 5 t.5. *Tithymalus Indicus Frutescens.* Raii Hist. Plant. (Ray 1688:1710).
Tiru-Calli Hort: Mal. (Reede vol.2:85 t.44).
Commelin. Hort. Amst. 1:27 t.14. Idem.
Dutch: Indiaansch Heesteragtig Wolfsmelk.
Artist. Maria Moninckx (1686-1690).
Citations. *Euphorbia tirucalli* L. 1753:452, [Hort. Cliff.:197.9, Fl. Zeyl.:88.196, ms LINN, Am. Ac. 3: 111, Hort. Ups.:139.6, V.Royen:195.8, Boerhaave 1719,1:257.28, Burm. 1737:223], Burm.f. 1768 Fl. Ind.:111, Miller 1768, Houttuyn 1777:741, Lam. 1788:418, Salm-Dyck 1834:106, Boiss. in DC. 1862: 96, Kraus 1893:115, Huth, Leach 1973:87 (with reproduction of the plate).
Taxonomic notes. Leach (l.c.) selected Commelin's plate as the lectotype of *Euphorbia tirucalli* L. The plate shows the finely striate branches typical of the species.
Distribution. Tropical Southwestern Africa. The type locality is Ceylon, where the species was and is cultivated. See Leach (l.c.) for a map.
Introduction. Commelin received his plant from Laurentius Pijl, governor of Colombo, Ceylon.

Euphorbia trigona Haw., Syn. Pl. Succ.:127 (1812)

Atlas. 5 t.44. *Tithymalus aizoides triangularis et quadrangularis, articulosus et spinosus, ramis compressis.*
Commelin. Prael. Bot.:21, 55 t.5. Idem, *'nodosus'* for *'articulosus'* on p.21.
Artist. Jan Moninckx (1686-1702).
Citations. *Euphorbia antiquorum* L. β 1753:450, [Hort. Cliff.:196.1 α, Fl. Zeyl.:89.199 β, Wiman in Am. Ac. 3:107, Hort. Ups.:138.2 α, ms LINN, D'Isnard 1720: 385], Houttuyn 1777:733, Lam. 1788:413, Willd. 1799:882, Boiss. in DC. 1862:82.
Euphorbia antiquorum L. ε *trigona* Haw. – Huth.
Euphorbia trigona Haw. 1812:127 – Croizat 1934:19-



Euphorbia trigona. Atlas 5 t.44

43 (with reproduction of Commelin's plate).
Taxonomic notes. Croizat (l.c.) gave a detailed account of *E.trigona* Haw., based on Commelin's Plate 5, and its pre-Haworthian synonymy. Croizat's complex discussion boils down to:
a) Commelin's synonymy on p.21 is in error, the plant is not from India or Ceylon, but probably from W.-Tropical Africa;
b) Commelin's plant, i.e. *Euphorbia antiquorum* L. β, is the same as *E.trigona* Haw., which is not the Indian *E.trigona* Roxb.;
c) *E.hermentiana* Lem. from W.-Tropical Africa is a synonym of *E.trigona* Haw.
Haworth cited Commelin indirectly through *E.antiquorum* L. β, which consists of Commelin's Plate 5 only. Also the reference to Miller 1768 *Euphorbia* no.3 includes Commelin's plate through D'Isnard (l.c.). For these reasons, I propose Commelin's Plate 5 as the lectotype of *Euphorbia trigona* Haw.
I cannot match Commelin's plate with any *Euphorbia;* it could be one of several species. Croizat's identification as *E.hermentiana* Lem. does not help much as it is not clear what this name stands for. Several species are in cultivation under this name.

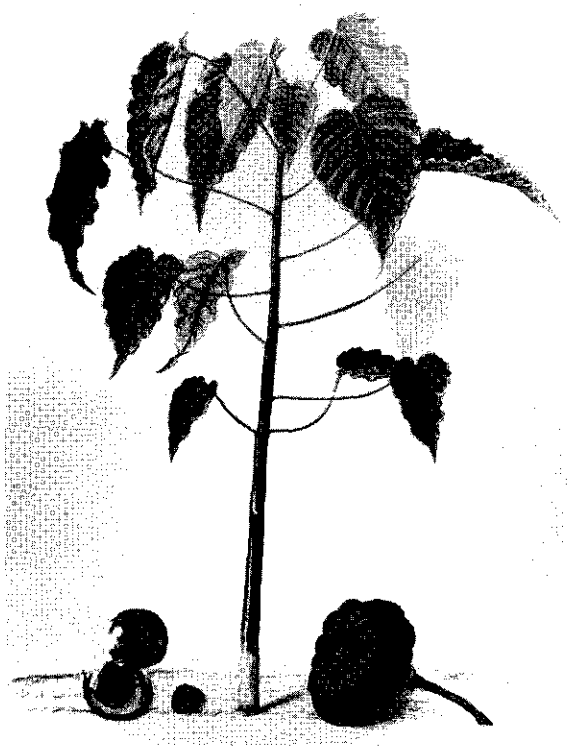
I am unable to identify *Euphorbia trigona* Haw. otherwise than by means of the typifying plate published by Commelin, no.5.
Introduction. Commelin did not specify the source of his plant. Croizat reconstructed an introduction from the West African coast through Van Beaumont. If this reconstruction is correct, the Angolan coast near Luanda is a probable provenance, in which case Commelin's plant is *E.candelabrum* Welw. (cf. Leach 1974, with map on p.36 and note on *E.hermentiana* on p.45), but this is merely historical speculation without any sound botanical basis.

Hippomane mancinella L., Sp. Pl.:1191 (1753)

Atlas. 5 t.15. *Malus americana, laurocerasi folia, venetata.*
Commelin. Hort. Amst. 1:131 t.68. Idem, and *Mancinello arbor seu massinilia.*
Dutch: Venynige americaansche appelboom, met bladeren van laurocerasus.
Artist. Maria Moninckx (1690).
Citations. *Hippomane mancinella* L. 1753:1191, [Hort. Cliff.:484, ms LINN '?', Sloane 1725:3], Desr. in Lam. 1792:694, Willd. 1805:571, Huth.
Taxonomic notes. The nomen specificum legitimum for *Hippomane mancinella* in Sp. Pl. is cited without change from Hort. Cliff. No specimen is available in the Clifford herbarium. The specimens in the Linnean herbarium 1146.1 & 2 are not annotated with the number '1' of the species in Sp. Pl. The second specimen is probably a duplicate from the Clifford herbarium. As lectotype I propose Table 159 in Sloane's History of Jamaica 2 (1727). The typotype in Herb. Sloane 5:55 is a very good specimen.
Distribution. Tropical America, from Florida to Venezuela and the West Indies.
Introduction. Commelin received seeds in 1687 from Curaçao. After three years (in 1690) it measured three feet. I know of no earlier record of this species in cultivation although it was described much earlier by Marcgraf. It is uncommon in collections presently.
Specimens seen. H.S.5:55, typotype (BM); P.de Wilde 119 (WAG).

Hura crepitans L., Sp. Pl.:1008 (1753)

Atlas. 4 t.14. *Hura Americana Abutuli Judici folio.*
Commelin. Hort. Amst. 2:131 t.66. Idem.
Artist. Not signed (1699-1700).
Citations. *Hura crepitans* L. 1753:1008, [Hort. Cliff. app:486, ms LINN], Miller 1768, Aublet 1775:885, Willd. 1805:592, Kraus 1893:119, Huth.
Taxonomic notes. The nomen specificum legitimum for *Hura crepitans* is taken from Hort. Cliff. and Van Royen. The specimen in Herb. V.Royen (L 90475-290) is annotated by the younger Van Royen and cannot be the type; there is no specimen in H.S.C., therefore I consider Plate 34 in Hort. Cliff. an acceptable lectotype.



Hura crepitans. Atlas 4 t.14

The epithet *'crepitans'* is derived from Hernandez 1651: 88, cited as a synonym by Commelin. Clusius 1605:47, Commelin's other synonym, is cited in Hort. Cliff.
Distribution. Tropical America (Commelin: New Spain and Jamaica).
Introduction. Commelin received the depicted fruits in 1699 from Gerard Röver. The plant was raised from the seeds they contained.
Specimens seen. De Bruijn 1185 (WAG); Versteeg & Den Outer 553 (WAG).

Jatropha gossypiifolia L., Sp. Pl.:1006 (1753)

Atlas. 5 t.2. *Ricinus Americanus perennis floribus purpureis staphidisagriae foliis.*
Commelin. Hort. Amst. 1:17 t.9. Idem.
Dutch: Americaansche wonderboom, met purpure bloemen, en bladeren van Luyskruyd.
Artist. Jan Moninckx (1690-1691).
Citations. *Jatropha gossypifolia* L. 1753:1006, [V. Royen:202.5, ms LINN, Commelin in Merian 1705 t.38], Burm.f. 1768 Fl. Ind.:206 ('306'), Aublet 1775: 883, Jacq. 1787:154, Willd. 1805:557, Huth.
Taxonomic notes. Linnaeus cited in Sp. Pl. a description provided by Van Royen. Two specimens are available in L-Van Royen, L 90475-339 is sterile and -341 has flowers but no fruits. As the Linnean diagnosis mentions fruits, neither of these specimens is the type. Rather than leaving the name with a lost or dubious

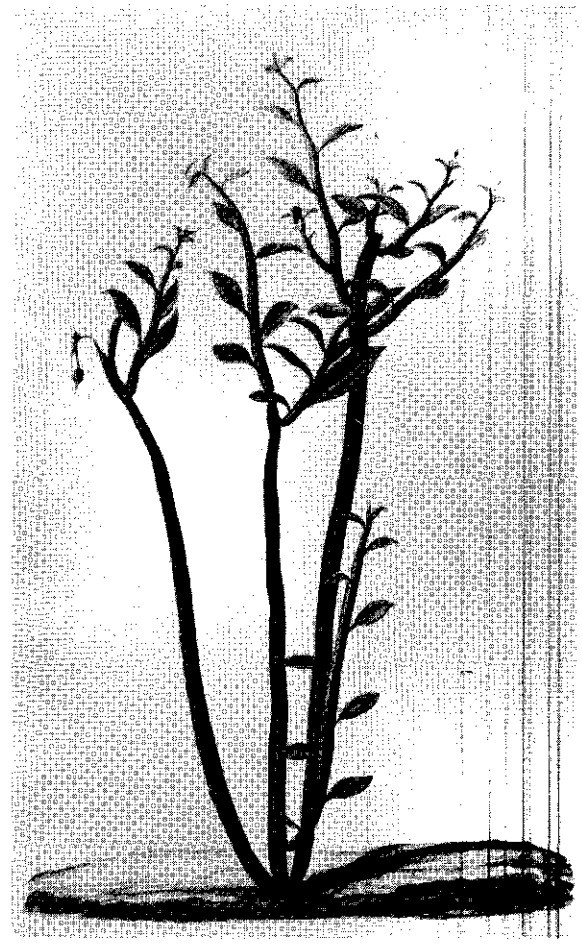
holotype, I propose LINN 1141.1 '1 *gossypifolia*' as lectotype. This specimen was available to Linnaeus when he wrote the entry for Species Plantarum.
Distribution. Tropical America.
Introduction 1687. Commelin raised the plant from seed received in 1687. The plant was four years old when Commelin wrote his text in 1691. Also Bauhin, Hermann, Plukenet and Sloane knew the plant, but Commelin provided the first record in cultivation. A water-colour by Pieter Withoos after the plant grown by Agnes Block at De Vijverhof may antedate Moninckx' drawing (see V.d.Graft 1943:136).
Specimens seen. LINN 1141.1, lectotype; Van Royen s.n. (L); Proctor 23506 (U); Wijnands 872, culta (WAG).

Leidesia procumbens (L.) Prain, Ann. Bot. 27: 400 (1913)

Atlas. 3 t.40, right. *Mercurialis Africana annua testiculata.*
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1697).
Taxonomic notes. Of the annual *Euphorbiaceae* from the Cape the water-colour is best matched with *Leidesia procumbens.* It is much like *Leidesia obtusa* (Thunb.) Muell.-Arg. also, but the number of teeth on the leaf margin is too high for that species. The basionym is *Mercurialis procumbens* L., Sp. Pl. 1753:1036, based on *Mercurialis androgyna* Virid. Cliff. 98 and Van Royen 1740:230. It is not represented in Van Royen's Herbarium, nor in H.S.C.
LINN 1188.5 *'mercurialis'* (not *'procumbens'* as Savage 1945 has it) is very poor, it might be this species, it is not the type.
Distribution. Southern Africa, widely distributed including the Cape.
Introduction 1697. *Mercurialis procumbens dicoccos africana, foliis violae tricoloris* of Hermann 1698 app. 10 probably is the same.
I do not know it in cultivation presently.
As this plant is drawn on the same vellum as *Manulea cheiranthus* (L.) L. that was grown in 1697, I accept the same date for it.
Specimens seen. Esterhuysen 11220, Table Mountain (BOL); Fries c.s. 433, Port Elisabeth (BOL); Hutchinson 1280, George (BOL); Killick & Vahrmeijer 4049, Natal (WAG); Stauffer 1143, Congo (WAG).

Pedilanthus tithymaloides (L.) Poit., Ann. Mus. Hist. Nat. Paris 19:390 t.19 (1812)

Atlas. 1 t.31. *Tithymalo affinis, seu similis aphyllus dictus, major indicus, lati-folius, flore sanguineo aviculae capitulum representante* (Breyne 1689:100).
Dutch: Wolfs-melck, van Curassau met roode blom.
Commelin. Hort. Amst. 1:31 t.16. *Tithymalus curassavicus myrti-folius, flore papilionaceo, coccineo, parvo* Parad. Bat. Prodr. (Hermann 1689:381).
Dutch: Curassousche Wolfs-melck, met myrtus bladeren,



Pedilanthus tithymaloides. Atlas 1 t.31

en een kleine papilioenswijse scharlaken-rode bloem.
Artist. Jan Moninckx (1686-1690, possibly 1688, see Breyne l.c.).
Citations. *Euphorbia tithymaloides* L. (α) *myrtifolia* L. 1753:453, [Hort. Cliff.:198.10, Hort. Ups.:140.0 '?', Dillen 1732:384, Wiman in Am. Ac. 3:111].
Euphorbia tithymaloides L. [ms LINN], Houttuyn 1777:742.
Pedilanthus tithymaloides (L.) Poit., Ann. Mus. Hist. Nat. Paris 1812,19:390 t.19 – Huth.
Taxonomic notes. Dressler (1957) designated Jacquin, Sel. Stirp. Amer. Hist. t.92 (1763) as neotype of *Euphorbia tithymaloides* L., and Commelin's plate as lectotype of (α) *myrtifolia.* Dressler rejected Croizat's (1943) proposal of Poiteau 1812 t.19 as neotype as it represents ssp. *parasiticus.* In Dressler's taxonomy *Euphorbia tithymaloides* var. *tithymaloides* and var. *myrtifolia* are synonyms. Dressler's choice of a neotype is superfluous as a specimen is available to typify *Euphorbia tithymaloides* in the Clifford herbarium, H.S.C. 198.10. This sterile specimen shows leaves with an obtuse leaf-base. To me it appears to represent ano-

ther subspecies than Jacquin's Plate 92, and therefore nomenclatural adjustment could be necessary. However, I prefer to leave this problem for the attention of someone who is better acquainted with the taxonomy of *Pedilanthus*.
Distribution. Mexico to Suriname (Adams 1972:431), including Curaçao (Dressler 1957:142).
Introduction ante 1688. Breyne (1689:100) saw the plant flowering in Amsterdam in 1688.
Hermann 1689:381 and Commelin 1689:350 *(Tithymalus frutescens Americanus myrtifolius, flore difformi rubicundo,* cited by Commelin 1703:26 and Plukenet 1692 t.230 f.2, who considered the plant Apocynaceous and knew it 'ex Cod. Benting', i.e. Willem Bentinck's codex) record the species in the same year. Commelin's plant was received from Simon van Beaumont. Kiggelaer (1690:40) mentioned the species in Van Beaumont's garden. Hermann (1698) illustrated the species on t.234.

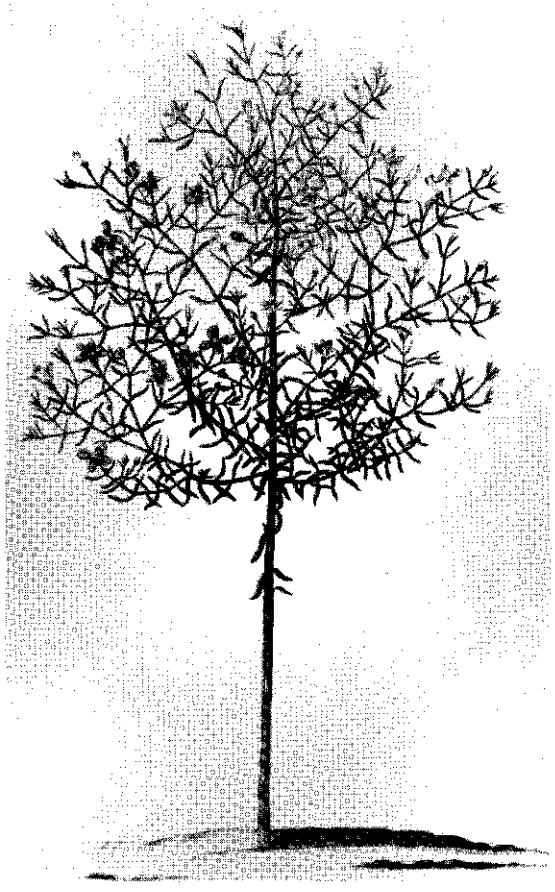
Phyllanthus epiphyllanthus L., Sp. Pl.:981 (1753)

Atlas. 5 t.24. *Phyllanthos Americana planta, flores e singulis foliorum crenis proferens.*
Commelin. Hort. Amst. 1:199 t.102. Idem, Par. Bat. Prod. (Hermann 1689:365).
Dutch: Americaansch blader-bloem gewas, brengende hare bloemen uit de kerven der bladeren voort.
Artist. Maria Moninckx (1686-1690).
Citations. *Phyllanthus epiphyllanthus* L. 1753:981, [Hort. Cliff.:439.1 'opt.', V.Royen:200.1, ms LINN], Burm.f. 1768 Fl. Ind.:295 (195), Miller 1768, Huth, Webster 1956:2, 12.
Xylophylla latifolia L. 1771:221, Gaertn. 1791:123, Kuntze 1891:596.
Xylophylla falcata Sw. 1788:28 – Poir. 1808:814.
Taxonomic notes. The nomen specificum legitimum for this species is cited without change from Hort. Cliff. The specimen H.S.C. 439.1 is proposed here as the lectotype, in agreement with Webster 1956:2. Webster (l.c.) amply discussed the taxonomy and nomenclature of this species.
Distribution. West Indies.
Introduction. Simon van Beaumont donated a plant from his garden to Commelin. The editors note that it was introduced in the Hortus Beaumontianus from Porto Rico.
Specimens seen. H.S.C. 439.1, lectotype (BM); *Le* Gallo s.n. (WAG); Webster c.s. 9067 (U).

GENTIANACEAE

Chironia baccifera L., Sp. Pl.:190 (1753)

Atlas. 6 t.25. *Centaurium minus arborescens pulpiferum.*
Commelin. Rar. & Exot.:9 t.9. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Chironia baccifera* L. 1753:190, [Hort. Cliff.: 54.3, ms LINN], Burm.f. 1768 P.F.C.:5, Miller 1768, Willd. 1797:1070, Huth.



Chironia baccifera. Atlas 6 t.25

Taxonomic notes. Two specimens of *Ch. baccifera* are available in the Linnean herbarium, LINN 252.10 & 11. These specimens are not marked by '6', the species number in Species Plantarum. Although there is no proof that these specimens were seen by Linnaeus in 1753, Marais & Verdoorn (1963) designated LINN 252.10 as type of the name. I prefer to indicate Commelin's plate as lectotype.
Distribution. South Africa: Cape Province, Natal.
Introduction. Commelin did not mention the source of his plant.
Specimens seen. LINN 252.10 & 11; Bayliss 5562 (WAG); Goldblatt 1397 (WAG); Hanekom 1383 (WAG); Ecklon 349 (S); Wijnands 887 (WAG).

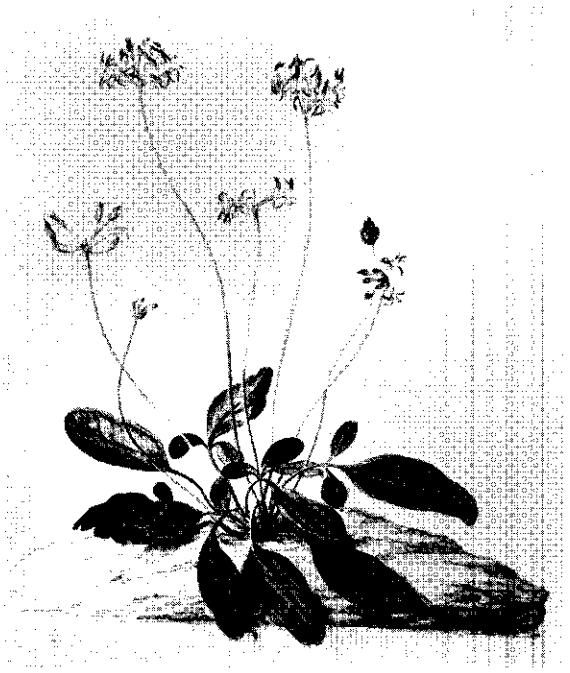
Chironia baccifera L., Sp. Pl.:190 (1753)

Atlas. 8 t.8. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. This plate seems to represent the same species as the one in vol.6 t.25, although the leaves are narrower.

Orphium frutescens (L.) E.Meyer, Comm. Pl. Afr. Austr.:811 (1838 ('1837')) [Pl.48]
Atlas. 6 t.24. *Centaurium minus Africanum arborescens latifolium, flore ruberrimo* (Oldenland no.26).
Commelin. Rar. & Exot. 8 t.8. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Chironia frutescens* L. 1753:190, [Hort. Cliff.: 54.2, ms LINN], Bergius 1767:46, Miller 1768, Willd. 1797:1071, Huth.
Orphium frutescens (L.) E.Meyer 1838:811 – Marais & Verdoorn 1963:236.
Taxonomic notes. Linnaeus provided a new nomen specificum legitimum for this species in Sp. Pl. *'Chironia frutescens capsulifera'*. He did not cite the phrase-name from Hort. Cliff.:54.2. The specimens in the Linnean herbaria LINN and S-Linn do not qualify as types since they are not annotated with the number 7 of the species in Species Plantarum. The only remaining element, Commelin's Plate 8, is, therefore, proposed as lectotype.
Orphium frutescens is the type of the genus *Orphium* E.Meyer.
Distribution. South Africa.
Introduction ante 1706. Commelin did not specify the source of his plant.
The species was known to Breyne (1689).
Specimens seen. LINN 252.12 and 13; herb. Dahl a Linn. P. (S-Linn); Acock 126 (S); Rodin 3295 (WAG); Wijnands 723, culta (WAG).

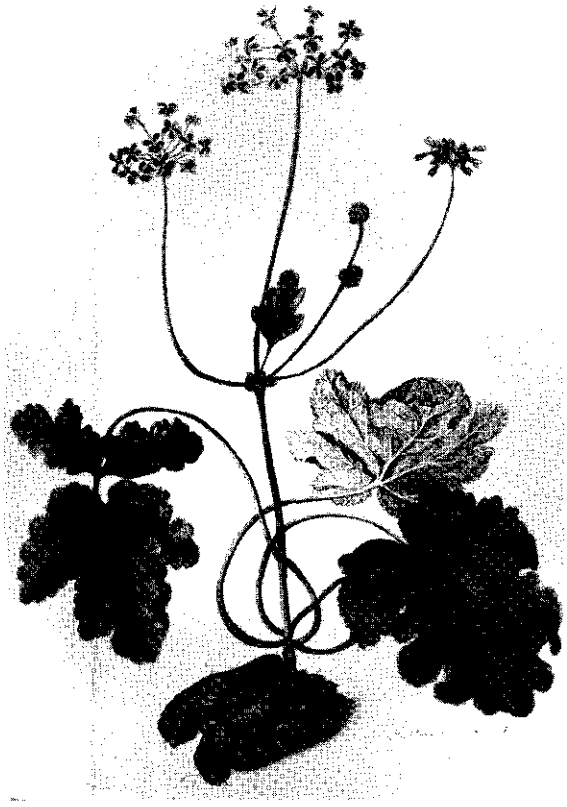
GERANIACEAE

Pelargonium acetosum (L.) L'Hérit. in Aiton, Hort. Kew. ed.1,2:430 (1789)
Atlas. 5 t.43. *Geranium Africanum Frutescens folio, crasso, & glauco, acetosae sapore.*
Commelin. Prael. Bot. 54 t.4. Idem.
Artist. Jan Moninckx (1700-1702).
Citations. *Geranium acetosum* L. 1753:678, [Hort. Cliff.:345.13, ms LINN, Boerhaave 1719,1:263.16, Tilli 1723:67], Burm.f. 1759:38, Burm.f. 1768 P.F.C.: 18, Miller 1768, Cav. 1787:239, Lam. 1788:673.
Pelargonium acetosum (L.) L'Hérit. 1789:430 – Willd. 1800:665, Huth, Clifford 1958:177.
Taxonomic notes. *Geranium acetosum* L. has its nomen specificum legitimum taken from Hort. Cliff. The specimen in H.S.C. 345.13 is proposed here as the lectotype.
Distribution. South Africa, eastern part of the Cape Province, see V.d.Walt 1977:2 (map).
Introduction ante 1703. Commelin does not give the source of his plant; it probably came from the Cape ca. 1700. Drawing 24 in Burman's Florilegium (PRE) is annotated '*Geranium Acetosae sapore* Commelini'.
Specimens seen. 'H.U. 77 *acetosum*', LINN 853.3; H.S.C. 345.13, lectotype (BM).



Pelargonium auritum. Atlas 4 t.9

Pelargonium auritum (L.) Willd., Sp. Pl. ed.4,3: 644 (1800)
Atlas. 4 t.9. *Geranium Africanum foliis plerumque auritis, Floribus ex rubro purpurascentibus* (Oldenland).
Commelin. Hort. Amst. 2 t.61. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Geranium auritum* L. 1753:679, [ms LINN, Ray 1704:514], Burm.f. 1759:47, Burm.f. 1768 P.F.C.: 19, Cav. 1787:236, Lam. 1788:672.
Geranium prolificum L. δ *auritum* (L.) L. 1763:950.
Pelargonium hirsutum (Burm.f.) L'Hérit. var. *melananthum* (Jacq.) Harvey – Knuth 1912:340.
Pelargonium auritum (L.) Willd. 1800:644; DC. 1824: 651, Huth, Van der Walt & Vorster 1980:285.
Taxonomic notes. Linnaeus based his species entirely on Commelin's plate. No specimen is available in LINN. This is one of the few cases where Linnaeus wrote the number of the species in Species Plantarum in his annotation in his copy of Commelin: '17 *Geranium auritum*'. Van der Walt & Vorster (l.c.) designated the Commelin plate as the type, and cited the Moninckx water-colour which is the typotype.
The species has long been known as *P.hirsutum* (Burm. f.) Ait.f. and was illustrated as such (as var. *melananthum* (Jacq.) Harvey, the type-variety) by Van der Walt 1988:21.
Distribution. South Africa: Cape Province, see Van der Walt 1977:21 (map).
Introduction ante 1700. Moninckx's water-colour is the earliest known evidence for the introduction of this species. Commelin does not state the origin of this plant.



Pelargonium lobatum. Atlas 4 t.10

Pelargonium lobatum (Burm.f.) Willd., Sp. Pl. ed.4,3:650 (1800)

Atlas. 4 t.10. *Geranium Africanum noctu olens Tuberosum vitis foliis Hirsutis.*

Commelin. Hort. Amst. 2:123 t.62. Idem.

Artist. Maria Moninckx (1698-1700).

Citations. *Geranium triste* L. 1753:676, [Hort. Cliff.: 345.12 γ, V.Royen 352.18, ms LINN, Boerhaave 1719,1: 263.14].

Geranium lobatum N.L. Burman, Spec. Bot. Ger. 1759:44, Linn. 1763:950, Burm.f. 1768 P.F.C.:19, Cav. 1787:250, Lam. 1788:679.

Pelargonium lobatum (Burm.f.) Willd. 1800:650, Ait.f. 1804:165, Huth, Knuth 1912:354, Clifford 1958:171.

Pelargonium zonale (L.) L'Hérit. 1789:424 – Stafleu 1969 Pl.IV, reproduction of the plate, in error.

Taxonomic notes. Maria Moninckx's water-colour represents the species that is currently known as *Pelargonium lobatum.* The drawing in Van der Walt 1977:24 is a good match for it. As Commelin's plate is a syntype of *Geranium triste,* the use of the name *G.lobatum* for Plate 62 is only justified if *G.triste* can be typified by another element. As far as I can see nearly all elements, viz. Hort. Cliff.:344, Van Royen:352 and Commelin t.62, belong to the same taxon, Linnaeus var. β and γ and Hort. Ups.:197 might be *Pelargonium triste* as presently understood, e.g. by Van der Walt 1977:46.

The specimen LINN 858.39 is annotated '1 *triste* ε', but as Linnaeus did not change his concept of the species from the Hortus Cliffortianus, I do not think it is correct to typify the name by this specimen, if it is *G.triste* auct. at all.

In Hort. Cliff. the species is based on Boerhaave 1719: 263.11, Cornut 1635 t.110 and Morison 1688:517; this is var. β of 1753. In the Hort. Ups.:197 the phrase from Hort. Cliff. is repeated without any further citations except Breyne cent.126 t.58, which was cited for var. α in Hort. Cliff. and for var. γ in Sp. Pl. Summing up, in 1738 the main part of the entry no.12 is *P.triste,* and the added variety γ is *P.lobatum.* In 1740 Van Royen separated the taxa, no.17 is *P.triste,* no. 18 is *P.lobatum.* In 1748, however, Linnaeus treated essentially *P.triste* in Hort. Ups. In 1753 the main elements of the treatment in Hort. Cliff. are referred to the varieties β and γ, but Hort. Ups. (is mainly *P.triste*) is still cited by Linnaeus. This means that Linnaeus admitted both *P.triste* s.str. and *P.lobatum* in one single species *P.triste* s.lat. In 1757 N.L.Burman revived Van Royen's two species, naming his no.17 *G.lobatum,* this view was accepted by Linnaeus in 1763, where Hort. Cliff.: 344 is cited for *G.triste* excepting Commelin's plant.

A case could be made for typification of *G.triste* L. by Commelin's plate, the more so since Linnaeus annotated Commelin's plate in his personal copy with the number of the species in Sp. Pl. '*Geranium* 1 *triste*'. This would, however, upset current nomenclature. Therefore, I think stability is served in typifying *G. triste* by H.S.C. 344.12 β.

Burman's *G.lobatum* could be typified by *'Geranium monomotapense floribus atro purpureis, folii vitis vinifera',* an Oldenland specimen in herb. Sloane (BM), or, preferably, a specimen in herb. Burman in G (not seen). The Clifford herbarium contains two specimens in 344.12, one for 12 β, with Cornut's phrase-name which is *Pelargonium triste,* and one for 12 γ which is *P.lobatum.*

Distribution. South Africa: Cape Province, see Van der Walt 1977:24 (map).

Introduction. Commelin was the first to mention this species. He stated that the 'roots' were sent from Africa in 1698 to Huydecoper, who presented them to the Hortus Medicus.

Specimens seen. H.S.C. 344.12 γ (BM); Lewis Grant 3432 (WAG).

Pelargonium myrrhifolium (L.) L'Hérit. var. **fruticosum** (Cav.) Harv., Fl. Cap. 1:286 (1860)

Atlas. 1 t.14. *Geranium Aethiopicum, Myrrhidis folium Flore magno Striato Breijnii* (Breyne 1678:129 t.59). Dutch: Oijevaars-beck, van de Caap de Goede Hoop, met groote gestreepte Blom.

Commelin. Not published by Commelin.

Pelargonium myrrhifolium var. *fruticosum*. Atlas 1 t.14

Artist. Not signed (1686-1690).
Taxonomic notes. Breyne's plant was included by Linnaeus only in 1763 under *Geranium myrrhifolium* β. Linnaeus' *G.myrrhifolium* 1753:677 is based on Hort. Cliff.:345 and Van Royen 1740:353. Also Hermann 1687:279 t.280 is included.
See for his var. β of 1753, that consisted of Hermann 1698 and Commelin 1701 t.63, *Pelargonium rapaceum* (L.) L'Hérit.
The water-colour has a good match in the illustration opposite p.29 in Van der Walt 1977. Typical *P.myrrhifolium* has less dimorphic petals.
Distribution. South Africa: Cape Province, see Van der Walt 1977:28 (map).
Introduction ante 1690. The plate is the first one of this taxon.
Specimen seen. Coppejans 1513 (WAG).

Pelargonium peltatum (L.) L'Hérit. in Ait., Hort. Kew. ed.1, 2:427 (1789)
Atlas. 5 t.41. *Geranium Africanum, foliis inferioribus Asari, superioribus Staphidis Agriae maculatis splendentibus et acetosae sapore.*
Commelin. Prael. Bot.:52 t.2. Idem.
Artist. Jan Moninckx (1701-1702).
Citations. *Geranium peltatum* L. 1753:678, [Hort. Cliff.:345.13, ms LINN, Boerhaave 1719,1:262.5, Tilli 1723:67], Burm.f. 1759:38, Burm.f. 1768 P.F.C.:19, Miller 1768, Lam. 1788:669, Cav. 1787:232.
Pelargonium peltatum (L.) L'Hérit. 1789:427 – Willd. 1800:669, Huth, Knuth in Engler 1912:422.
Taxonomic notes. *Geranium peltatum* has its nomen specificum legitimum taken from Hort. Cliff.; H.S.C. 345.14 seems to me a suitable lectotype.
Distribution. South Africa: Cape Province, see Van der Walt 1977:33 (map).
Introduction 1700. Commelin received his plants from the Cape in 1700, sent by Willem Adriaan van der Stel. This *Pelargonium* is represented in the Codex of the Duchess of Beaufort 1 t.46 f.1.
Specimens seen. H.S.C. 345.14, lectotype (BM); LINN 858.12; Bayliss 123 (WAG).

Pelargonium pinnatum (L.) L'Hérit. in Ait., Hort. Kew. ed.1,2:417 (1789) [Pl.41]
Atlas. 5 t.42. *Geranium Africanum Astragali Folio.*
Commelin. Prael. Bot.:53 t.3. Idem.
Artist. Jan Moninckx (1700-1702).
Citations. *Geranium pinnatum* L. 1753:677 (as '53 t.53'), [ms LINN], Burm.f. 1759:49, Burm.f. 1768 P.F.C.:19.
Pelargonium pinnatum (L.) L'Hérit. 1789:417 – Willd. 1800:647, Clifford 1958:205.
Geranium astragalifolium Cav. 1787:257 nom. illeg., Lam. 1788:684, Jacquin 1791:184.
Pelargonium astragalifolium (Cav.) Pers. – DC. 1824: 653, Huth.
Geranium prolificum L. γ *pinnatum* (L.) L., Sp. Pl. ed.2, 1763:950.
Dimacria astragalifolia (Cav.) Sweet 1822:103.
Taxonomic notes. *Geranium pinnatum* L. is typified here by Commelin's plate, because there is no specimen in LINN. *Geranium astragalifolium* Cav., Diss. Geranio 257 (1787) is superfluous as *G.pinnatum* L. is cited as a synonym.
Distribution. South Africa: S.W.Cape Province, see Van der Walt 1977:34 (map).
Introduction 1699. Commelin received the seeds from the Cape in 1699, as an additional admixture among a consignment of seeds.

Pelargonium rapaceum (L.) L'Hérit. in Ait., Hort. Kew. ed.1,2:418 (1789) [Pl.24]
Atlas. 4 t.11. *Geranium Africanum myrrhidis folio, Flore albicante, radice rapacea.*
Commelin. Hort. Amst. 2:125 t.63. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Geranium myrrhifolium* L. β, 1753:677.
Geranium myrrhifolium L. β *rapaceum* (L.) Burm.f., Spec. Bot. Ger. 1759:45 (Aug.17).
Geranium rapaceum L., Syst. Nat. ed.10, 1759:1141 (May-June).
Geranium prolificum L., Sp. Pl. ed.2, 1763:949, [ms LINN], Burm.f. 1768 P.F.C.:19.
Geranium coriandrifolium L., Sp. Pl. ed.2, 1763:949, Cav. 1787:264, Lam. 1788:687.
Pelargonium rapaceum (L.) L'Hérit. – Jacquin 1791:

196, Willd. 1800:649, Huth, Knuth 1912:348, Clifford 1958:207.
Pelargonium prolificum (L.) Clifford 1958:204.
Taxonomic notes. *Geranium myrrhifolium* L. is discussed in the paragraph on atlas vol.1 t.14.
Geranium rapaceum L. 1763 has Commelin's plate as the only reference. There is a specimen in Linnaeus' herbarium LINN 858.37. Savage 1945:119 transcribes the number on the lefthand bottom corner as '1A', the number of the species in Syst. Nat. ed.10; I read it as '21', I do not know the meaning of this number. Commelin's plate is probably the type as Linnaeus' diagnosis agrees well with it. Therefore plants with creamy white petals and red claws match the type.
Geranium prolificum L. 1763 is a substitute for *G.rapaceum* L.
Distribution. South Africa: Cape Province, the Karroo and Namaqualand, see Van der Walt 1977:39 (map).
Introduction ante 1700. Commelin did not state the origin of his plant, no earlier reference to it is known to me. The species is probably represented in the Codex of the Duchess of Beaufort 1 t.11 f.3.

Pelargonium zonale (L.) L'Hérit. in Ait., Hort. Kew. ed.1, 2:424 (1789) [Pl.40]
Atlas. 5 t.40. *Geranium Africanum arborescens, Alchemillae hirsuto folio, Floribus rubicundis.*
Commelin. Prael. Bot.:51 t.1. Idem.
Artist. Jan Moninckx (1686-1702).
Citations. *Geranium zonale* L. 1753:678, [Hort. Ups.: 196.2, ms LINN, Boerhaave 1719,1:262.2, Tilli 1723: 67], Burm.f. 1759:36, Burm.f. 1768 P.F.C.:18, Miller 1768, Cav. 1787:239.
Pelargonium zonale (L.) L'Hérit. 1789:424 – Willd. 1800:667, Ait.f. 1812:172, Huth, Blunt 1950:135 tab.22 (reproduction of the original water-colour).
(*Geranium inquinans* L. 1753:676 includes Hort. Cliff. 345.18 where Commelin's plate is cited.)
Taxonomic notes. *Geranium* L. has its nomen specificum legitimum taken from Hort. Ups.:196.2. The specimen LINN 858.14 '11 *zonale*', is proposed here as the lectotype.
Distribution. South Africa, see van der Walt 1977:50 (map).
Introduction ante 1703. Commelin was the first to mention the species.
Specimens seen. '11 *zonale*', lectotype, LINN 858.14; Lewis Grant s.n. (WAG).

HAMAMELIDACEAE

Liquidambar styraciflua L., Sp. Pl.:999 (1753)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:191 t.98. *Styrax arbor virginiana aceris folio, potius platanus virginiana styracum fundens.* Ray. Hist. Plant. (Ray 1688,2:1799).

Hypericum canariense. Atlas 4 t.16

Dutch: Virginiaansche styrax-boom, met booghouts bladeren.
Citations. *Liquidambar styraciflua* L. 1753:999 – not cited in the protologue – [ms LINN], Huth.
Taxonomic notes. Kalm's specimen in the Linnean herbarium LINN 1134 '1 *styraciflua*' is proposed here as the lectotype of *L.styraciflua.*
Distribution. From Connecticut and Illinois south to Central America.
Introduction 1683. Commelin gives no information on the source of his plant. It might have come from Bishop Compton's garden at Fulham, where Ray saw it. Wein (1931) gave 1863 as year of introduction in England. The species was cultivated in Leiden in 1686.
Specimens seen. LINN 1134.1, lectotype; herb. Van Royen L 90428-427 & -428, both annotated by the younger V.Royen; Belder 25, culta (WAG); Springer s.n., culta (WAG).

HYPERICACEAE

Hypericum canariense L., Sp. Pl.:784 (1753)
Atlas. 4 t.16. *Hypericum frutescens canariense multiflorum.*
Hypericum seu androsaemum magnum canariense ramo-

sum, copiosis floribus fruticosum. Pluckenet. Phyt. tab. CCCII fig.1 (Plukenet 1692:302 f.1).
Commelin. Hort. Amst. 2:135 t.68. *Hypericum frutescens canariense multiflorum.*
Artist. Not signed (1686-1700).
Citations. *Hypericum canariense* L. 1753:784, [Hort. Cliff.:381.9, Am. Ac. 8:232, ms LINN, Boerhaave 1719,1:242.10], Miller 1768.
Hypericum floribundum Aiton 1789,3:104 – Willd. 1800:1448, Ait.f. 1812:423, Sweet 1818:174, Loudon 1844:398, Huth.
Webbia floribunda (Ait.) Spach 1836:356 – Webb & Berth. 1841:47.
Taxonomic notes. The nomen specificum legitimum for *Hypericum canariense* is taken from Hort. Cliff., therefore H.S.C. 381.9 is proposed as the lectotype. *Hypericum floribundum* is at present considered to belong to the variable *H.canariense.*
Distribution. Canary Islands: Gran Canaria, Tenerife, Palma, Gomera Hierro.
Introduction ante 1700. 'This new kind originated from seeds, that were sent from the Canary Islands', no year is given. Plukenet 1692 t.302 f.1, cited by Commelin, shows the same species.
Specimens seen. H.S.C. 381.9, lectotype (BM); '7' LINN 943.15, ex Herb. Clifford; Kunkel 12747 (WAG); Bourgeau 1240 (WAG); Dinn 213 (WAG); V.d.Maesen 427 (WAG); Wijnands 633 (WAG).

HYPOXIDACEAE

Pauridia minuta (L.f.) Dur. & Schinz, Consp. Fl. Afr. 5:142 (1895)

Atlas. 1 t.24, left. *Sisyrhynchium affinis, Aethiopicum omnium minimum, Folio angustissimo, Flore albo pentapetaloide.*
Dutch: Alderkleijnste bastert Sisyrhynchium, met witte Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1691).
Taxonomic note. *Pauridia* is based on *Ixia minuta* L.f. (Thompson 1979:621-625). The type is Thunberg sheet 974 (UPS). Dr P.Goldblatt confirmed the identification.
Distribution. South Africa: S.W.Cape.
Introduction pre 1690. No earlier record of this species is known. None of the species figured on t.24 have been published.
The species never has been in cultivation.
Specimens seen. Thunb. s.n., type (UPS, microfiche); Bos 50 (WAG).

IRIDACEAE

Antholyza ringens L., Sp. Pl.:37 (1753) [Pl.6]

Atlas. 2 t.11. *Gladiolo Aethiopico similis Planta, Angustifolia caule hirsuto, Flore rubicundissimo.*
Dutch: Smal-bladerige Moorenlands Sweert-Kruijd gelijckend Gewas, met hoog-roode Bloemen, en ruijge Steelen.
Commelin. Hort. Amst. 1:81 t.41. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Antholyza ringens* L. 1753:37- as t.41- [Hort. Ups.: 16, ms LINN, Rudbeck 1701,2:237 with a copy of the plate], Burm.f. 1768 P.F.C. unnumbered first page, Lam. 1783:200, Willd. 1797:223, Vahl 1805: 121, Huth, Brown 1932:265, Milne-Redh. 1937 in Bot. Mag. t.9470.
Babiaba ringens (L.) Ker in Koenig & Sims (ed.) Ann. Bot. 1805,1:233, Ait.f. 1810:104, Sweet 1818:11, Baker 1896 in Fl. Cap. 6:114.
Taxonomic notes. Linnaeus' diagnosis reads *'stamine unico declinato'* which is a rare condition in this species. The Linnean diagnosis of *A.ringens* is clearly based on Commelin's plate, which therefore is the holotype as pointed out by Brown (l.c.). LINN 60.1 is not annotated with the number '1' of this species in Sp. Pl. *A. ringens* is the type species of the genus. The proposal of Hitchcock & Green (1930:18) of *A.cunonia* as type species has been rejected by Brown (l.c.) and Lewis (1959:138).
Note on the plate. Details are added in the engraving.
Distribution. South Africa: S.W.Cape.
Introduction ante 1690. Commelin had this species from 'Africa' (i.e. the Cape).
Also Breyne 1739 t.8 f.1 illustrated this species. The same drawing is in Breyne's Flora Capensis as edited by Gunn & Du Plessis (1978). Another identical drawing at PRE is annotated with a reference to Commelin's Plate 41.
Specimens seen. Goldblatt 2835 (WAG); Lewis Grant 2604 (WAG); LINN 60.1.

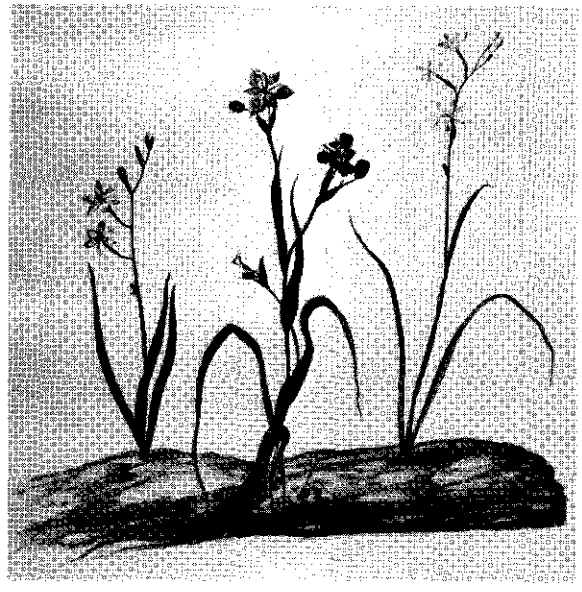
Gladiolus angustus L., Sp. Pl.:37 (1753)

Atlas. 1 t.20. *Sisyrhynchium Aethiopicum, Flore Sulphureo, Hexapetalo, Galea item Sulphureo, Labia propendens, quorum petala Maculis Purpureis triangularis notata* Hort. Med. Amstelod: (J.Commelin 1689:328 *'colore'* after *'Sulphureo'*).
Dutch: Sisyrhynchium van de Caap, met Sulphurachtige gevlakte Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. *Gladiolus angustus* is typified by LINN 59.16 by Lewis & Obermeyer 1972:88. The identification was confirmed by Dr P.Goldblatt.
Distribution. South Africa: Cape Province.
Introduction ante 1690. Boerhaave (1719,2:127.5) had the species in Leiden, where it was still in 1740 (Van Royen 1740:19.2, vouched by Van Royen s.n., L 904,137-244). Linnaeus had it illustrated by Ehret for the Hortus Cliffortianus.
Moninckx's water-colour is the first record of this *Gla-*

Gladiolus angustus. Atlas 1 t.20

diolus in cultivation. Clifford's plant was from a new introduction from the Cape.
Drawing 78 in the Florilegium owned by the Botanical Research Institute at Pretoria (discussed by Oliver 1981) represents *Gladiolus angustus* L. The drawing is annotated by J.Burman as *Sisyrhynchium aethiopicum* Commelin Hort. Amst.:83. This species is not mentioned on this page, however.

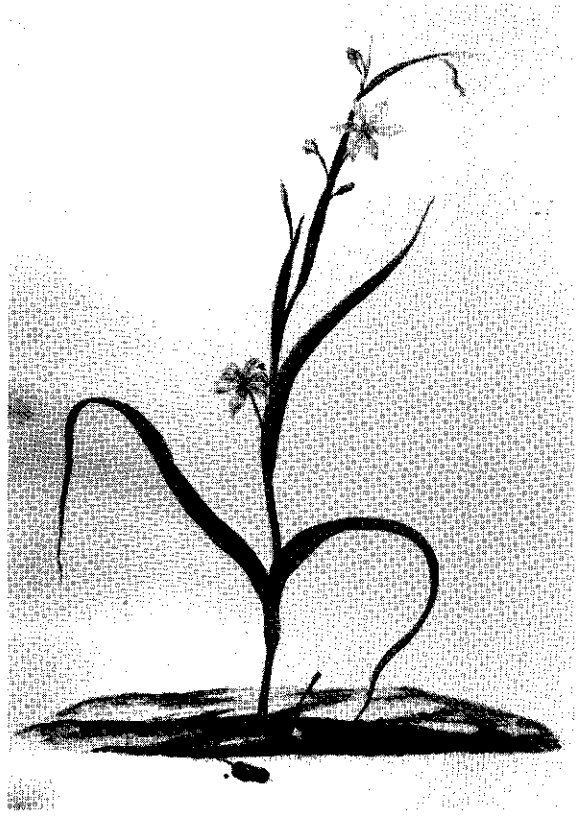
Gladiolus gracilis Jacq., Coll.4:159 (1792)
Atlas. 1 t.24, centre. *Gladiolo affinis Aethiopicus, Flore obsoleto Odoratissimo.*
Dutch: Bastert Gladiolus, met welriekende Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. *Gladiolus gracilis* Jacq. is typified by Jacq. Icones 1795 t.246 by Lewis & Obermeyer 1972: 224. The identification was confirmed by Dr P.Goldblatt.
Distribution. South Africa: Cape Province.
Introduction ante 1690. Probably this is the first record of the species in cultivation. Plukenet 1692 t.187 f.4 has a *Gladiolus,* copied from Bishop Compton's set of Cape drawings, that might be the same species or not.



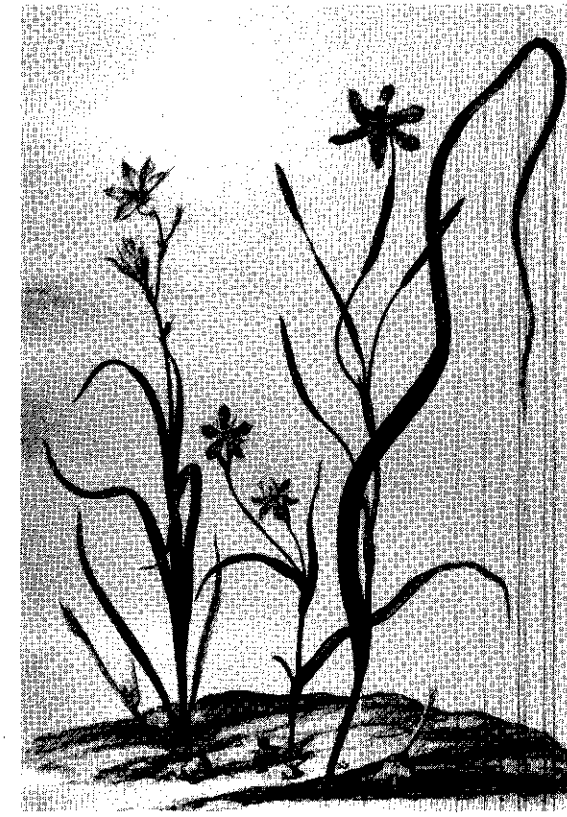
Hesperantha falcata, Moraea vegeta, Hesperantha falcata.
Atlas 1 t.21

Hesperantha falcata (L.f.) Ker-Gawl. in Koenig & Sims, Ann. Bot. 1:225 (1805)
Atlas. 1 t.21, right. *Sisyrhynchium Aethiopicum minus Angustifolia, Flore albo.*
Dutch: Kleijn Africaans Sisyrhynchium, met witte Blom.
Commelin. Hort. Amst. 1:83 t.43. *Sisyrhynchium Aethiopicum majus angusti-folium floribus albis.*
Dutch: Groot Smal-Bladerig Morelands Sisyrhynchium met witte bloemen.
Artist. Jan Moninckx (1687-1688).
Citations. *Ixia* species – Huth.
Taxonomic notes. Dr P.Goldblatt provided the identification of this plant. The basionym *Ixia falcata* L.f. 1782:92 is based on a Thunberg collection (UPS-Thunb.!, S!).
Introduction 1687. The illustration in Bot. Mag. 1802 t.566, cited by Gawler, is the first record of the species I know of after Commelin's plate. In the Atlas is written 'Reared from seed, and have flowered 1687 and 1688'.
Distribution. South Africa: S.W.Cape.

Hesperantha falcata (L.f.) Ker-Gawl. in Koenig & Sims, Ann. Bot. 1:225 (1805)
Atlas. 1 t.21, left. *Sisyrhynchium Aethiopicum minus latifolium Floribus ex albido purpurascente.*
Dutch: Sisyrhynchium van Africa, met Purpurachtige witte Blom.
Commelin. Hort. Amst. 1:84 t.44. *Sisyrhynchium Aethiopicum minus lati-folium flore hexapetalo albo.*
Dutch: Kleen breed-bladerig morelands sisyrhynchium, met witte sesbladerige bloemen.



Hexaglottis lewisiae. Atlas 1 t.22



Homeria flaccida, Moraea gawleri, Sparaxis bulbifera. Atlas 1 t.23

Artist. Jan Moninckx (1686-1690).
Citations. *Ixia* species – Huth.
Taxonomic notes. Dr P.Goldblatt provided the identification of this plant.

Hexaglottis lewisiae Goldblatt, J.S.Afr. Bot. 37: 234 (1971)
Atlas. 1 t.22. *Sisyrhynchium Aethiopicum, Flore luteo.* Breynii Prod. 11 (Breyne 1689).
Dutch: Sisyrhynchium, van de Caap de Goede Hoop, met geele Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1688).
Taxonomic notes. *Hexaglottis lewisiae* is a nomen novum for *H.flexuosa* (L.f.) Sweet, proposed by Goldblatt as the basionym *Moraea flexuosa* L.f. is a superfluous name for *Ixia longifolia* Jacq. The type is Thunberg s.n. (UPS – Thunb. 1217!).
Distribution. South Africa: S.W.Cape.
Introduction 1688. Chittenden (1951:993) gives 1766 as the year of introduction.

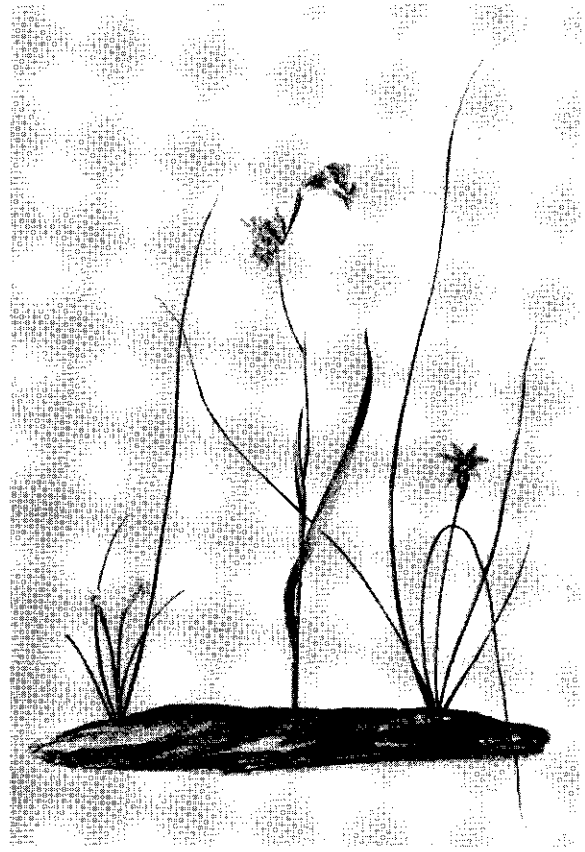
Homeria flaccida Sweet, Hort. Brit.:395 (1826)
Atlas. 1 t.23, right. *Sisyrhynchium ex Phoeniceo suaverubente Flore Aethiopicum.* Breynii Cent. (Breyne 1678: 36).
Dutch: Groot Africaans Sisyrhynchium, met roode Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Breyne's plate cited in the atlas is the type of *Tulipa breyniana* L.
Lewis (1941:57-59) used this name as basionym for *Homeria breyniana* (L.) Lewis. Goldblatt (1973:139), however, rejected the name as he considered it impossible to identify the type-illustration. *Homeria collina* (Thunb.) Salisb. is the correct name for the species. *H.flaccida* differs from *H.collina* in its more robust habit and bright orange-red, not pink or yellow, open, cupped tepals (see for details Goldblatt l.c.). The type of *H.flaccida* is t.1612 in Curtis' Bot. Mag. (1812).
Dr P.Goldblatt confirmed the identification.
Distribution. South Africa: S.W.Cape, Caledon-Klawer.
Introduction ante 1690. The water-colour in the Moninckx-atlas is the first record of this species known to me. It is also represented in Breyne's Florilegium Capense as edited by Gunn & Du Plessis (1978 t.65). The species is rather common in cultivation presently, usually under the name *H.collina* var. *aurantiaca.* Chittenden 1951:1007 gives 1810 as year of introduction.

Ixia species
Atlas. 8 t.55. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Moraea gawleri Sprengel, Syst. Veg. 5 (Index): 462 (1828)
Atlas. 1 t.23, centre. *Sisyrhynchium Aethiopicum, minus flore obsoleto, Macula lutea notato, Staminibus caeruleis.* Hort. Med. Amst. (Commelin 1689).
Dutch: Kleijn-Caapse Sisyrhynchium, met Filiomortverwige Blom, geele Vleckjes, en blaauwe Blomdraatjes.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Dr P.Goldblatt provided the identification of this plant.
M.gawleri is a nomen novum for *Iris crispa* L.f., typified by Thunberg s.n. (UPS-Thunb. 1120), cf. Goldblatt 1976:689.
Distribution. South Africa: Cape, see Goldblatt 1976 fig.7.
Introduction ante 1690. Moninckx's water-colour is the first record of *M.gawleri* in cultivation.
Specimens seen. Bayliss 5969 (WAG); Goldblatt 3609 (WAG).

Moraea vegeta L., Sp. Pl. ed.2:59 (1762)
Atlas. 1 t.21, centre. *Sisyrhynchium Aethiopicum minus Flore obsoleto Macula lutea notata.*
Dutch: Kleijn Sisyrhynchium, van de Caap, met Filamente Coleurende Blom, en geele vlakken.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. The type of *Moraea vegeta* L. is Miller 1758 t.238, designated by Barnard & Goldblatt 1975.
Dr P.Goldblatt kindly provided the identification of this plate.
Distribution. South Africa: S.W.Cape (see Goldblatt 1976 fig.8).
Introduction ante 1691. Moninckx's water-colour is the first record of this species in cultivation. It is seen occasionally in collections at present.

Romulea rosea (L.) Eckl., Top. Verz.:19 (1827)
Atlas. 1 t.24, right. *Sisyrhynchium Aethiopicum, minus Foliis angustissimis, Flore purpurascente.*
Dutch: Kleijn Sisyrhynchium, met purpure Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. *Ixia rosea* L. 1767:75 has been typified by Miller Ic. 1767 t.240 by De Vos 1972:247.
Distribution. South Africa.
Introduction ante 1690. Chittenden 1951:1804 has 1818 as year of introduction.
Specimen seen. Bos 322 (WAG).



Romulea rosea, Gladiolus gracilis, Pauridia minuta. Atlas 1 t.24

Sparaxis bulbifera (L.) Ker-Gawl. in Koenig & Sims, Ann. Bot. 1:226 (1805)
Atlas. 1 t.23, left. *Sisyrhynchium Aethiopicum majus Flore albo, exterius lineis Purpureis striatis.* Cat. Hort. Med. Amst. (Commelin 1689).
Dutch: Groot Africaans Sisyrhynchium, met witte Blom, van buijten met purpure Streepen.
Commelin. Hort. Amst. 1:83 t.42. *Sisyrhynchium Aethiopicum majus lati-folium floribus albis, hexapetalis, lineis purpureis striatis.*
Dutch: Groot breed-bladerig morelands sisyrichium met witte ses-bladerige en purpur-gestreepte bloemen.
Artist. Jan Moninckx (1686-1690).
Citations. *Ixia* species – Huth.
Taxonomic notes. Dr P.Goldblatt provided the identification of this plant. *Ixia bulbifera* L. 1762:51 is the basionym.
Distribution. South Africa: S.W.Cape.
Introduction ante 1689. Chittenden 1951:1991 gives 1758 as year of introduction. Commelin does not give any information on the origin of his plant but he notes that the Hottentots like to eat the 'roots'.
Specimens seen. Coppejans 1188 (WAG); Pappe s.n. (SAM 48515); Thunberg s.n., 'culta in Horto Amstelodamensis' (UPS-Thunb. 923).

LABIATAE

Ballota africana (L.) Benth., Lab. Gen. et Sp.: 594 (1834)
Atlas. 4 t.40. *Pseudodictamnus Africanus foliis subrotundis subtus incanis.*
Commelin. Hort. Amst. 2:179 t.90. Idem, syn. *Dictamnus flore rubro. Pseudodictamnus Africanus, hederae terrestris folio* Oldenlandii (Tournefort 1700:188).
Artist. Jan Moninckx (1686-1700).
Citations. *Marrubium africanum* L. 1753:583, [Hort. Cliff.:311.2, V.Royen:314.2, ms LINN, Boerhaave 1719,1:173], Burm.f. 1768 P.F.C.:16, Willd. 1800:112, Ait.f. 1811:404, Sweet 1818:133, Loudon 1830:237. *Ballota africana* (L.) Benth. 1834:549 – Huth.
Taxonomic notes. The nomen specificum legitimum for *Marrubium africanum* in Sp. Pl. is adopted from Hort. Cliff.:311.2. The corresponding specimen in H.S.C. is proposed here as the lectotype.
Distribution. South Africa: Cape Province and Namaqualand to Namibia (Patzak 1959:62-3).
Introduction ante 1701. Seeds were received from the Cape, no year is given.
Specimens seen. H.S.C. 311.2, lectotype (BM); LINN 738.6, paratype; Baylis 8034 (WAG); Goldblatt 2332 (WAG); V.d.Merwe 201 (STE).

Bystropogon canariense (L.) L'Héritier, Sertum Anglicum:20 (1789)
Atlas. 4 t.13. *Heliotropium canariense arborescens scorodoniae folio.*
Sideritis canariensis altera Vulgo.
Commelin. Hort. Amst. 2:139 t.65. Idem, but *'folo'*, in error.
Artist. Jan Moninckx (1686-1699).
Citations. *Mentha canariensis* L., 1753:578, [Hort. Cliff.:307.8, ms LINN, Boerhaave 1719,1:190.2]. *Heliotropium canariense* (L.) Miller 1768. *Bystropogon canariense* (L.) L'Hérit. 1789:20, Willd. 1800:73, Sweet 1818:131, Loudon 1830:235, Benth. in DC. 1844:184, Webb & Berth. 1844,3:65, Huth.
Taxonomic notes. The nomen specificum legitimum for *Mentha canariensis* is taken unchanged from Hortus Cliffortianus. The specimen in H.S.C. 307.8 should therefore be the lectotype, as proposed by Tucker, Harley & Fairbrothers (1980).
Distribution. Canary Islands: Tenerife, Gran Canaria, Gomera, Palma, Hierro.
Introduction ante 1700. Commelin received the plant from Gerbrand Pancras, no year is given. Commelin states that the plant was known in the Dutch gardens. I am not aware of a reference to it in Kiggelaer, Breyne or Hermann.
Plukenet illustrated the plant in 1692 t.307 f.2.
Specimens seen. *'canariensis'* LINN 730.23; H.S.C. 307.8, lectotype (BM); Bramwell 1970 (Tafira); Dinn 267 (WAG); Bourgeau 1472 (WAG).

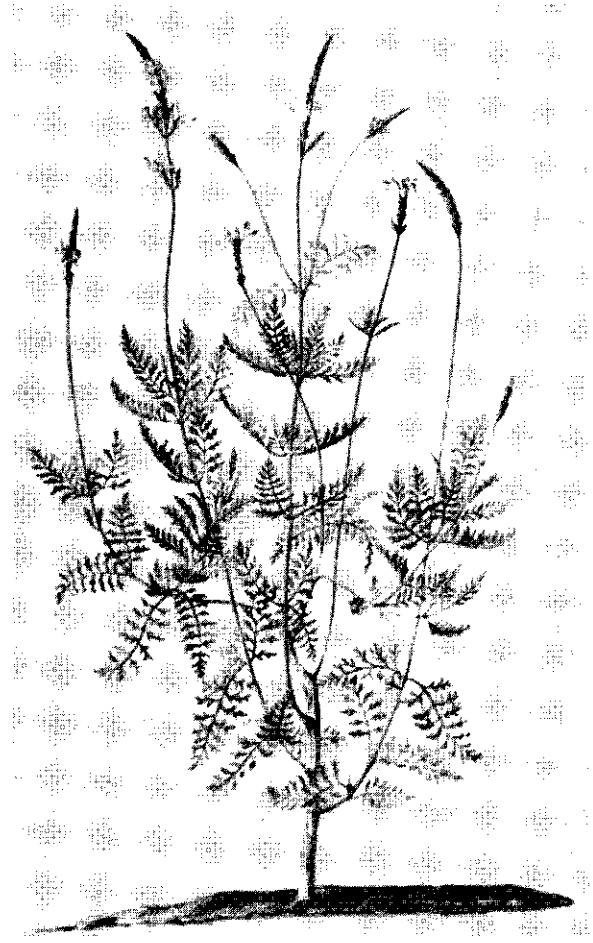
Cedronella canariensis. Atlas 3 t.39

Cedronella canariensis (L.) Webb & Berth., Phyt. Can. 3:87 (1845)
Atlas. 3 t.39. *Cedronella canariensis viscosa, foliis plerumque ex eadem pediculo ternis.*
Moldavica Americana trifolia Tournefortii in Epistola ad Sherardum (1703:18).
Commelin. Hort. Amst. 2:81 t.41. Idem, Tournefort's name as a probable synonym in the text.
Artist. Jan Moninckx (1686-1700).
Citations. *Dracocephalum canariense* L., 1753:594, [Hort. Cliff.:308.5, Mat. Med. n.293, Boerhaave 1719,1: 168.3], Willd. 1800:150, Ait.f. 1811:418, Sweet 1818: 134, Loudon 1830:239, Salm-Dyck 1834:95. *Cedronella canariensis* (L.) Webb & Berth. 1845:87, Benth. in DC. 1848:406, Huth.
Taxonomic notes. As Linnaeus' concept of this species did not change from Hortus Cliffortianus, H.S.C. 308.5 is proposed as lectotype.
Cedronella triphylla Moench, Meth. Pl.:412. 1794 is a superfluous name for *Dracocephalum canariense* L.
Distribution. Canary Islands: Tenerife, Gomera, Palma, Gran Canaria.
Introduction ante 1692. Plukenet had the species in 1692 t.325 f.2, Morison in 1699 f.11 t.11.

Commelin had the plant 'for some years, brought from Canaria to Europe'.
Specimens seen. H.S.C. 308.5, lectotype (BM); '*canariense* 2 HU' LINN 746.3; Dinn 225 (WAG); Bourgeau 1492 (WAG); Alonso s.n. (Tafira); Wijnands 816 (WAG).

Dracocephalum thymiflorum L., Sp. Pl.:596 (1753)
Atlas. 6 t.45. *Moldavica Orientalis minima ocymi folio, flore purpurascente* Tournef: Coroll: inst: 11 (Tournefort 1703:11).
Commelin. Rar. & Exot.:29 t.29. Idem.
Artist. Maria Moninckx (1703-1705).
Citations. *Dracocephalum thymiflorum* L. 1753 – not cited in the protologue – 1763:831 '?', [ms LINN], Huth.
Taxonomic notes. *D.thymiflorum ('thymiflora')* is based primarily on the entry in Hort. Ups.:167. Other elements are V.Royen:537 and Amman 1739:46.
No specimen annotated 'HU' is available in LINN, only a specimen collected by Amman. As Amman is cited in Sp. Pl. and in Hort. Ups. (p.44, another entry), I consider LINN 746.17 as the type. It is annotated '11 *thymiflorum // Moldavica fl. minimis* Amman'. Also LINN 746.18 is available, but this sheet is neither annotated with the epithet, nor with the number of the species. On the verso, however, Amman and Siegesbeck are cited, the latter was cited also by Van Royen.
No specimen was found in herb. Tournefort-Coroll.(P).
Distribution. E.Europe, W.Asia.
Introduction ca.1703. The plant was raised from seed sent by Tournefort and Gundelsheimer about 1703.
Specimens seen. LINN 746.17, lectotype; LINN 746.18; Prescott s.n. 'Siberia' (E); Schmid 6001 (E); Wendelbo 1092 (E).

Lallemantia canescens (L.) Fisch. & Meyer, Index Sem. Hort. Bot. Petrop. 6:52 (1840)
Atlas. 6 t.44. *Moldavica orientalis, betonicae folio, flore magno violaceo.* Tourn: Coroll: (Tournefort 1703:11).
Commelin. Rar. & Exot. 28 t.28. Idem.
Artist. Maria Moninckx (1703-1705).
Citations. *Dracocephalum canescens* L. 1753:595 [Hort. Cliff.:308.3, Hort. Ups.:166.4, ms LINN]. *Lallemantia canescens* (L.) Fisch. & Mey. 1840:52 – Huth.
Taxonomic notes. *Dracocephalum canescens* L. is based primarily on the entry in Hort. Ups.:166.4 which is marked with an asterisk in Sp. Pl. No specimen marked 'HU' is available in LINN, but LINN 746.14 '8 *canescens*' matches the diagnosis; it was proposed as the lectotype by Edmondson in Davis 1982:291. Commelin's plate is matched also by H.S.C. 308.4, not by H.S.C. 308.3 for which it is cited but this specimen belongs to *Lallemantia peltata* (L.) Fisch. & Mey.
Distribution. Transcaucasia, Iran.

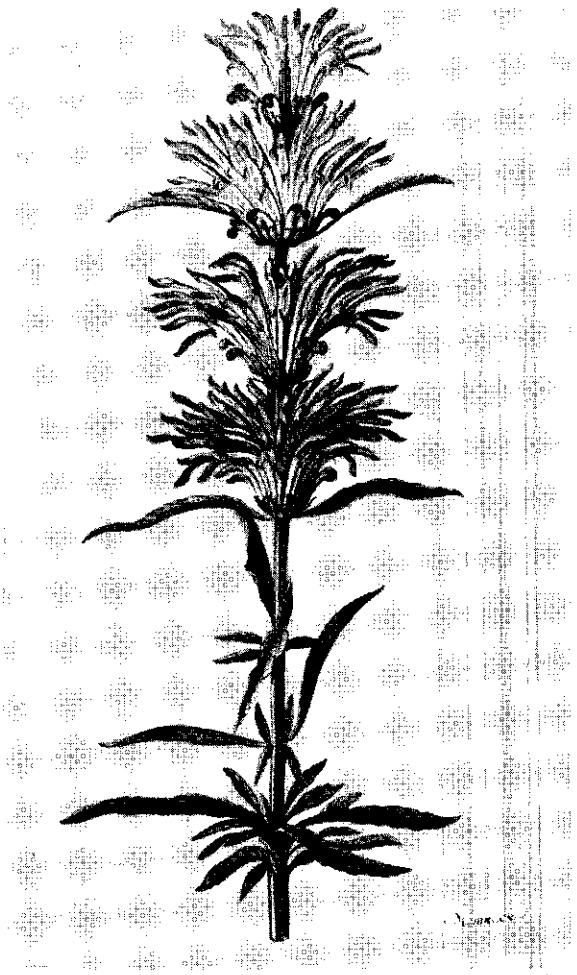


Lavandula canariensis. Atlas 6 t.43

Introduction 1703. Seeds were received from Tournefort and Gundelsheimer.
Specimens seen. H.S.C. 308.4 (BM); LINN 746.14, lectotype; herb.Tournefort Coroll. no.21, p.11 (P); Wijnands 382, culta (WAG); Davis 46488 and 46746 (E); Davis & Hedge 31918 (E).

Lavandula canariensis Miller, Dict. Gard. ed.8 no.4 (1768)
Atlas. 6 t.43. *Lavandula folio longiore tenuis & elegantius dissecta.* Tournef. Coroll. Inst. (sic, recte Tournefort 1700:198).
Commelin. Rar. & Exot.:27 t.27. Idem.
Artist. Jan Moninckx (1703-1705).
Citations. *Lavandula multifida* L. 1764:800, [Hort. Cliff.:303.2, Hort. Ups.:162.2, ms LINN, Boerhaave 1719,1:153], Burm.f. 1768 Fl. Ind.:126, Huth. *Lavandula abrotanoides* Lam. 1792:429, Willd. 1800: 62, Sweet 1818:131, Loudon 1830:234, Webb & Berth. 1844:59.
Taxonomic notes. *Lavandula abrotanoides* Lam., the

name commonly used for this species, is a superfluous name for *L.canariensis* Mill. I did not investigate the typification of Miller's name, Commelin's plate not being involved.
Lavandula multifida L. is a species from the Western Mediterranean region. Its type probably is H.S.C. 303.2. Commelin listed this species among the ones received from Tournefort and Gundelsheimer. His use of the geographic term *'cariensis'* also suggests a provenance from Turkey. *Lavandula cariensis* Boiss. is a species from Greece and Turkey, at present named *L.stoechas* L. ssp. *cariensis* (Boiss.) Rozeira. In Turkey and Persia a *Lavandula* like Commelin's does not occur. The plate matches *L.canariensis* well and has always been identified as the Canarian species. Commelin may have confused the source of this plant, the confusion, perhaps, having been caused by some oversight made when lavenders were cultivated in Amsterdam or in Paris, However, Tournefort's specimen 1368 (P) probably represents *L. canariensis*, and Commelin cited Tournefort's Corollarium in error.
Distribution. Canary Islands: Tenerife, Gomera, Hierro, Palma, Gran Canaria.
Introduction. Commelin must have had the plant for some time as he remarked that in a few years it produced ripe fruits.
Miller wrote that the plant was raised from seed for the first time in the Fulham garden of the bishop (Compton) of London, Morison 1680:352 probably is the first reference to *L.canariensis*, fide Webb & Berthelot (l.c.). Plukenet 1692 t.303 f.5 shows another picture of this species.
Specimens seen. *'multifida'* LINN 727.2; '2' LINN 727.3; H.S.C. 303.2 (BM); Jardin du Roi P-Lam 512 (microfiche); Asplund 504 (S); Dinn 4 (WAG); Kunkel 12268 (WAG); Ortega s.n. (Tafira); Tournefort 1368 (P); Wijnands 595, culta (WAG).



Leonotis leonurus. Atlas 2 t.30

Leonotis leonurus (L.) R.Br. in Ait.f., Hort. Kew. ed.2,3:410 (1811) [Pl.9]
Atlas. 2 t.30. *Cardiaca Africana Perennis folii sideritis, Floribus longissimis Phoeniceis villosis.* Herm: Cat: 215 (Hermann 1687:115).
Leonurus Capitis Bonae Spei. Breijn: Centur: 171 (Breyne 1678:171 t.86).
Sideritis Cannabina Aethiopica frutescens, Phoeniceo Flore maximo villoso. Breijn: Prod: 1.47 (Breyne 1680:47).
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).
Taxonomic notes. Breyne 1678 is cited in the protologue of the basionym *Phlomis leonurus* L. 1753:587. Breyne and Hermann are cited in Hort. Cliff.:312, the precursor of *Phlomis leonurus* L.
A new nomen specificum legitimum is provided in Sp. Pl., LINN 740.19 *'Leonurus* 12' is the type.
Distribution. South Africa.
Introduction 1663. Beverningk was the first to grow this species in 1663 (Breyne 1678). The first illustration of this species was published in Thomae Bartolini Acta Medica & Philosophica Hafniensia anno 1673,2:37. It was based on one of the 22 plants collected by Paul Hermann at the Cape and brough to Copenhagen by the Danish surgeon Hieremias Stolle.
Specimens seen. LINN 740.19; Strey 11269 (WAG).

Monarda didyma L., Sp. Pl.:22 (1753)
Atlas. 9 t.5. No name.
Commelin. Not published by Commelin.
Artist. J.M.Cok (1749).
Taxonomic note. *Monarda didyma* has a new nomen specificum legitimum in Sp. Pl. The specimen LINN 40.3 is the type.
Distribution. C. and O.N.America.
Introduction. Boom 1951:264 gave 1737 as year of introduction. Linnaeus cited his Hort. Cliff. (1738), Colden (1743) and Buettner (1750).

Monarda didyma. Atlas 9 t.5

Origanum sipyleum. Atlas 2 t.32

Specimens seen. LINN 40.3 '*didyma* 2', lectotype; Bijhouwer 59 (WAG); Carr 20228 (S).
The plants cultivated at present as *M.didyma* are mainly hybrids.

Origanum sipyleum L., Sp. Pl.:589 (1753)

Atlas. 2 t.32. *Dictamnus Montis Sipyli Origani foliis.*
Herm: Flor: 79 (Hermann 1690:53).
Origanum Montis Sipyli Herm. Catal:463 (Hermann 1687:462 t.463).
Dutch: Orego van den Bergh Sipijlus.
Commelin. Not published by Commelin.
Artist. Alida Withoos (1694).
Taxonomic notes. Hermann's *Origanum Montis sipyleum,* 1687:462 t.463 is cited in the protologue of *Origanum sipyleum* L. This name is typified by '3 *sipyleum*' LINN 743.3 (Ietswaart 1980:55). Withoos' water-colour matches the specimens seen much better than Hermann's engraving.
The identification was confirmed by Dr J.H.Ietswaart.
Distribution. Turkey and Samos (Ietswaart 1980:60, fig.9).
Introduction ? 1682. G.Wheler (1650-1723) collected the species in Phrygia on mount Sipyle (Wheler, A journey into Greece 1682:250, see Heller & Stearn 1959: 59). Hermann had the plant in 1687, Breyne saw it in 1688 (Breyne 1689:41). Agnes Block had a water-colour made of a specimen in her garden by Pieter Withoos (see V.d.Graft 1943:136).
Plukenet mentions it in the Almagestum of 1696:131; Ray in 1686:540 and 1688:1920. Morison (cited by Linnaeus) referred to it in 1699. Hermann's name change was probably influenced by Ray 1688:1920.
Specimens seen. Heldreich s.n. 1845 (WAG); Pinard s.n. 1843 (WAG); Balansa 328, on mount Sipyle!, (WAG); '*Origanum* 3 *sipyleum*', lectotype (LINN 743.3); herb. Alstroemer s.n. (S-Linn).

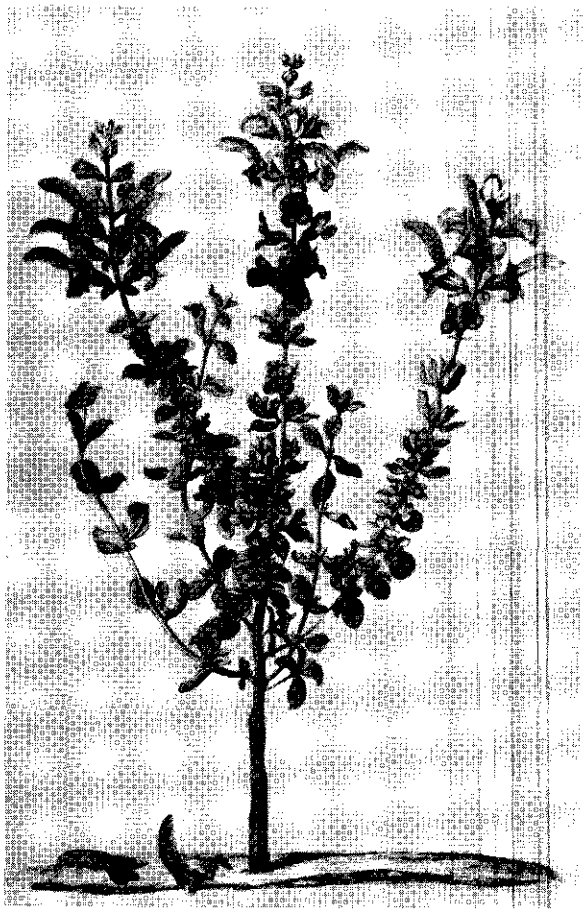
Rosmarinus officinalis L., Sp. Pl.:23 (1753)

Atlas. 8 t.11. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. Mill in Davis 1982:76 designated LINN 41.1 as the lectotype of *Rosmarinus officinalis* L. However, this specimen was probably added to the herbarium after 1753.
Distribution. Mediterranean region.
Introduction. This species has been known for a long time in cultivation, so that no first date of introduction

can be fixed. It is a little surprising to find such a well known species drawn in the atlas. The species was grown in the Hortus as a medicinal herb.(Commelin 1724:49).

Salvia africana L., Sp. Pl. ed.2:38 (1762)
Atlas. 4 t.41. *Salvia africana frutescens scorodoniae foliis, Flore Violaceo.*
Commelin. Hort. Amst. 2:181 t.91. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Salvia afr[icana] coerulea* L., 1753:26, [Hort. Cliff.:13.13, V.Royen:308.6, ms LINN, Boerhaave 1719,1:167, Tilli 1723:151].
Salvia africana L. 1762:38, Burm.f. 1768 P.F.C. unnumbered first page, Miller 1768, Willd. 1797:144, Vahl 1804:230, Lam. 1805:626, Ait.f. 1810:62, Sweet 1818:7, Loudon 1830:11, Salm-Dyck 1834:242, Benth. in DC. 1848:274, Huth.
Taxonomic notes. *Salvia africana coerulea* L. is invalid as it is a trinomen.
Salvia africana L. is the correct name. The type is H.S.C. 13.13, designated by Hedge 1974:46.
Distribution. South Africa: Cape Province including the Cape Peninsula, see Hedge 1974:43 for a map.
Introduction ante 1695. Commelin gives no information on the source of his plant. It was grown in the Hortus for some years already. The habitat is given as 'clay soils at the Cape'.
Specimens seen. H.S.C. 13.13, lectotype (BM); Bayliss 630 (WAG); Bos 13,294,1366 (WAG); Van Royen s.n., with Commelin's phrase-name (L).

Salvia aurea L., Sp. Pl. ed.2:38 (1762)
Atlas. 4 t.42. *Salvia Africana fruticans folio subrotundo, glauco, Flore magno aureo.*
Commelin. Hort. Amst. 2:183 t.92. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Salvia Afr[icana] lutea* L., 1753:26, [Hort. Cliff.:13.14, V.Royen:308.7, ms LINN, Boerhaave 1719,1:167, Tilli 1723:151].
Salvia aurea L. 1762:38, Burm.f. 1768 P.F.C. unnumbered first page, Miller 1768, Willd. 1797:145, Vahl 1804:231, Lam. 1805:626, Benth. in DC. 1848:273, Huth.
Taxonomic notes. *Salvia africana lutea* L. (1753) is invalid as it is a trinomen. *Salvia aurea* L. (1762) is the correct name. The type is LINN 42.38, designated by Hedge 1974:42.
Distribution. South Africa: Cape including the Cape Peninsula, see Hedge 1974:43 for a map.
Introduction ante 1698. Commelin gives no information on the source of his plant. The habitat is given as at the Cape.
Specimens seen. LINN 42.38, lectotype; Goldblatt 2892 (WAG); Boucher 463 (WAG); Van Royen s.n., with Commelin's phrase-name (L); Ruysch s.n. in herb. Van Royen (L); Lam and Meeuse s.n. (L); Burchell 5556 (L); Lütjeharms 6409 (L).



Salvia aurea. Atlas 4 t.42

Scutellaria orientalis L., Sp. Pl.:598 (1753)
Atlas. 6 t.46. *Cassida orientalis, folio chamaedryos, flore luteo* (Tournefort 1703:11).
Commelin. Rar. & Exot.:30 t.30. Idem.
Artist. Jan Moninckx (1703-1705).
Citations. *Scutellaria orientalis* L. 1753:598, [Hort. Cliff.:316.1, Hort. Ups.:173.3, ms LINN], Miller 1768 no.3, Willd. 1800:171, Huth.
Commelin copied Tournefort's phrase-name of 1703: 11; probably Tournefort sent the seeds from which the plants were grown under this name.
Taxonomic notes. The nomen specificum legitimum for *S.orientalis* in Sp. Pl. is taken from Hort. Ups. The specimen in LINN 751.1 '1 *orientale*' is not annotated 'HU'.
It was designated as the lectotype by Edmondson in Davis 1982:91.
Distribution. S.W.Asia.
Introduction ca.1703. Commelin received seeds from

Tournefort and Gundelsheimer around 1703, cf. Tournefort 1718,2:129.
Specimens seen. H.S.C. 316.1 (BM); LINN 751.1, lectotype; herb. Dahl a Linn.p. (S-Linn); Hennipman c.s. 1016 and 1560 (WAG).

Sideritis canariensis L., Sp. Pl.:574 (1753)
Atlas. 4 t.50. *Stachys Canariensis frutescens Verbasci foliis* Tournefortii (Tournefort 1700:186).
Salvia sylvestris amplissimis verbascifoliis, graveolens, flore albo parvo canariensis Pluck. Almag. Bot. 329 (Plukenet 1696:329).
Stachys amplissimis verbascifoliis, floribus albis parvis, non galeatis, spica Betonicae ex Insula Canaria id. 356 t.322 f.4 (Plukenet 1694 t.322 f.4, 1696:356).
Commelin. Hort. Amst. 2:197 t.99. Idem, Tournefort's name as the caption, Plukenet's in the text.
Artist. Jan Moninckx (1686-1700).
Citations. *Sideritis canariensis* L. 1753:574, [Hort. Cliff.:310.5, ms LINN, Boerhaave 1719,1:154, Fabricius 1763:9].
Sideritis cretica L. 1753:574 – [ms LINN '*cretica* SP. PL. ed.2'].
Sideritis candicans Aiton 1789:289 – Willd. 1800:63, Ait.f. 1811:384, Sweet 1818:131, Loudon 1830:234, Salm-Dyck 1834:256, Huth.
Leucophae candicans (Ait.) Webb & Berth. 1845:100.
Sideritis candida Salisb. 1796:79 (nom. superfl.).
Taxonomic notes. Both Linnean species have a new nomen legitimum specificum in Sp. Pl. LINN 729.1 '*canariensis* 2' and LINN 729.2 '*cretica* 1 HU' are the types of these names as designated by Mendoza Heuer 1974, who showed *S.cretica* to be the correct name of the species, commonly known as *S.candicans*. *S.candicans* Ait. is a species from Madeira.
Distribution. Canary Islands: Tenerife, Hierro, Palma.
Introduction. Commelin does not specify the source of his plant.
Specimens seen. LINN 729.1 '2 *canariensis*'; Asplund 929 (S).

Teucrium orientale L., Sp. Pl.:562 (1753)
Atlas. 6 t.41. *Teucrium orientale angustifolium laciniatum, flore magno subcoeruleo* Tournef: Coroll: Inst: (Tournefort 1703:14).
Commelin. Rar. & Exot. 25 t.25. Idem.
Artist. Jan Moninckx (1703-1705).
Citations. *Teucrium orientale* L. 1753:562 – not cited in the protologue – 1763:786, [ms LINN], Lam. 1788: 697, Willd. 1800:14, Huth.
Taxonomic notes. The diagnosis of *T.orientale* in Sp. Pl. does not differ materially from the phrase in Hort. Cliff. As no specimen is available in LINN, H.S.C. 301 is proposed as lectotype, cf. Ekim in Davis 1982:59.
Distribution. Caucasia, Iran, Syria, Lebanon.
Introduction ca.1703. Commelin received seeds from Tournefort and Gundelsheimer around 1703.

Wiedemannia multifida. Atlas 6 t.42

Specimens seen. H.S.C. 301, lectotype (BM); herb. Tournefort Coroll. no.13 p.14 (P); Barclay 840 (E); Bornmüller 14554 (E); Sintenis anno 1894 no.6285 (E).

Wiedemannia multifida (L.) Benth. in DC. Prodr. 12:503 (1848)
Atlas. 6 t.42. *Lamium orientale, foliis eleganter laciniatis.* Tournef: Coroll: instit: (Tournefort 1703:11).
Commelin. Rar. & Exot.:26 t.26. Idem.
Artist. Maria Moninckx (1703-1705).
Citations. *Lamium multifidum* L. 1753:579, [Hort. Cliff.:315.4, ms LINN], Lam. 1792:412, Willd. 1800: 91, Ait.f. 1811:395, Sweet 1818:132, Loudon 1830: 236.
Wiedemannia multifida (L.) Benth. 1848:503 – Huth.
Taxonomic notes. The nomen specificum legitimum for *Lamium multifidum* is taken from Hort. Cliff. There is a fragment present in the Clifford herbarium that represents the species, I propose it as the lectotype. No specimen is available in the Linnean herbarium. Two specimens are found in P-Tournefort.

Cinnamomum camphora. Atlas 2 t.25

Mill (in Davis 1982:149) designated a Tournefort specimen as the holotype. Since there is a Clifford specimen and since it is not at all certain that Linnaeus studied Tournefort's specimen, Mill's typification must be rejected.
Distribution. S.W.Asia.
Introduction ante 1703. Seeds were received from Tournefort and Gundelsheimer about 1703. At present the species is not in cultivation.
Specimens seen. H.S.C. 315.4, lectotype (BM); Balls 1481 (BM, E); Bourgeau 231 (BM, E); Sintenis 5832 (L) and 5894 (BM, S); Bornmüller 14536 (S); herb. Tournefort Coroll. no.15 (P); Davis & Hedge 29336 (E).

LAURACEAE

Cinnamomum camphora (L.) J.S.Presl in Berchtold & J.S.Presl, Přiroz. Rostlin. 2:36, 47-56 t.8 (1825)

Atlas. 2 t.25. *Arbor Camphorifera Japonica, foliis Laurinis, Fructu parvo, globoso, Calyce brevissimo.*
Breijn: Prod: II.16 (Breyne 1689:16 t.16 f.2).
Dutch: Japansche Campher-Boom, met Laurierige bladeren, kleene ronde Vruchten, en seer korte Kelckjens.
Commelin. Hort. Amst. 1:185 t.95. Idem, with some orthographic variants.
Artist. Jan Moninckx (1687-1690).
Citations. *Laurus camphora* L. 1753:369 – not cited in the protologue – Linn. 1771:377 [Hort. Cliff.:154.5 'bona', ms LINN, Boerhaave 1719,2:261], Burm.f. 1768 Fl. Ind.:92, Lam. 1792:446, Willd. 1799:478. *Cinnamomum camphora* (L.) J.S.Presl. 1825 – Huth.
Taxonomic notes. In the new nomen specificum legitimum for *Laurus camphora* in Sp. Pl., Linnaeus stipulated that the three nerves in the leaves are united 'supra basin'. The specimen LINN 518,7 '3 *camphora*' clearly shows the situation, it probably is the type. Another specimen is preserved in the Clifford Herbarium on sheet 154.5. Commelin compared his true *Arbor Camphorifera* with *Cassia lignea,* i.e. *Cinnamomum cassia* Nees ex Bl.
Note on the plate. A flowering branch is added in the plate, it was sent from Indonesia.
Distribution. Japan.
Introduction ante 1680. Commelin received his plant from Andreas Cleyer 'Med. Doct. and Council at the Cape of Good Hope' in September 1687. Breyne (1680: 7) reported this species from Beverningk's garden.
Specimens seen. Baagøe c.s. 119 (WAG); Hohenacker 668 (WAG); Wijnands 960A from an old tree at W.A. van der Stel's estate Vergelegen (WAG).

Lindera benzoin (L.) Blume, Mus. Bot. Lugd.-Bat. 1 (21):324 (1851)

Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:189 t.97. *Arbor Virginiana, citriae vel limoniae folio, benzoinum fundens.*
Arbor Benzoinifera Breyn. Prod. 2 (Breyne 1689:16).
Dutch: Benzoin Boom.
Citations. *Laurus benzoin* L. 1753:370, [Hort. Cliff.: 154.2, ms LINN '*benzoe*', Boerhaave 1719,2:259, Gronovius 1762:63], Miller 1768, Lam. 1792:453, Willd. 1799:485, Ait.f. 1811:429, Loudon 1830:161, Salm-Dyck 1834:143, Kraus 1893:120.
Lindera benzoin (L.) Blume 1851:324 – Meissn. in DC. 1864:244, Huth.
Taxonomic notes. *Laurus benzoin* has a nomen specificum legitimum in Sp. Pl. that does not differ from the name as used in Hort. Cliff., Gronovius and Van Royen. Specimens are present in H.S.C. 154.2, Herb. Gronovius (BM) two sheets, and LINN 518.17 '9 *benzoe*' ex herb. Cliff. All these specimens clearly show veins in the leaves in contrast to Linnaeus' '*foliis enerviis*'. I cannot explain these words in Linnaeus' diagnosis. Fernald (1945:141) designated the specimen in Clifford herbarium as the lectotype. All specimens have

axillary buds, not shown in Commelin's plate.
Distribution. N.America, from Maine and Ontario south to Florida and Texas.
Introduction 1683. Commelin received his plant from Bishop Henry Compton of London before 1689. Breyne saw the plant in Amsterdam in 1688. Plukenet showed the species in his t.139 f.3 & 4 (1691). Wein (1931) gave 1683 as year of introduction.
Specimens seen. Valckenier Suringar s.n., culta (WAG); Springer s.n., culta (WAG).

LILIACEAE

Aloe ? africana Mill., Dict. Gard. ed.8 no.4 (1768)
Atlas. 6 t.7. *Aloe Africana caulescens, foliis minus glaucis caulem amplectantibus, dorsi parte suprema spinosa* (Oldenland no.15, but *'suprema'* instead of *'superiore'*).
Commelin. Prael. Bot.:69 t.18. Idem.
Artist. Maria Moninckx (1700-1702).
Citations. *Aloe perfoliata* L. β, 1753:320, [Hort. Cliff.: 131.3 β, ms LINN, Boerhaave 1719,2:130 no.14, Tilli 1723:7, Burm. 1737 Cat. Afr.:24], Lam. 1783:88, Willd. 1799:185.
Aloe africana Mill. 1768 (cited without *'caulem amplectantibus'* and as '68'), Haw. 1804:21 '?', Berger 1908: 306, Reynolds 1950:457.
Aloe salm-dyckiana Schult. & Schult.f. in Roem. & Schult., Syst. Veg. 1829,7:710 – Salm-Dyck 1834:330.
Aloe arborescens Mill. 1768 – DeCandolle 1800:7 t.38.
Pachidendron africanum (Mill.) Haw. 1821:36 '?'.
Taxonomic notes. Linnaeus based his var. β on Commelin only. Commelin's plate would be the type if Linnaeus had published a name, but he did not.
Miller's species is described from a flowering specimen, so Commelin's plate cannot be the type of *Aloe africana* Mill.
Aloe salm-dyckiana Schult. & Schult.f. is interpreted by Reynolds (1950:413, 485) as a hybrid of *A.arborescens* Mill. x *ferox* Mill.
Salm-Dyck, however, thought *A.salm-dyckiana* to be identical with Commelin's plate, that differs only slightly in the spiny leaf-edges. Salm-Dyck would have preferred the name *Aloe commelini* for this plant but notes that this name was already used by Willdenow 1811 for a species not known to Commelin. *A.commelyni* Willd. (Ges. Natur Fr. Berl. Mag. 5:882) is a later synonym of *Aloe mitriformis* Mill. (Dict. Gard. ed.8 no.1. 1768) based on *Aloe Africana mitraeformis spinosa* Dillen (1732:12 f.19 t.17, see Reynolds 1950: 374).
Stearn (1938:42) considers *A.salm-dyckiana* a synonym of *Pachidendron principis* Haw. 1821:37 i.e. *Aloe* x *principis* (Haw.) Stearn. Commelin's plate is not diagnostic for *A.africana*, it represents a young sterile plant. I accept it tentatively as *Aloe africana* Mill. on the authority of Reynolds (1950:457), who is not too sure either. The introduction of this E.Cape species in 1702 is not very likely.
Distribution. South Africa: Cape Province, east of Humansdorp.
Introduction ante 1702. Commelin's plate is the first known. The drawing was made before 1702. W.A.van der Stel sent the plants from the Cape.

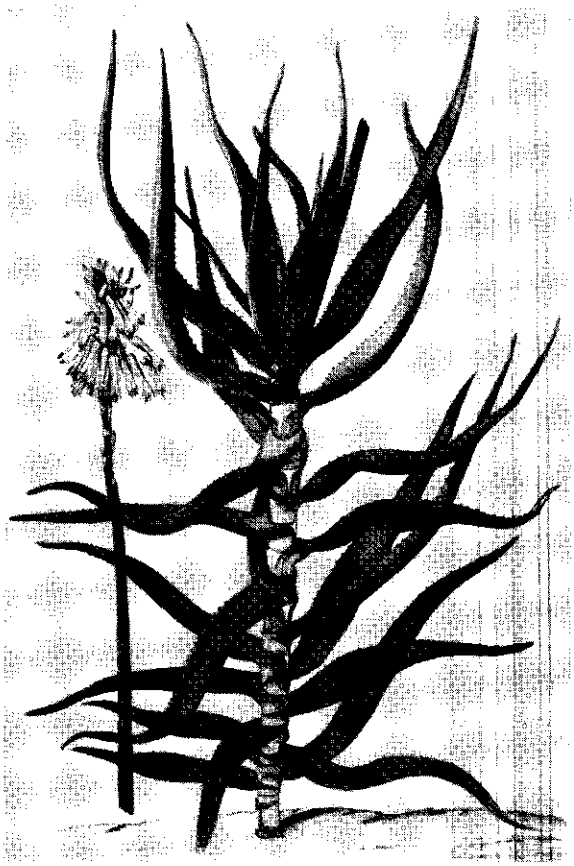
Aloe arborescens Mill., Dict. Gard. ed.8 no.3 (1768)
Atlas. 3 t.13. *Aloe Africana caulescens, foliis glaucis caulem amplectantibus* (Oldenland no.12).
Commelin. Hort. Amst. 2:27 t.14. Idem.
Artist. Jan Moninckx (1700).
Citations. *Aloe perfoliata* L. η, 1753:320, [Hort. Cliff.: 131.3 ϑ, ms LINN, Tilli 1723:7, Boerhaave 1719,2: 130.21].
Aloe fruticosa Lam., Encycl. 1783,1(1):87.6.
Aloe perfoliata L. ξ Willd. 1799:186.
Aloe africana Mill. 1768 – Haw. 1804:21 '?', Huth '?'.
Pachidendron africanum (Mill.) Haw. 1821:36.
Aloe arborescens Mill. 1768, DC. 1800:7 t.38, Haw. 1821:38, Reynolds 1950:407, with reproduction of the plate on p.408.
Taxonomic notes. *Aloe perfoliata* η of Linnaeus is based on Commelin's plate.
Miller cited the plate for *Aloe arborescens*, but as Miller refers to the flowers, the plate cannot be the type. *Aloe fruticosa* Lam. is a superfluous name for *A.arborescens*.
Distribution. South Africa, Zimbabwe.
Introduction. Commelin's plate is the first record in cultivation of the species. His plant was grown from seed, received from the Cape in 1698. The species is probably represented in the Codex of the Duchess of Beaufort 1 t.7.

Aloe brevifolia Miller, Gard. Dict. ed.8 no.8 in corrigenda (1768)
Atlas. 6 t.10. *Aloe Africana caulescens, foliis glaucis brevissimis, foliorum summitate interna & externa nonnihil spinosa* (Oldenland no.19).
Commelin. Prael. Bot.: 73 t.22. Idem.
Artist. Maria Moninckx (1702).
Citations. *Aloe perfoliata* L. δ 1753:320, [Hort. Cliff.: 131.3 δ, ms LINN, Plukenet 1705:9, Boerhaave 1719,2: 130.17, Tilli 1723:7, Burman 1737:25.19], Willd. 1799: 183.
Aloe perfoliata L. γ Lam. 1783:88.
Aloe prolifera Haw. 1804:16, Huth.
Aloe prolifera Haw. var. *major* Salm-Dyck 1817:23, 56 – Haw. 1819:45.
Aloe brevifolia Mill. 1768 no.8 ('t.71'), DC. 1801:14, Haw. 1821:202, Baker 1880:160, Baker 1896:310, Reynolds 1950:184 (with reproduction of Plate 22).
Aloe brevifolia Mill. var. *postgenita* (Roem. & Schult.) Baker 1880:160 – Berger 1908:186.
Taxonomic notes. Commelin's Plate 22 is the basis of

Linnaeus' *Aloe perfoliata* δ, a taxon named *Aloe brevifolia* by Miller. Commelin's plate could serve as the lectotype of the latter name.
Distribution. South Africa: Cape - Bredasdorp district.
Introduction. The plant was grown from seed received in 1700 from W.A.van der Stel.

Aloe brevifolia Mill. var. **depressa** (Haw.) Baker, Journ. Linn. Soc. 18:160 (1880)
Atlas. No original water-colour is preserved.
Commelin. Prael. Bot.: 72 t.21, Rar. & Exot.: 45 t.45. *Aloe Africana caulescens, foliis glaucis brevioribus caulem amplectantibus, foliorum parte interna & externa nonnihil spinosa.* (Oldenland no.18).
Citations. *Aloe perfoliata* L. ζ 1753:320, [Hort. Cliff.: 131.3 δ, Hort. Ups.:86.2, ms LINN, Boerhaave 1719,2: 17, Tilli 1723:7, Burman 1737:25.18], Willd. 1799: 186.
Aloe perfoliata L. β Lam. 1783:88.
Aloe glauca Mill. 1768 no.16 as 'Prael. 71'.
Aloe depressa Haw. 1804:16, Huth.
Aloe brevifolia Mill. var. *depressa* (Haw.) Baker 1880: 160, Berger 1908:186, Reynolds 1950:188-189 with reproduction of Plate 45 ('24').
Taxonomic notes. *Aloe perfoliata* L. ζ is based only on Prael. Bot. t.21. *Aloe depressa* Haw. has Commelin's plates as syntypes, I have not investigated the typification of this name.
I accept Commelin's plates for *A.brevifolia* var. *depressa* on the authority of Reynolds. I have never seen a plant of it as etiolated as Commelin's ones.
See also the discussion regarding *Aloe glauca* Miller.
Distribution. South Africa: Cape near Caledon.
Introduction. The plant was grown from seed received in 1700 from W.A.van der Stel.

Aloe commixta Berger in Engler, Pflanzenreich Liliac. Aloin.:260 (1908)
Atlas. 6 t.6. *Aloe Africana caulescens foliis magis glaucis caulem amplectantibus, & in mucronem obtusiorem definentibus* (Oldenland no.14).
Commelin. Prael. Bot.:68 t.17, Rar. & Exot.:44 t.44. Idem.
Artist. Maria Moninckx (1700-1702).
Citations. *Aloe perfoliata* L. α 1753:320, [Hort. Cliff.: 131.3 α, ms LINN, Boerhaave 1719,2:129, Tilli 1723: 7, Burm. 1737:24], Willd. 1799:185.
Aloe dichotoma Masson 1776 – Haw. 1804:21 '?'.
Aloe serra DeCandolle 1801:14 t.80 '?'.
Aloe caesia Salm-Dyck 1817:29, 1834:14, Huth.
Aloe commixta Berger 1908:260 – Reynolds 1950: 359.
Taxonomic notes. Linnaeus based his *A.perfoliata* α on Commelin's plates. This variety disappeared gradually from the literature.
DeCandolle included it in his *A.serra*, a synonym of *A.*



Aloe commixta. Atlas 6 t.6

brevifolia Mill. var. *depressa* (Haw.) Bak., see Reynolds (1950:188).
Reynolds identified Commelin's plates with *A.commixta* Berger, thereby giving substance to *A.perfoliata* L. α. *Aloe caesia* Salm-Dyck is interpreted as *A.arborescens* x *A.ferox*. If this is accepted, *Aloe caesia* antedates *A.* x *principis* (Haw.) Stearn as the correct name for this hybrid, as *Pachidendron principis* Haw. dates from 1821.
Distribution. South Africa: Cape Peninsula.
Introduction 1700. Commelin provides the first description of this species. He received it in 1700 from the Governor of the Cape Colony, Willem Adriaan van der Stel.
Specimen seen. Pillans s.n. (SAM 22648).

Aloe ferox Mill., Dict. Gard. ed.8 no.22 (1768)
Atlas. 6 t.8. *Aloe Africana Caulescens foliis glaucis caulem amplectantibus latioribus & undiquaque spinosis* (Oldenland no.16).
Commelin. Prael. Bot.:70 t.19. Idem.
Artist. Maria Moninckx (1702).
Citations. *Aloe perfoliata* L. γ, 1753:320, [Hort. Cliff.: 131.3 γ, ms LINN, Boerhaave 1719,2:130.15, Tilli

1723:7, Burm. 1737 Cat. Afr.:25], Willd. 1799:185. *Aloe ferox* Mill. 1768 – Lam. 1783:87, De Candolle 1800:6 t.32, Haw. 1804:22, Baker 1880:179, Huth, Berger 1908:312, Reynolds 1950:462 (with reproduction of plate on p.460).
Taxonomic notes. *Aloe perfoliata* L. γ is based exclusively on Commelin's plate.
Miller does not cite it, however, so it cannot be the type of the name *Aloe ferox*, but throughout the literature the plate has been accepted for this latter species. The young plant depicted is very much like young plants of *A.ferox* in collections. We are, however, not informed about the inflorescence since there is no flowering plant in Rar. & Exot., as is the case with most Aloes in the Praeludia.
Distribution. South Africa: Cape to the Transkei and Natal.
Introduction 1700. No reference to the species is made before Commelin's plate. His plant was raised from seed sent in 1700 from the Cape by Willem Adriaan van der Stel. This species is probably represented in the Codex of the Duchess of Beaufort 1 t.34 f.2 & 3.

Aloe ferox Mill., Dict. Gard. ed.8 no.22 (1768)
Atlas. 6 t.9. *Aloe Africana Caulescens foliis glaucis caulem amplectantibus, dorso integro spinoso* (Oldenland no.17).
Commelin. Prael. Bot.:71 t.20. Idem.
Artist. Maria Moninckx (1700-1702).
Citations. *Aloe perfoliata* L. ε, 1753:320, [ms LINN], Willd. 1799:186.
Aloe supralaevis Haw. 1804:22, Aiton f. 1811:293, Sweet 1818:75, Baker 1880:180, Berger 1908:310.
Pachidendron pseudoferox (Salm-Dyck) Sweet 1818: 74.
Aloe subferox Sprengel 1826:73 – Huth.
Aloe ferox Mill. 1768 – Reynolds 1950:462.
Taxonomic notes. Linnaeus based *Aloe perfoliata* ε on Commelin's plate. The plate was long considered to represent *A.supralaevis* Haw., but this name was reduced to *A.ferox* Mill. by Reynolds 1950:461.
Distribution. South Africa to Natal and Transkei.
Introduction 1700. No reference to the species is made before Commelin's plate. His plant was raised from seed sent in 1700 from the Cape by Willem Adriaan van der Stel.

Aloe ? ferox Mill., Dict. Gard. ed.8 no.22 (1768)
Atlas. 3 t.11. *Aloe Africana foliis glaucis, margine & dorso integro spinosis* (Oldenland no.11).
Commelin. Hort. Amst. 2:25 t.13. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Aloe perfoliata* L. 1753:319 – not cited in the protologue – [ms LINN].
Aloe supralaevis Haw., Trans. Linn. Soc. 1804, 7:22.
Aloe subferox Sprengel, Syst. 1826,2:73 – Huth.
Aloe cf. *ferox* Mill. 1768 – Reynolds 1950:465.
Pachidendron pseudoferox (Salm-Dyck) Sweet 1818: 74.
Taxonomic notes. Among Commelin's *Aloe*-plates this is the most difficult one to identify. The best guess is *Aloe ferox*. It is in the protologue of *Aloe supralaevis* Haw. Both *A.supralaevis* Haw. and *Aloe subferox* Sprengel are synonyms of *Aloe ferox* Mill.
Introduction. Commelin did not specify the source of his plant.

Aloe glauca Miller, Dict. Gard. ed.8 no.16 (1768) [Pl.13]
Atlas. 3 t.9. *Aloe Africana foliis glaucis, margine & dorsi parte superiore spinosis Floribus ornata* (Oldenland no.10).
Commelin. Prael. Bot.: 75 t.24. Idem, but *'flore rubro'* instead of *'Floribus ornata'*.
Artist. Maria Moninckx (1702).
Citations. *Aloe perfoliata* L. κ 1753:320, [Hort. Cliff.: 131.3 ε, ms LINN, Tilli 1723:7, Miller 1754 no.9].
Aloe glauca Mill. 1768 – Haw. 1804:19, Berger 1908: 188, Reynolds 1950:197 (with reproduction of the plate and water-colour).
Taxonomic notes. *Aloe glauca* Mill. is the name used at present for Commelin's plant. Miller cited for his species *'Aloe Africana caulescens foliis glaucis brevioribus foliorum parte interna & externa nonnihil spinosa* Com. Prael. 71'. The only name in Commelin similar to this is *'Aloe Africana caulescens, foliis glaucis brevioribus caulem amplectantibus, foliorum parte interna & externa nonnihil spinosa'* Prael. Bot.:72 t.21. This plate is interpreted as *Aloe brevifolia* Mill. var. *depressa* (Haw.) Baker.
Miller's diagnosis reads: 16 *Aloe (Glauca) caule brevi, foliis amplexicaulibus bifariam versis spinis marginibus erectis floribus capitatis.* This diagnosis cannot be reconciled with Commelin's Plate 21, where the leaves of the sterile plant are spirally arranged. The inflorescence is shown in Commelin 1706 t.45, but it is spicate, not capitate. Commelin's Plate 21, therefore, cannot possibly typify *Aloe glauca* Mill.
Miller's diagnosis matches fairly closely the plant in Commelin 1706 t.44, but this plate is not cited and its phrase-name differs essentially: *Aloe Africana caulescens foliis magis glaucis caulem amplectantibus & in mucronem obtusiorem definentibus.* Plate 44 is interpreted as *Aloe commixta* Berger.
Commelin's Plate 24, which is nowadays interpreted as *Aloe glauca* Mill., is not cited by Miller in 1768. Miller listed Commelin's plant as his *Aloe* no.9 only in 1754, but in his later works, he omitted this taxon. Miller's diagnosis is not in agreement with Commelin's t.24, nor with the present concept of *Aloe glauca*, for that matter. I cannot suggest a typification of *A.glauca* Mill. Although I consider the name as suspect, I am not fully convinced at the moment that this well-known name should yield to (probably) *A.rhodacantha* DC. I there-

fore prefer to follow Reynolds (l.c.) in using the name *Aloe glauca* Miller for Commelin's plant for the present.
Distribution. South Africa: W.Cape.
Specimen seen. Reynolds 4749 (SAM).

Aloe glauca Miller, Dict. Gard. ed.8 no.16 (1768)

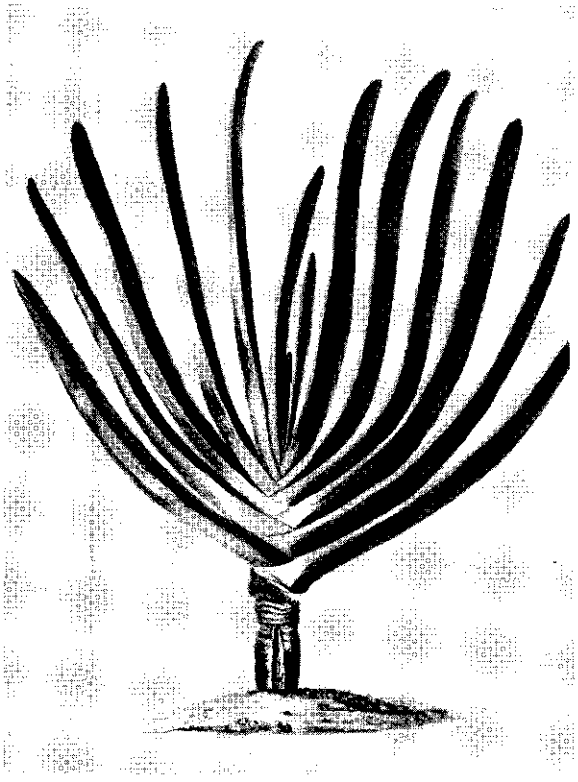
Atlas. 3 t.8. *Aloe Africana foliis glaucis, margine & dorsi parte superiore spinosis.*
Commelin. Hort. Amst. 2:23 t.12. Idem.
Artist. Jan Moninckx (1697-1700).
Citations. *Aloe perfoliata* L. κ 1753:320, [ms LINN, Boerhaave 1719,2:130.18].
Aloe perfoliata L. ι Willd. 1799:186.
Aloe glauca Mill. 1768 – Haw. 1804:19, Reynolds 1950:197 (with reproduction of the plate).
Aloe glauca Mill. var. *minor* Haw. 1812:79 – Huth.
Taxonomic notes. Commelin's sterile plant flowered a few years later and was pictured again in flower in Prael. Bot. t.24. See above.
Introduction. W.A.van der Stel donated this plant in 1697.

Aloe humilis (L.) Mill., Dict. Gard. ed.8 no.10 in corrigenda (1768) [Pl.43]

Atlas. 6 t.13. *Aloe Africana humilis spinis inermibus & verrucosis obsita* (Oldenland no.22).
Commelin. Prael. Bot.:77 t.26, Rar. & Exot.:46 t.46. Idem.
Artist. Maria Moninckx (1702-1705).
Citations. *Aloe perfoliata* L. *o humilis* L. 1753:320, [Hort. Cliff.:131.4, Boerhaave 1719,2:130.23, Tilli 1723:7 t.6, Burm. 1737 Cat. Afr.:25.22].
Aloe pumila L. [ms LINN].
Aloe humilis (L.) Mill. 1768 no.10, Lam. 1783:88, Willd. 1799:187, DC. 1800:7 t.39, Haw. 1804:15, Baker 1880:157, Huth, Berger 1908:181, Reynolds 1950:174 (with reproduction of Commelin 1706 t.46).
Aloe verucosospinosa Allioni 1773:13.
Taxonomic notes. *Aloe perfoliata o humilis* L. is based on Hort. Cliff.:131.4 and Van Royen 1740:24.
No specimens of this species have been found in H.S.C. nor in Leiden. Therefore Commelin's Plate 46 in Plantae Rariores et Exoticae, 1706, is proposed here as the lectotype. *A. verucosospinosa* All. is a homotypic synonym.
Distribution. South Africa: Cape Province.
Introduction 1701. Plants were received in 1701 and 1702 from the Cape, sent by Willem Adriaan van der Stel. No prior introductions are known to me.
Specimen seen. MacOwan 2230 (SAM).

Aloe perfoliata L., Sp. Pl.:319 (1753)

Linnaeus' nomen specificum legitimum for *Aloe perfoliata* reads: *'Aloe floribus pedunculatis crenuis* [sic – ? cernuis] *corymbosis subcylindricis'*. Then follow references to Hort. Cliff.:132, Hort. Ups.:86 and Van Royen:23. The phrase-name used in these three books is *'Aloë foliis caulinis dentatis amplexicaulibus vaginantibus'*.
Linnaeus listed 16 varieties of *Aloe perfoliata* in Sp. Pl.:
α is *Aloe commixta* Berger [Hort. Cliff.:131.3 α]
β is *Aloe africana* Mill. [Hort. Cliff.:131.3 β]
γ is *Aloe ferox* Mill. [Hort. Cliff.:131.3 γ]
δ is *Aloe brevifolia* Mill. [Hort. Cliff.:131.3 δ]
ε is *Aloe ferox* Mill. [Hort. Cliff.:131.3 γ]
ζ is *Aloe brevifolia* var. *depressa* (Haw.) Baker [Hort. Cliff.:131.3 δ]
η is *Aloe arborescens* Mill. [Hort. Cliff.:131.3 ϑ]
ϑ is *Aloe saponaria* Mill. [Hort. Cliff.:131.3 ζ]
ι is *Crassula perfoliata* L. [Hort. Cliff.:116.2]
κ is *Aloe glauca* Mill. [Hort. Cliff.:131.3 ε]
λ is *Aloe saponaria* Mill. [Hort. Cliff.:131.3 ζ]
μ is *Aloe saponaria* Mill. if *A. obscura* Mill. belongs to this species
υ is *Aloe mitriformis* Mill. [Hort. Cliff.:131.3 ι]
ζ is *Aloe succotrina* All. [Hort. Cliff.:131.2 β]
o humilis is *Aloe humilis* (L.) Mill. [Hort. Cliff.:131.4]
* *vera* is *Aloe vera* (L.) Burm.f. [Hort. Cliff.:130.2]
The specimen LINN 442.1 '1 *perfoliata*' is designated by Reynolds (1950:89) as the lectotype of *Aloe perfoliata*. This specimen consists of an inflorescence only. This inflorescence is a raceme and not a corymb as Linnaeus described in the diagnosis, but it could be described as subcylindric, another descriptive word used by Linnaeus in the diagnosis. *'Corymbosis subcylindricis'* is in fact a contradictio in terminis. I can only interpret it as a description of the wide range in the shape of the inflorescence shown by the aggregate of species that Linnaeus included in *'A. perfoliata'*: from corymbose to subcylindric. The specimen LINN 442.1 is within this range, and Reynold's typification is the obvious one.
Reynolds was not able to identify the type with any *Aloe* species currently recognized, and neither can I. If it belongs to any of the species covered by the Linnean varieties, it could be *A. brevifolia*, but this is conjectural; why not *A. glauca* or *A. variegata*? I think a consensus regarding its identity will never be reached, the more so since no leaves are available for a study of the epidermis characters. No paratypes are available in the Hortus Siccus Cliffortianus or in the Van Royen herbarium.
The name *Aloe perfoliata* has been used by early botanists, e.g. by Thunberg (1785), for the species currently named *A. ferox* Mill. The type does not permit this interpretation (Reynolds l.c.).
The name *Aloe perfoliata* L. has not been used for any taxon for nearly 200 years. Recently, however, Webb (1980:20) used *'Aloe perfoliata'* while reducing *A. mitriformis* Mill. as a synonym for unexplained reasons. The type specimen certainly does not belong to the latter species which has a corymbose inflorescence.
One might leave the situation as it stands: *Aloe perfoliata* L. typified by LINN 442.1, but never employed though always available to replace another well-known

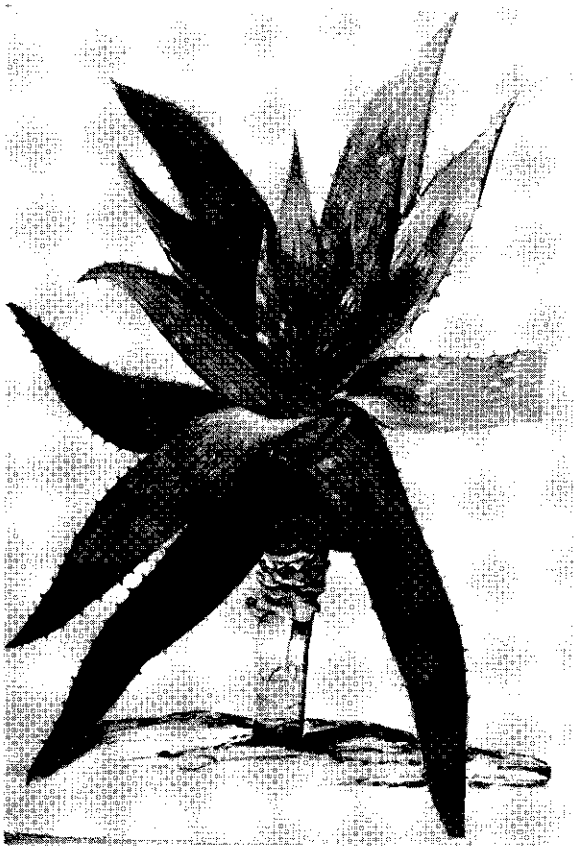


Aloe plicatilis. Atlas 3 t.3

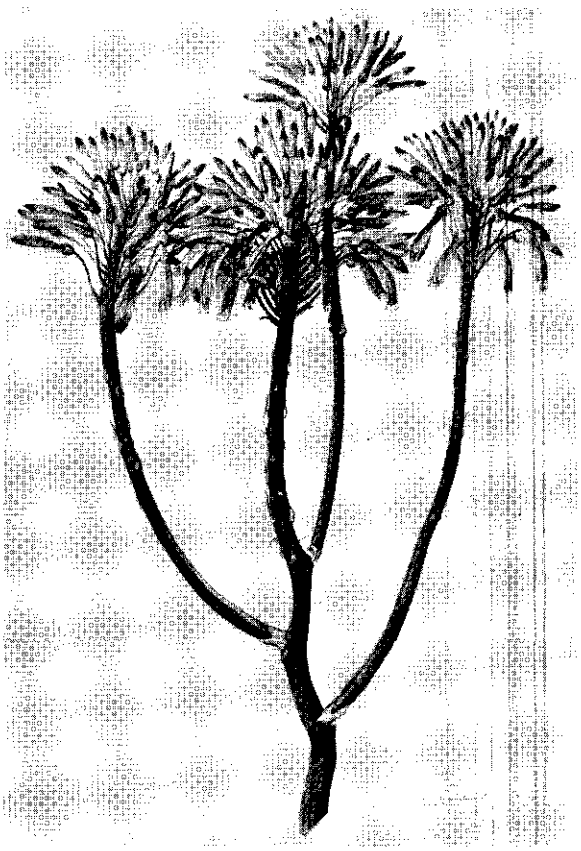
name of long standing in *Aloe.* Some restraint among authors treating the taxonomy of species of *Aloe* would avoid confusion.

Aloe plicatilis (L.) Mill., Dict. Gard. ed.8 no.7 (1768)
Atlas. 3 t.3. *Aloe Africana arborescens Montana non spinosa, folio longissimo plicatili, Flore rubro* (Oldenland no.1).
Commelin. Hort. Amst. 2:5 t.3. Idem.
Artist. Alida Withoos (1694).
Citations. *Aloe disticha* L. ϵ *plicatilis* L., 1753:321, [Hort. Cliff.:131.3 κ, 132.11 α, ms LINN, Boerhaave 1719,2:131.34, Tilli 1723:7, Weinmann 1737 t.60, Burman 1737 Cat. Afr.:24, Fabr. 1763:10].
Aloe flabelliformis Salisb. 1796:246.
Aloe plicatilis (L.) Mill. 1768, Burman f. 1768 P.F.C.: 10, Lam. 1783:90, Willd. 1799:190, DeCandolle 1801: 13 t.73, Haw. 1804:15, Baker 1880:181, Kraus 1893: 115, Huth, Reynolds 1950:503, with reproduction of the plate.
Taxonomic notes. *Aloe disticha* L. 1753 is discussed under *Gasteria.* Linnaeus' ϵ *plicatilis* has Commelin's plate as its base. Since no other type-material is extant, it is the type.
In 1768 the Fan Aloe was raised to specific rank by Miller.
Aloe flabelliformis Salisb. is a superfluous name.
Notes on the plate. The water-colour was not used as the basis for the engraving, although the two represent the same species. The plant in the Hortus Medicus had not flowered, and therefore Caspar Commelin had the inflorescence copied from: 'the book of the Honourable Mr Nicolaas Witsen, Burgomaster and Council of this city, who has lent me the book adorned with all kinds of plants drawn from life in Africa'. Reynolds (1950: 504) could not find this drawing in the set of the South African Museum in Cape Town, but Macnee & Davidson (1969:68) recognised it on fol.5 in the Icones Plantarum et Animalium, kept at Johannesburg.
Specimen seen. MacOwan s.n. (SAM 22513).

Aloe saponaria (Ait.) Haw., Trans. Linn. Soc. 7:17 (1804)
Atlas. 3 t.6. *Aloe Africana caulescens, Foliis spinosis, maculis ab utrâque parte albicantibus notatis* (Oldenland no.3).
Commelin. Hort. Amst. 2:9 t.5. Idem.
Artist. Maria Moninckx (1686-1700).
Citations. *Aloe perfoliata* L. ϑ, 1753:320, [Hort. Cliff.: 131.3 ζ, ms LINN, Boerhaave 1719,2:130.19, Tilli 1723:7 t.10, Bradley 1727:11 (a mirror image of Commelin's plate with an added inflorescence), Fabricius 1763:9].
Aloe picta Thunb. (var.) α *major* Willd., Sp. Pl. 2:187, 1799.
Aloe umbellata DC. α *major* 1802 t.98.
Aloe saponaria (Ait.) Haw. var. *obscura* (Mill.) Haw. 1804:18.
Aloe saponaria (Ait.) Haw. – Huth, Reynolds 1950:225 (with reproduction of Commelin's plate).
Aloe disticha Mill. 1768 no.5.
Taxonomic notes. Linnaeus' *Aloe perfoliata* ϑ is based on Commelin's plant.
Aloe umbellata DC. is accepted by Reynolds (1950: 224) as a synonym of *A. saponaria,* but *Aloe picta* Thunb. (1785:1.4) is considered by him as a synonym of *A. obscura* Mill. (1768 no.6). *Aloe obscura* is listed as a doubtful species in the alliance of *A. saponaria* but not matched by South African material. Miller cited Boerhaave (1727:130.20) which represents a plant received from Simon van der Stel. Reynolds 1950 states that J.Dillen, Hort. Eltham.: 18 f.16 t.15, *'Aloe Africana maculata spinosa minor'* is representative of Miller's *Aloe obscura* (and pointed out Miller cited Boerhaave in doubt). If Dillen's plate would be accepted as representing *A. saponaria* (Ait.) Haw., the correct name for the species is *A. obscura* Mill. If Dillen's plate is accepted as type of *A. obscura* Mill., the basionym of *A. saponaria* (Ait.) Haw. is invalidated, because Dillen's plate is cited in the protologue of *Aloe perfoliata* L. i *saponaria* Ait. (Hort. Kew. 1:467, 1789). This latter procedure I would consider most unfortunate. It seems recommendable not to decide in the interpretation of Dillen's plate.



Aloe saponaria. Atlas 3 t.6

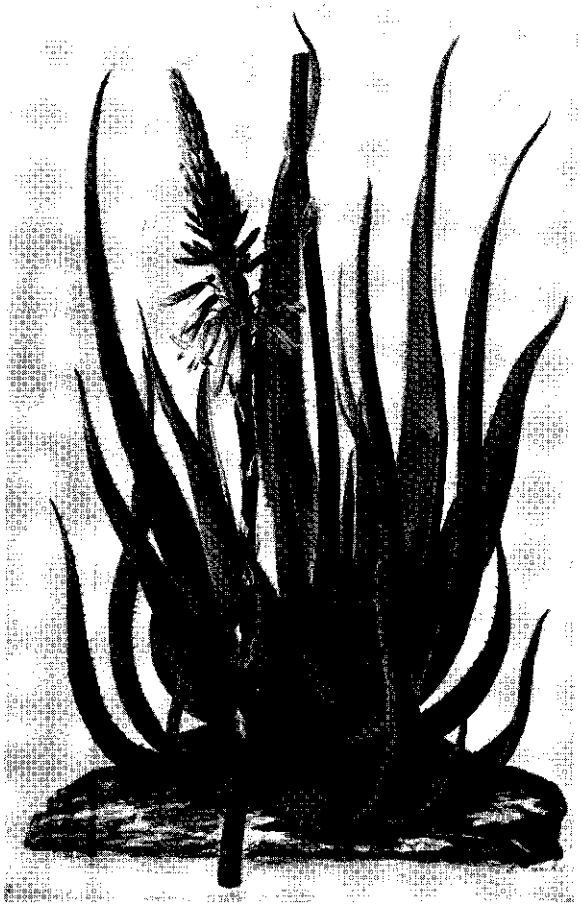


Aloe saponaria. Atlas 7 t.50

Aloe disticha Mill. is a homonym of *Aloe disticha* L. 1753.
Distribution. South Africa: Cape Province, Transkei, Natal, Transvaal, Basutoland.
Introduction ante 1700. Volckamer's *Aloe Africana tricolor, flore rubra* in Flora Noribergensis p.20 (1700) is the first publication on this species. Volckamer received his plant from Commelin and uses the name which Commelin cites as the one attached to the plant as sent from the Cape. Volckamer's name can only be identified through Commelin's plate.
Specimen seen. Flanagan 1328 (SAM).
Flowering plant. In the atlas there is an inflorescence of an *Aloe* in vol.7 t.50, done by Jan Moninckx. This represents *Aloe saponaria* and could well represent the same plant in flower. There is no name for it in the atlas. Tilli (l.c.) provides an inflorescence of the plant received from Commelin.

Aloe succotrina All., Auct. Syn. Stirp. Horti Taur.:13 (1773)

Atlas. 1 t.37. *Aloë Succotrina, angusti-folia spinosa, Flore purpureo* Breynii Prodr. 2 (Breyne 1689:12).
Dutch: Aloe van Succotra, met smalle Doorn-achtige Bladeren, en purpure Blom. Note: Heeft gebloeijt in de Maandt Januarij en Februarij, 1689-1690.
Commelin. Hort. Amst. 1:91 t.48. Idem.
Dutch: Smal-bladerige, doornachtige Aloe van Succotra met purpur-verwige bloemen.
Artist. Jan Moninckx (1689-1690).
Citations. *Aloe perfoliata* L. ξ 1753:320, [Hort. Cliff.: 131.2 β, ms LINN, Boerhaave 1719,2:129.3, Tilli 1723: 7, Commelin 1724:79].
Aloe succotrina All. 1773:13, Lam. 1783:87, DC. 1802:15 t.105, Baker 1880:173, Huth, Reynolds 1950: 390 (with reproduction of the plate).
Aloe sinuata Thunb. 1785 – Willd. 1799:187.
Aloe purpurascens (Ait.) Haw. 1804:20.
Taxonomic notes. *Aloe vera* Mill., Gard. Dict. ed.8, 1768:15 is the first name for this taxon at the species level. Reynolds 1950:390 rejects it as non L., but Linnaeus had only *A.perfoliata* (var.) *vera* for what is now *A.vera* (L.) Burm.f. Burman antedates Miller a few weeks. The next available name is *A.succotrina* All., as lectotype of this name I propose Commelin's t.48.
Distribution. South Africa: Cape Province.
Introduction ante 1685. A young plant was given by Simon van Beaumont, no year is given.



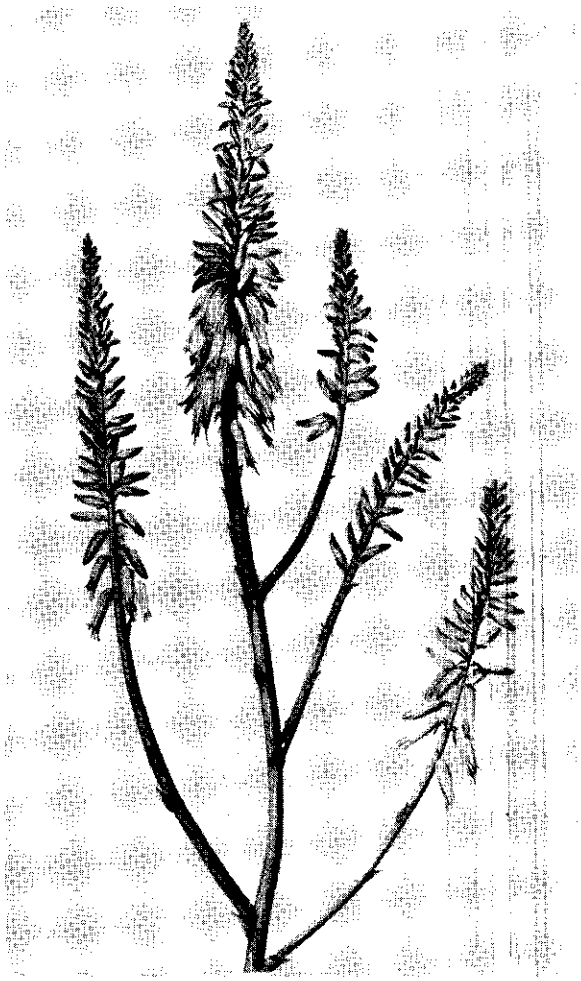
Aloe succotrina. Atlas 1 t.37

Kiggelaer 1690:5 has it as *Aloe Indiae Orientalis, serrata succotrina vera flore phoeniceo.*
Plukenet 1691 t.240 f.4 has the first published illustration of the species 'ex Codice Bentingiano'
Specimens seen. Becker s.n. (SAM 22650); Stokoe s.n. (SAM 68424); Wijnands 886, culta (WAG).

Aloe variegata L., Sp. Pl.:321 (1753) [Pl.45]
Atlas. 6 t.15. *Aloe Africana humilis foliis ex albo & viridi variegatis* (Oldenland no.24).
Commelin. Prael. Bot.:79 t.28, Rar. & Exot.:47 t.47. Idem.
Artist. Maria Moninckx (1686-1702).
Citations. *Aloe variegata* L. 1753:321, [Hort. Cliff.: 132:9, ms LINN, Boerhaave 1719,2:130.24, Tilli 1723: 7 t.7, Burman 1737 Cat. Afr.:25.24, Fabricius 1763:9], Burm.f. 1768 P.F.C.:10, Mill. 1768 no.9, Lam. 1783: 89, Willd. 1799:190, DC. 1799:4 t.21, Haw. 1804:14, Baker 1880:179, 1896:328, Kraus 1893:115, Huth, Berger 1908:190, Reynolds 1950:207 (with reproduction of Commelin 1706 t.47), Duursma 1960:85.
Taxonomic notes. *Aloe variegata* L. 1753 has a new nomen specificum legitimum, based on Commelin's Figure 47 of 1706. I propose Figure 47 as the lectotype. Also Tilli 1723 t.7 is cited by Linnaeus, the leaves in this plate belong to *Aloe variegata* but the inflorescence is not of an *Aloe*, possibly rather of a *Haworthia* or *Gasteria.* Tilli's plant came from Commelin, but the names seem to be confused. The references by Linnaeus to Hort. Cliff., Hort. Ups. and Van Royen 1740:24 are not vouched for by specimens in H.S.C., LINN, or L.
Distribution. South Africa: Cape Province, Orange Free State; Namibia.
Introduction ante 1690. This is one of the few *Aloe*'s known before the Commelin publications. Commelin's phrase is a variant of Kiggelaer's *Aloe Americana foliis ex albo & viridi eleganter variegatis* 1690:4.
Plukenet 1691 t.129 f.1 shows the plant, but his engraving is copied from the set of drawings owned by Bishop Henry Compton of London, made at the Cape and presented to him when he visited Amsterdam in 1691. Also Petiver's Aloes in his Gazophylacium of 1711 are taken from Compton's set of drawings. This Codex is now in the British Museum Library. It consists of copies of the illustrations to Simon van der Stel's journal of his expedition to the Copper Mountains, 1685.
Aloe variegata was also illustrated by Tachard in 1689; his engravings are based on copies of Claudius' drawings made at the Cape where Tachard paid a visit in 1685. Caspar Commelin received seed from 'Africa' (the Cape) in 1700. *Aloe variegata* is also represented in the Codex of the Duchess of Beaufort 1 t.2 f.2.
Specimens seen. Lewis s.n. (SAM 62307 & 62308); MacOwan s.n. (SAM 2260).

Aloe vera (L.) N.L.Burman, Flora Indica:83 (1768)
Atlas. 2 t.33 & 34. *Aloe vulgaris* B: Pin.296 et variorum (Bauhin 1623:286).
Kadanaku, vel Catevala. Hort: Mal: Tom: XI.7 (Reede 1692,11:7 t.3).
Commelin. Not published by Commelin but discussed in Hort. Amst. vol.1:91-92, also mentioned by Commelin 1724:79.
Artist. Alida Withoos (1694).
Taxonomic notes. The earliest validly published name for this taxon is *Aloe perfoliata* vera* L. 1753:320. Linnaeus never treated this taxon at the rank of a species. Miller published an *Aloe vera* in 1768, but this is *Aloe succotrina* All. The correct name for the common *Aloe* of history is *Aloe vera* (L.) Burm.f., which antedates Miller's name a few weeks (Newton 1979:29-30).
Aloe barbadensis Mill. 1768 is the name commonly used for this taxon, but it is superfluous since Burman's name is older. As lectotype of *Aloe perfoliata* var. *vera* L. may serve Kadanaku seu Catevala Reede vol.11 t.3.
Distribution. The original distribution of this species is

Aloe vera. Atlas 2 t.33



Aloe vera. Atlas 2 t.34

not known. Reynolds (1966:155) supposed it to be wild in the Macronesian area, but an Arabian origin is considered to be more likely by others (Jacobsen 1970: 67, Webb 1980:20).
At present, it is widely distributed in the tropics and subtropics.
Introduction. *Aloe vera* has a long history. It was illustrated in the Codex Aniciae Julianae of A.D. 512; Dioscorides knew it. Its pre-linnean history includes Fuchs 1542:138, Dodoens 1583:355, Bauhin 1623: 286, Munting 1680 t.19 and Kiggelaer 1690:6.17.
At present, *Aloe vera* is widely cultivated.
Specimens seen. Bourgeau 1533 (WAG); Herb. Linnaeus, annotated as *Aloe perfoliata* by Linné fil. (S).

Astroloba spiralis (L.) Uitewaal, Succulenta 1947:53 (1947)

Atlas. 6 t.15. *Aloe Africana erecta rotunda, folio parvo & in acumen rigidissimum exuente* (Oldenland no.28).
Commelin. Prael. Bot.:83 t.32. Idem.
Artist. Maria Moninckx (1702).
Citations. *Aloe spiralis* L. 1753:322, [Hort. Cliff.:132. 7, Hort. Ups.:87.7, ms LINN, Boerhaave 1719,2:131. 33, Tilli 1723:7, Dillen 1732:16 t.13 f.14], Burman.f. 1768 P.F.C.:10, Miller 1768 no.12, DC. 1800:10 t.56.
Aloe spiralis L. var. α *imbricata* Willd. 1799:191.
Aloe imbricata (Willd.) Haw. 1804:7, Huth.
Aloe cylindracea Lam. 1783:89.
Aprica spiralis (L.) Willd. 1811:273, Baker 1880:218, Baker 1896:331.
Astroloba spiralis (L.) Uitewaal 1947:53.
Taxonomic notes. *Aloe spiralis* has a new nomen legitimum specificum in Sp. Pl. based on the flowers. The phrase name used in Hort. Cliff., Hort. Ups. and Van Royen described the vegetative plant. No specimens are preserved in the respective herbaria. The remaining elements are the plates published by Commelin and by Dillen. Commelin's plant has no flowers. Dillen's plate t.13 f.14 shows the rugose flowers typical of the species, it is the obvious lectotype.
Aloe cylindracea is a superfluous name for *Aloe spiralis*, and so is *Aloe spiralis* var. *imbricata* Willd.
The genus *Apicra* Willd. was shown to be a synonym of *Haworthia* Duval by Uitewaal 1947.

Parr (1971) reduced *Astroloba* to a section of *Haworthia* Duval. The correct name in this genus is given as *H.imbricata* (Willd.) Haw. 1812:98, non *H.spiralis* (Berger) Resende.
Aloe cylindracea Lam. should, however, be used as the basionym for a new combination in *Haworthia.* I refrain from such action as I accept *Astroloba* as a separate genus.
Distribution. South Africa: Cape Province.
Introduction. Daniel des Marets donated this plant to the Hortus 'hoc anno' (1702 probably).
Specimens seen. Barker 5096 (NBG); Hall s.n. (NBG).

Bulbine alooides (L.) Willd., Enum. Hort. Berol.: 372 (1809)
Atlas. 8 t.75. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Taxonomic notes. *Anthericum alooides* L. 1753: 311, is based mainly on Hort. Ups.:83.1. There is no specimen of it in LINN.
Phalangium capense sessile, foliis aloeformibus pulposis Dillen 1732:322 t.232 f.299 is a good match to the water-colour, but Dillen has a younger more dense inflorescence. Dillen's plate might serve as type of Linnaeus' name.
Introduction ante 1706. Judging from the name, Tilli 1723:17 *Asphodelus africanus luteus, foliis aloes* might be the same species. The Amsterdam plant is the first I know, if Plukenet (Amalth. 1705:40), cited for the taxon in Hort. Cliff.:123, is correctly excluded. Boerhaave 1719:134.6 might also represent the species.
Distribution. South Africa: Cape Province.
Specimens seen. Fries c.s. 756 (S); Sidey 936 (S); Thunb. s.n. in herb. Montini (S).

Bulbine annua (L.) Willd., Enum. Hort. Berol.: 372 (1809)
Atlas. 8 t.7. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. *Anthericum annuum* L. 1753: 311 is based mainly on Hort. Ups.:83.8. There is no specimen of it in LINN. The reference to Wachendorf does not help either, it is not vouched by a specimen.
Introduction ante 1706. Moninckx's water-colour is the first record of the species in cultivation. It was in Utrecht in 1747 and in Uppsala in 1748.
Distribution. South Africa: Cape Province.
Specimen seen. Herb. Gasströmer (S).

Dracaena fragrans (L.) Ker-Gawler, Bot. Mag. 27 t.1081 (1808)
Atlas. 3 t.4 & 5. *Aloe Africana arborescens, Floribus albicantibus fragrantissimis.*
Commelin. Hort. Amst. 1:93 t.49. *Aloe arborescens*

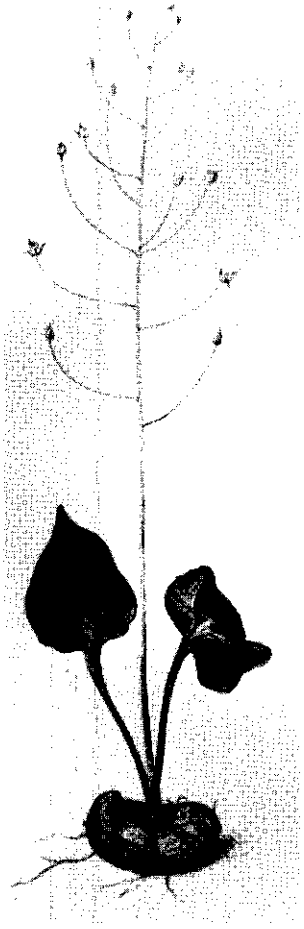
Dracaena fragrans. Atlas 3 t.4

africana. Catal. Horti Beaumontiana (Kiggelaer 1690). Dutch: Africaansche Boom-Aloe.
Hort. Amst. 2:7 t.4. *Aloe africana arborescens floribus albicantibus fragrantissimis.*
Artist. Jan Moninckx (1699).
Citations. *Aloe fragrantissima* Jacq. 1762:309 (May). *Aletris fragrans* L. 1762:456 (Sept.), [ms LINN], Burm. f. 1768 P.F.C.:10, Miller 1768 no.5, Lam. 1783:79, Gmelin 1791:561, Willd. 1799:183.
Pleomele fragrans (L.) Salisb. 1796:245 – Smith 1979: 152.
Dracaena fragrans (L.) Ker-Gawl. 1808 t.1081, Schult. f. in Roem. & Schult. 1829:342, Kunth 1850:9, Huth.
Agave foetida L. 1753:323 – Linn. 1756:23 (Chenon 1751:23).
Taxonomic notes. Jacquin based his *Aloe fragrantissima* (May 1762) on a cultivated plant of which no vouching specimen has been found. Commelin's Plates 49 and 4 are cited in the protologue, where Jacquin wrote that the description by Caspar Commelin (1701) leaves nothing to be desired. Therefore I propose Commelin's Plate t.4 f.2 (1701) as the lectotype of *Aloe fragrantissima* Jacq.
Linnaeus cited Commelin's plates in the protologue of *Aletris fragrans* (Sept. 1762), a name published four months later than *Aloe fragrantissima* Jacq. and, there-

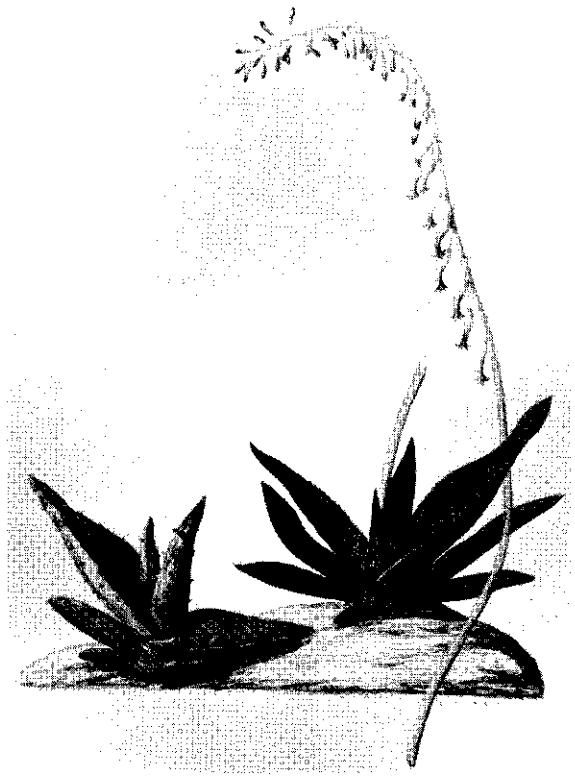
Dracaena fragrans. Atlas 3 t.5

fore, a superfluous name based on the same type. The specimen LINN 440.4 is annotated by Linné filius and hence not available for typification, so that Commelin's plate is the only suitable type material of *A.fragrans* anyway.
Coode (1978:21) incorrectly designated LINN 440.4 as the lectotype of *Aletris fragrans* L.; Smith (1979: 152) typified *A.fragrans* by Commelin's Plates 49 and 4. This author upheld Salisbury's genus *Pleomele* as amended by N.E.Brown, of which *P.fragrans* (L.) Salisb. is the lectotype.
Whether or not the name *Dracaena fragrantissima* has been validly published is doubtful. The name was published in Gard. Chron. 1864:413 for a plant exhibited at Brussels. Pending the present monographer's, Ir J.J. Bos', decision on the status and application of this name, I use *Dracaena fragrans* (L.) Ker-Gawl. as the correct name for Commelin's plant.
The identification of Commelin's figures as *Agave foetida* L. by Chenon (Nova Genera 1751 & 1756:23), is in error, see the discussion on *Furcraea foetida* (L.) Haw.
Note on the plates. The Plate 49 (1697) is not represented in the Moninckx atlas by an original water-colour. Plate 4 (1701) represents the same plant ca. 8 years later, when it flowered in March 1699. Throughout the literature, both plates have been cited together, therefore I discuss them jointly.
Distribution. Tropical Africa.
Introduction ante 1690. Commelin received his plant from Simon van Beaumont, who had it from Guinea.
Specimens seen. Bos 10274 and 10399, culta (WAG); Dawkins 540 (K); Hall 1826, Cape Coast Ankagul (K); De Koning 5333 (WAG); W.de Wilde c.s. 4435 (WAG).

Drimia capensis (Burm.f.) Wijnands, *comb. nova* [Pl.32]
Atlas. 4 t.44. *Scilla Africana Flore viridi parvo, bulbo amplissimo.* Herm: Hort: Lugd:Cat:543 (Hermann 1687:543).
Commelin. Hort. Amst. 2:187 t.94. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Scilla maritima* L. 1753:308, ms LINN only, but never actually cited by Linnaeus for this species. *Scilla capensis* Burm.f. 1768 P.F.C.:10. *Ornithogalum altissimum* L.f. 1782:199 – Huth.
Taxonomic notes. Commelin's Plate 94 was twice cited in literature. N.L.Burman's citation of it has been overlooked, in spite of the fact that *Scilla capensis* is the earliest validly published name for an African *Drimia.* Huth's interpretation as *Ornithogalum altissimum* L.f. (= *Urginea altissima* (L.f.) Bak.) is incorrect. Jessop (1977:289) described this species as having (almost) free corolla segments but Moninckx' water-colour shows a fused basal part of the corolla. The lectotype of *Ornithogalum altissimum* L.f. is Thunberg s.n., UPS-Thunb. 8275 (!). This specimen differs appreciably from Commelin's Plate 94, e.g. in its long patent pedicels. It belongs in *Urginea* if this genus is to be separated from *Drimia.* Another Thunberg Collection, in S, cited by Jessop for *Drimia altissima* also, is conspecific with Commelin's plate.
Obermeyer (1981) separated these two elements in Jessop's concept of *Drimia altissima* (L.f.) Ker-Gawl. as *Urginea altissima* (L.f.) Bak. and *Drimia forsteri* (Bak.) Oberm. respectively.
Commelin's Plate 94 represents the very robust, over 2 m high, *Drimia* of the S.W.Cape which is known as 'Maerman'.
A new combination is necessary:
Drimia capensis (N.L.Burman) Wijnands, *comb. nova*
basionym: *Scilla capensis* N.L.Burman, Florae Capensis Prodromus 1768:10,
lectotype: Commelin Hort. Amst. 2:187 t.94. No specimen is preserved in Burman's herbarium (G),
heterotypic synonym: *Urginea forsteri* Baker, Fl. Cap. (1897)6:469,
holotype: Forster s.n. (K).
Drimia forsteri (Baker) Obermeyer, Bothalia 13:453 (1981).
Distribution. South Africa: S.W.Cape.
Introduction. Commelin received his plant from Pieter Rens Valkenier, but no year is given. Paul Hermann



Eriospermum capense. Atlas 4 t.38



Aloe ferox, Gasteria carinata. Atlas 3 t.11

grew a plant in Leiden (1687) that Commelin considered to be the same as his. The earliest illustration of the species could well be t.67 of Sweerts' Florilegium (1612), tentatively identified as *Urginea altissima* by Gunn & Codd (1981:16).

Specimens seen. Andreae 247 (PRE, STE); Boucher 3516 (PRE); Cooper 3275 (K); Ecklon s.n. (S); Ecklon & Zeyher s.n. (SAM-48456); Forster s.n. (K); Jordaan 130 (STE); Leighton 458 (PRE); Lewis 3261 (SAM); Marloth 7692 & 7329 (PRE); Montgomary 329/319 (STE); Olivier 67 (PRE, STE); Thunberg s.n. (S); Wijnands 958 (WAG); Zinn s.n. (SAM-65806).

Eriospermum capense (L.) Thunberg, Fl. Cap. 2:294 (1811)

Atlas. 4 t.38. *Ornithogalum Africanum plantaginis Roseae folio, radice tuberosa. Ornithogalum affinis radice Tuberosa, Cyclaminis folio, Capitis Bonae Spei.* Breyni Centuria 93 (Breyne 1678:93 t.41).

Commelin. Hort. Amst. 2:175 t.88. Idem.

Artist. Not signed (1698-1700).

Citations. *Ornithogalum capense* L. 1753:308, [V. Royen:31.1, It. Scan.:73 (1751), ms LINN, Rudbeck 1702:138 f.14], Burm.f. 1768 P.F.C.:9, Miller 1768, Kraus 1893:116.

Eriospermum latifolium Jacq. 1795,3:189, 1797:73, Huth, Baker 1896:375.

Eriospermum capense (L.) Thunb. 1811:294 – Duthie 1940:2, Salter 1941:109.

Taxonomic notes. *Ornithogalum capense* L. is based on Van Royen:31.1; there is no specimen in herb. Van Royen to typify the name. From the references cited in the protologue Salter (l.c.) preferred Commelin's illustration to Breyne's; it is proposed as lectotype. I did not find a Burmeister specimen in SBT vouching for the reference to Iter Scan. Jacquin's plant is illustrated in Icones 2 t.420.

Distribution. South Africa: S.W.Cape.

Introduction. Breyne knew the species in 1678. Commelin received 'roots' of the illustrated plant from the Cape in 1698.

Specimens seen. Salter 8330 (WAG); Marloth 14195 (PRE); Oliver 4838 (PRE).

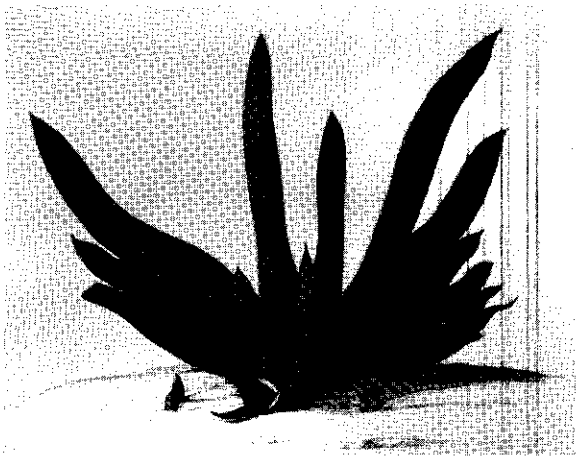
Gasteria carinata (Mill.) Duval, Pl. Succ. Alenc.: 6 (1809)

Atlas. 3 t.11. *Aloe Africana Flore rubro, folio triangulari & verrucosis ab utraque parte albicantibus notato* (Oldenland no.7).

Commelin. Hort. Amst. 2:17 t.9. Idem.
Artist. Jan Moninckx (1695-1700).
Citations. *Aloe disticha* L. β 1753:321, [Hort. Cliff.: 132.11 δ, ms LINN 'ε', Boerhaave 1719,1:130.25 & 131.37, Tilli 1723:7, Fabricius 1763:10], Burm.f. 1768 P.F.C.:10.
Aloe maculata All. 1773:13.
Aloe acuminata Lam. 1783:90.
Aloe carinata Mill. 1768 no.21, Salm-Dyck 1854 t.20 '? fig. mala', Huth.
Aloe carinata Mill. var. *ensiformis* DC. 1801:14 t.83.
Aloe lingua Thunb. var. *angulata* Haw. 1804:13 '?'
Aloe verrucosa Willd. 1799:189, Kraus 1893:115.
Taxonomic notes. Commelin's Plate 9 being the only element available for the typification of *Aloe carinata* Mill., is designated as the type.
Aloe acuminata Lam. is a homotypic synonym, as well as *A.maculata* All.
Dillen's Plate 18 is a better representation of this species than Commelin's.
Aloe verrucosa Willd. is a synonym of *Aloe carinata* Mill.; *Aloe verrucosa* Mill. is a different species.
Distribution. South Africa: Mossel Bay.
Introduction ante 1700. The plant was grown from seed 'received some years ago'.

Gasteria disticha (L.) Haw., Descr. new Succ. Pl.: 352 (1827) [Pl.14]

Atlas. 3 t.10. *Aloe Africana Flore rubro, foliis maculis ab utraque parte albicantibus notato.*
Commelin. Hort. Amst. 2:15 t.8. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Aloe disticha* L. 1753:321, [Hort. Cliff.: 132.11 β, Hort. Ups.:86.4, ms LINN, Boerhaave 1719,1: 131.35, Tilli 1723:7, Fabricius 1763:9], Burm.f. 1768 P.F.C.:10.
Aloe linguiformis Miller 1768 no.13, Lam. 1783:90.
Aloe lingua Thunb. var. *angustifolia* Ait. 1789:469 – Willd. 1799:190, DC. 1801 t.68, Huth.
Aloe angulata Willd. 1811:276 – Salm-Dyck 1849:t.29.
Gasteria angulata (Willd.) Haw. 1827:353 – Jacobsen 1970:209.
Taxonomic notes. No authentic specimens are available to typify *Aloe disticha* L. Commelin's Plate 8 is proposed here as the lectotype. *Aloe linguiformis* Mill. is a homotypic synonym. *Aloe disticha* Mill. non L. is *Aloe saponaria* (Ait.) Haw.
Gasteria disticha as typified here is a S.W.Cape taxon, the most likely type locality is the Brede Rivier-drift. The epithet '*disticha*' was used by Medicus (Theodora speciosa 1786:70) in the name *Kumara disticha* which is a synonym of *Aloe plicatilis* (L.) Mill. (= *Aloe disticha* ε *plicatilis* L.). Since N.L.Burman (1768) restricted *Aloe disticha* L. to Commelin's Plate 8, the epithet *disticha* should be applied in the genus *Gasteria*, and not for the Fan Aloe.
Note on the plate. In the water-colour the flowers are smaller than in the engraving, the detail of a dissected flower is omitted in the plate.
Distribution. South Africa: S.W.Cape.
Introduction ante 1700. Commelin received his plant from the Cape.



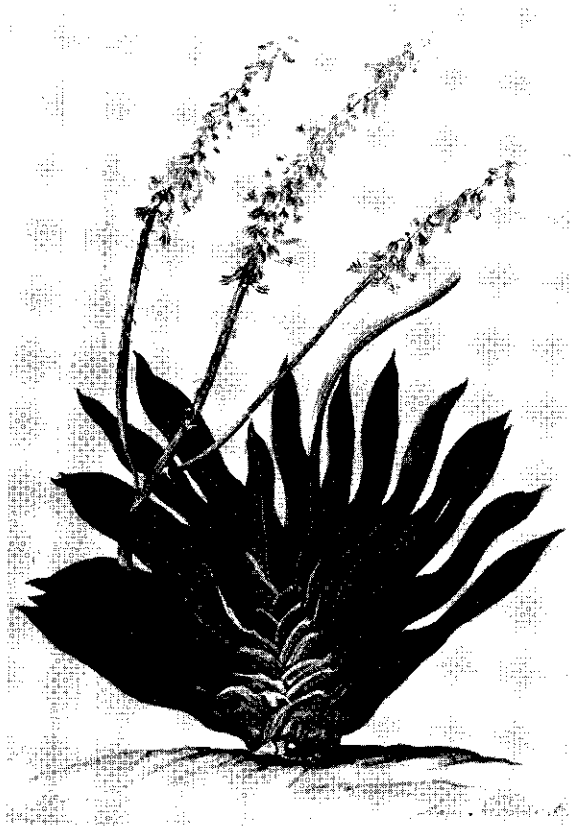
Gasteria nigricans. Atlas 6 t.12

Gasteria nigricans (Haw.) Duval, Pl. Succ. Alenc.: 6 (1809)

Atlas. 6 t.12. *Aloe Africana glabro folio minutissimis cavitatibus donato.*
Commelin. Prael. Bot.:76 t.23. Idem.
Artist. Maria Moninckx (1686-1702).
Taxonomic notes. The phrase-names used in the atlas 6 t.12 and in Prael. Bot. t.23 are identical. However, the depicted plants are totally different. The published Plate 23 represents *Crassula capitella* (see the text on that species). The water-colour shows *Gasteria nigricans* s.l., or *G.pillansii* Kensit if a narrow species concept is preferred.
Distribution. South Africa: Karroo.

Gasteria nigricans (Haw.) Duval, Pl. Succ. Alenc.: 6 (1809)

Atlas. 7 t.45 and 46. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706), both water-colours.
Taxonomic notes. *Gasteria nigricans* is considered here in a wide sense. I presume it to be a very variable species. The water-colours 45 and 46 clearly represent the same taxon, but the long-acuminate leaftips are not typical of *G.nigricans* s.s. The drawings are well matched with t.9 in Salm-Dyck's Monographia (1849), which is the type of *Aloe guttata* Salm-Dyck (= *Gasteria pseudo-nigricans* (Salm-Dyck) Haw. var. *denticulata* (Salm-Dyck) Stearn).
Bayer (1979:30) used the name *Gasteria retata* Haw.



Gasteria nigricans. Atlas 7 t.46

'to cover a whole multitude of sins', including *G.nigricans.*
Distribution. South Africa: Karroo.

Gasteria verrucosa (Mill.) Duval, Pl. Succ. Alenc.: 6 (1809)

Atlas. 7 t.48. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Distribution. South Africa: Cape (cf. Bayer 1979:33).

Gloriosa superba L., Sp. Pl.:305 (1753)

Atlas. 1 t.40. *Lilium Ceylanicum Superbum, vulgo.* Nienghala Ceylanensium.*
Commelin. Hort. Amst. 1:69 t.35. *Lilium Zeylanicum Superbum.* Mendoni Hort: Malab: Pars 7 (Reede 7 t. 107 f.57).
Dutch: Hoveerdige Zeylonsche lelie.
Artist. Jan Moninckx (1686-1690).
Citations. *Gloriosa superba* L. 1753:305 't.31', [Hort. Cliff.:121.1, Fl. Zeyl.:51.122, ms LINN, Rudbeck 1701:178 f.7, Boerhaave 1719,2:134.1, Burm. 1737: 158], Burm.f. 1768 Fl. Ind.:82, Miller 1768, Willd. 1799: 95, Huth.
Taxonomic notes. The nomen specificum legitimum for *Gloriosa superba* in Sp. Pl. is the same as the phrase-name in Hort. Cliff., Fl. Zeylanica, and Van Royen. The specimen in Herb. Hermann 3:31 is the richer one and fixes the type locality as Ceylon, from where the species was first known. This specimen is proposed as lectotype after a discussion with Mr D.V.Field. Field (1971) discussed the taxonomy of *Gloriosa* and reduced it to a monotypic genus.
Distribution. Tropical Asia and Africa.
Introduction ante 1687. Commelin gave no information on the source of his plant. The editors cite as a synonym *Methonica Malaborum* Hermann 1687:688 t.689 = Taludama = mendoni Hort. Mal. Hermann mentioned the species from the gardens of Beverningk and of Fagel. This showy plant was well distributed over Dutch greenhouses by about 1690.
Specimens seen. H.S.C. 121.1 (BM); Hermann 3:31, lectotype (BM); V.d.Meer 63 (WAG); 'HU', S-Linn; Balsinhas 835 (MAP).

* The name 'nienghala' in the atlas is the same as the one used by Plukenet 1691 t.116 f.3 and Hermann 1717:34 f.31.

Haworthia

Aloe pumila L., Sp. Pl.:322-323 (1753)

Aloe pumila is a collective name, validated by the nomen specificum legitimum: *Aloe floribus sessilibus bilabiatis: labio superiore erecto; inferiore petente.* No specimen in LINN vouches for the name.
The Linnean species consists of five varieties. The Linnean concept of *A.pumila* comprises the complex of varieties and not only the species in a restricted sense from which five varieties are segregated. All elements are nowadays included in the genus *Haworthia.* Two varieties are named: α *margaritifera* and δ *arachnoidea.* The 'varieties' β, γ and ε remained unnamed, however; they were apparently considered to represent the respective cited references in earlier literature. The arrangement of the five varieties in Sp. Pl. suggests that α, β and γ, and δ and ε are to be joined and this is further strengthened by Linnaeus' annotation which reads: *Flores in hoc genere specierum certissime indices conjungunt Margaritiferam & Arachnoideam.*
At present four species are recognised within the Linnean protologue of *Aloe pumila,* which I propose to be typified as follows:
Haworthia margaritifera (L.) Haw. comprises α and β, and is typified by Commelin 1701 t.10.
Haworthia minima (Ait.) Haw. is γ, typified by Dillen 1732 t.16 f.18.
Haworthia arachnoidea (L.) Duval is δ, typified by Commelin 1703 t.27.
Haworthia herbacea (Mill.) Stearn is ε, typified by Boerhaave 1719,2 t.131.
At the species level, the epithet *'pumila'* is not currently used for one of these species. It was combined in

Haworthia by Duval (1809), who based this binomial on *Aloe arachnoidea* var. *pumila* Haw. 1804 (recte Ait. 1789), which is, however, *H.herbacea* (Mill.) Stearn, as it was based on *Aloe pumila* ε of Linnaeus.
Aloe herbacea Mill. and its type Boerhaave t.131 are both cited by Duval. His illegitimate combination fortunately prevents the use of the name *Haworthia pumila* with *Aloe pumila* L. as the basionym, because it would otherwise have to replace the established name *Haworthia margaritifera.*
Scott (1978:44-46) advocated the use of the name *H. pumila* for the species nowadays named *H.margaritifera.* As shown above, this application is incorrect.

Haworthia arachnoidea (L.) Duval, Pl. Succ. Hort. Alenc.:7 (1809) [Pl.44]
Atlas. 6 t.14. *Aloe Africana humilis arachnoidea.* (Oldenland no.23).
Commelin. Prael. Bot.:78 t.27. Idem.
Artist. Jan Moninckx (1701-1702).
Citations. *Aloe pumila* L. var. *arachnoidea* L. δ 1753: 322, [Hort. Cliff.:131.5 β, Hort. Ups.:86.5 β, Tilli 1723:7, Dillen 1732:20 t.16 f.17 and 18].
Aloe pumila L. [ms LINN].
Aloe arachnoidea (L.) Burman f. 1768 P.F.C.:10, Miller 1768 no.17 ('72'), Lam. 1783:88, DC. 1800:9 t.50, Haw. 1804:10, Huth.
Aloe arachnoidea (L.) Burm.f. var. *communis* Willd. 1799:188.
Haworthia arachnoidea (L.) Duval 1809:7 – Haw. 1812: 96, Baker 1880:215, Baker 1896:354, Berger 1908: 112, Bayer 1976:3, 98, Scott 1978:41 (with reproduction of the plate).
Taxonomic notes. Commelin's plate is the lectotype of the name *'arachnoidea',* because no other element is available.
Bayer (l.c.) equated *H.arachnoidea* with *H.setata* Haw., this decision concerning the identity of *H.arachnoidea* means that the species still occurs in nature. *H.arachnoidea* has long been believed to be non-existent in the wild. Scott (l.c.) disagreed with Bayer's opinion and considered *H.arachnoidea* to be synonymous with *H. pallida* Haw., *H.setata* would be a different species. I follow Bayer's taxonomy, the more so since Commelin's Plate 27 is in better agreement with the differential characters listed by Scott for his *H.setata* than with those given for his *H.arachnoidea.*
Distribution. South Africa: N.W.Cape (Richtersveld to Little Karroo).
Introduction. Commelin received this species in 1701 and 1702 from the Cape, sent by the Governor (i.e. W.A.van der Stel).
Specimen seen. Bayer 2105 (NBG).

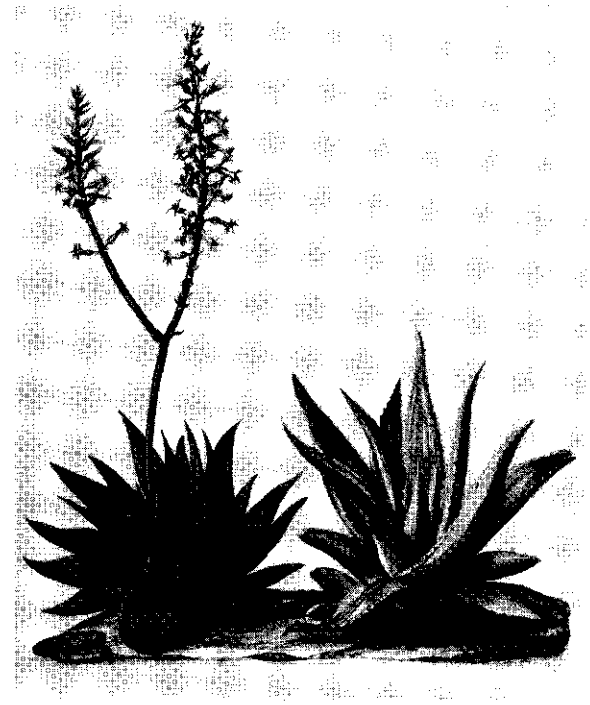
Haworthia margaritifera (L.) Haw., Suppl. Pl. Succ.:55 (1819) [Pl.15]
Atlas. 3 t.12. *Aloe Africana, folio in summitate triangulari margaritifera, Flore subviridi* (Oldenland no.8).
Commelin. Hort. Amst. 2:19 t.10. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Aloe pumila* L. var. *margaritifera* L. 1753: 322, [Hort. Cliff.:131.6 α, Boerhaave 1719,2:130.29].
Aloe pumila L. 1753:322, [ms LINN], Burm.f. 1768 P.F.C.:10.
Aloe margaritifera (L.) Burm.f. 1768 P.F.C.:10 – Mill. 1768 no.14, Allioni 1773:13, Lam. 1783:88.
Aloe margaritifera (L.) Burm.f. var. *major* Ait. 1789: 468 – Willd. 1799:188, DC. 1800:10 t.57, Sims in Bot. Mag. 1811 t.1360.
Aloe margaritifera (L.) Burm.f. var. *maxima* Haw. 1804: 11, Huth.
Haworthia semimargaritifera (Salm-Dyck) Haw. var. *maxima* (Haw.) Haw. 1819:54, Sweet 1827:412.
Haworthia margaritifera (L.) Haw. var. *maxima* (Haw.) Uitewaal subvar. *maxima* 1947:52, Jacobsen 1970:227.
Haworthia margaritifera (L.) Haw. 1819:55 – Kraus 1893:115, Bayer 1971:158, Bayer 1976:3, 133.
Haworthia pumila (L.) Duval 1809:7 – Scott 1978: 44-46 (with reproduction of the plate).
Taxonomic notes. The Linnean epithet *'margaritifera'* can only be typified by Commelin's Plate 10, because no other element is available. *Haworthia semimargaritifera* is a homotypic, superfluous name; the varieties *major* Ait. and *maxima* Haw. are synonyms of var. *margaritifera.*
See the discussion under *Aloe pumila* L. for the reasons to retain the name *H.margaritifera* for this species, and not *H.pumila* (Ait.) Duval.
Distribution. South Africa: Robertson Karroo and W. Little Karroo.
Introduction. Commelin did not specify the source of his plant, apart from 'it is found in Africa in Rocky places'. No earlier introduction is known.

Haworthia margaritifera (L.) Haw., Suppl. Pl. Succ.:55 (1819)
Atlas. 3 t.7. *Aloe Africana margaritifera minor* (Oldenland no.9).
Commelin. Hort. Amst. 2:21 t.11. Idem.
Artist. Alida Withoos (1694).
Citations. *Aloe pumila* L. var. *margaritifera* L. β 1753: 322, [Hort. Cliff.:131.6 β, Boerhaave 1719,2:130.26, Dillen 1732:20].
Aloe pumila L. 1753:322, [ms LINN].
Aloe margaritifera (L.) Burm.f. 1768 P.F.C.:10 – Lam. 1783:88 (β), Salm-Dyck 1834:320 'valde imperfecta'.
Aloe margaritifera (L.) Burm.f. var. *minor* Ait. 1789: 468 – Willd. 1799:188, Haw. 1804:12, Sims in Bot. Mag. 1811 t.1360 (text), Huth.
Aloe margaritifera (L.) Burm.f. var. *media* DC. 1800: 10 t.57.
Haworthia margaritifera (L.) Haw. 1819:55 – Bayer 1971:158, Bayer 1976:3.
Taxonomic notes. *Haworthia margaritifera* (L.) Haw.

var. *minor* (Ait.) Uitewaal (1947:51) was proposed as a name in the tradition of segregating microtaxa in horticultural practice. Bayer (l.c.) stated that the size difference between the plants on Commelin's Plates 10 and 11 is within the variability of the species.
Introduction. Commelin received the plant in 1698 from Petrus Rans Valkenier, 'schepen' (sheriff) and 'bewinthebber' (Governor) of the V.O.C. No earlier introduction is known.
Note on the plate. The inflorescence in the water-colour is omitted in the engraving.
Specimen seen. Compton 18963 (NBG).

Haworthia marginata (Lam.) Stearn, The Cactus Journal 7:39 (1938) [Pl.43]
Atlas. 6 t.13. *Aloe Africana himilis folio in summitate triangulari et rigidissimo, marginibus albicantibus* (Oldenland no.26).
Commelin. Prael. Bot.:81 t.30 and Rar. & Exot.:48 t.48. Idem.
Artist. Maria Moninckx (1700-1705).
Citations. Linnaeus did not make any reference to this plate.
Aloe marginata Lam. 1783:89.
Aloe albicans Haw. 1804:8, Ait.f. 1811:299, Huth.
Haworthia albicans (Haw.) Haw. 1812:9 and 1821:52, Baker 1880:207 and 1896:344.
Haworthia marginata (Lam.) Stearn 1938:39, Bayer 1976:3.
Taxonomic notes. *Aloe marginata* Lam. is based entirely on Commelin's plate and text. Lamarck's text is a translation of Commelin's. There is no specimen in Lamarck's herbarium and he did not state having seen the species dried or alive. Commelin's Plate 48 thus is the type of *Aloe marginata* Lam. *Aloe albicans* Haw. is a homotypic synonym.
Distribution. South Africa: Cape (Bredasdorp, Swellendam, Robertson, Heidelberg).
Introduction. Commelin received the plant in 1700 from 'Africa', that is the Cape.
Specimens seen. Bayer s.n. (NBG); Dekenah 4 (NBG).

Haworthia marginata (Lam.) Stearn, The Cactus Journal 7:39 (1938)
Atlas. 3.t.8. *Aloe Africana folio glabro & rigidissimo, Flore subviridi* (Oldenland no.5).
Commelin. Hort. Amst. 2:13 t.7. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. Linnaeus did not make any reference to this plate.
Aloe albicans Haw. 1804:8 '?'.
Haworthia laevis Haw. 1821:52, Sweet 1827:412, Loudon 1830:128.
Haworthia marginata (Lam.) Stearn 1938:39 – Bayer 1976:3.
Taxonomic notes. *Haworthia laevis* Haw. is based on Commelin's Plate 7 and thus synonymous with *H. marginata*. Bayer (l.c.) showed some reservation in attributing this plate to *H.marginata*, because it is not very diagnostic. The inflorescence might well belong to another species, as it is from another source.
Notes on the plate. Commelin's plant was sterile. The figures of the inflorescence and capsule were adopted from the Witsen Codex. A drawing in the Africana Library in Johannesburg could be the original or a copy of it.
Introduction. Commelin did not specify the source of his plant, he had it for some years; it came from the Cape.

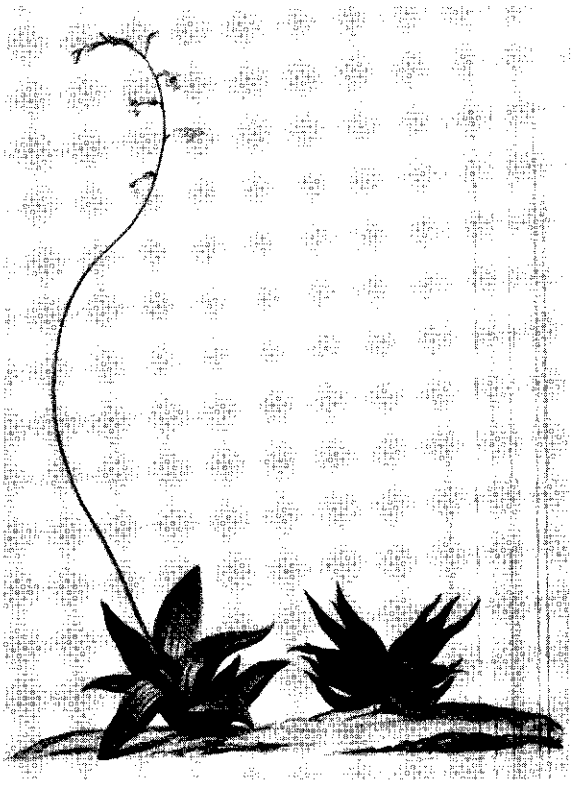


Haworthia marginata, Aloe glauca. Atlas 3 t.8

Haworthia minima (Ait.) Haw., Syn. Pl. Succ.: 92 (1812) [Pl.59]
Atlas. 7 t.47. No name.
Commelin. Prael. Bot.:43. *Aloe Africana margaritifera minima.*
Artist. Alida Withoos (1694).
Citations. *Aloe pumila* L. var. *margaritifera* L. γ 1753: 322, [Hort. Cliff.:131.6 γ, Dillen 1732:20].
Aloe margaritifera (L.) Burm.f. var. *minima* Ait. 1789,1: 468, Haw. 1804:12, Ker in Bot. Mag. 1811 t.1360.
Haworthia margaritifera (L.) Haw. var. *granata* (Willd.) Baker in J. Linn. Soc. 1880,18:204, Berger 1908:88.
Taxonomic notes. I assume that this water-colour represents the plant described but not pictured by Commelin (1703:43) as *Aloe Africana margaritifera minima.* In my opinion, it represents *Haworthia minima* (Ait.) Haw., a distinct species related to *H.margaritifera* and

H.marginata. The plate is well matched with specimens of *H.minima* in the comprehensive *Haworthia*-collection in the Karroo Botanic Garden at Worcester, curated by Mr M.B.Bayer.
As lectotype of *Aloe margaritifera* var. *minima* Ait. I propose Dillen 1732 t.16 f.18.
Distribution. South Africa: Cape.
Introduction ante 1694. Commelin did not specify the source of his plant.

Haworthia retusa (L.) Duval, Pl. Succ. Hort. Alenc.:7 (1809) [Pl.12]
Atlas. 3 t.7. *Aloe Africana brevissimo crassimoque folio, Flore sub viridi* (Oldenland no.4).
Commelin. Hort. Amst. 2:11 t.6. Idem.
Artist. Alida Withoos (1694).
Citations. *Aloe retusa* L. 1753:322, [Hort. Cliff.:132. 10, Hort. Ups.:87.6, V.Royen:24, ms LINN, Boerhaave 1719,2:130.22, Tilli 1723:6 t.5], Burm.f. 1768 P.F.C.: 10, Miller 1768 no.19, Lam. 1783:89, Willd. 1799: 192, DC. 1800:8 t.45, Haw. 1804:9, Huth.
Haworthia retusa (L.) Duval 1809:7 – Baker 1880: 208, Kraus 1893:115, Berger 1908:101, Janse & Uitewaal 1939 (with reproduction of the water-colour), Bayer 1976:3.
Taxonomic notes. No specimens are available for the typification of *Aloe retusa* L. As Commelin's plate is much better than Tilli's – the only other available element in the protologue – I prefer it as type. A difficulty is however that Linnaeus' diagnosis is based on the flowers. Commelin's plate can be identified by the vegetative part, hardly by the flowers. Moreover, the flowers are drawn from Witsen's Codex, not from the plant in Amsterdam.
In Hort. Cliff., the species of *Aloe* are defined by vegetative characters. In Sp. Pl., Linnaeus tried to define the *Aloe* species by the flowers, without a change in the systematic treatment adopted in Hort. Cliff., however. Essentially the taxa are defined as in Hort. Cliff. I therefore consider it best to have as type of *A.retusa* L. Commelin's plate, the drawing of the inflorescence excluded.
Notes on the plate. Although the same phrase name is used for the water-colour and the plate, and H.A.II:11 is cited in the ms annotation of the plate, the plate differs considerably from the water-colour. Tilli (l.c.) received his plant from Commelin. It flowered in Pisa as illustrated in his tab.5. This inflorescence differs considerably from the one shown by Commelin borrowed from the Witsen Codex. Commelin's inflorescence is much like the one shown by Tilli in tab.6 which represents *Aloe humilis* in a grotesque way. Commelin's inflorescence of it in Rar. & Exot. t.46 is much better. Tilli does not refer to this illustration.
Distribution. South Africa: Cape, Uniondale-, Willowmore-, Riversdale Districts.
Introduction ante 1699. Commelin gives no details on the introduction. He had it 'for several years' and describes the vegetative propagation from detached leaves in 1699. It did not flower in Amsterdam. The inflorescence and fruit are taken from the Codex Witsenii.



Haworthia venosa, Crassula perfoliata. Atlas 6 t.16

Haworthia venosa (Lam.) Haw., Revis. Pl. Succ.: 51 (1821)
Atlas. 6 t.16. *Aloe Africana humilis folio nonnihil reflexo. Floribus ex albo et rubro variegatis* (Oldenland no.25).
Commelin. Prael. Bot.:80 t.29. Idem.
Artist. Not signed (1701-1702).
Citations. Linnaeus never gave an interpretation of this plate.
Aloe venosa Lam. 1783:89, Baker 1880:211, Huth.
Aloe tricolor Haw. 1804:25.
Aloe recurva Haw. 1804:10 – Sims in Bot. Mag. 1811 t.1353.
Haworthia venosa (Lam.) Haw. 1821:44 & 51, Baker 1896:349, Berger 1908:99, Bayer 1976:3 & 166, Scott 1978:74-77.
Taxonomic notes. *Aloe venosa* Lam. is based entirely on Commelin's text and plate; Lamarck's text is a translation of Commelin's. There is no specimen in Lamarck's herbarium and he did not state having seen the species dried or alive. Commelin's Plate 29 thus is the type of *Aloe venosa* Lam. *Aloe tricolor* Haw. is a later homo-

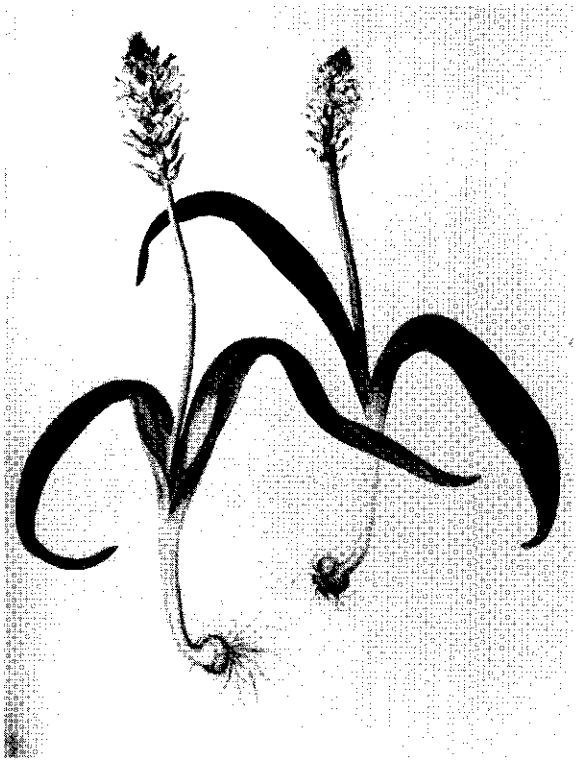
typic synonym, because Haworth knew this taxon from Commelin's plate only.
The correct application of the name *Aloe recurva* Haw. is uncertain, fide Scott (l.c.); its type is t.1353 in Bot. Mag.
Bayer (l.c.) placed *H.tessalata* Haw. in the synonymy of *H.venosa*, Scott (l.c.), however, maintained these names for two separate species.
Distribution. South Africa: Cape (Swellendam).
Introduction. This species was received in 1701 from the Cape, sent by W.A.van der Stel. No prior introduction is known.
Specimen seen. Bayer 168 (NBG).

Haworthia viscosa (L.) Haw., Syn. Pl. Succ.:90 (1812) [Pl.44]
Atlas. 6 t.14. *Aloe Africana erecta triangularis et triangulari folio viscosa* (Oldenland no.27).
Commelin. Prael. Bot.:82 t.31. Idem.
Artist. Jan Moninckx (1702).
Citations. *Aloe viscosa* L. 1753:322, [Hort. Cliff.:132.8, Hort. Ups.:87.8, ms LINN, Boerhaave 1719,2:131.32, Tilli 1723:7, Dillen 1732:16 t.13 f.13], Burm.f. 1768 P.F.C.:10, Mill. 1768 no.11, Willd. 1799:191, DC. 1799: 3 t.16, Haw. 1804:6, Bot. Mag. 1805 t.814, Huth.
Aloe triangularis Medic. 1783:61, Lam. 1783:89.
Haworthia viscosa (L.) Haw. 1812:90, Kraus 1893:115, Baker 1896:336, Bayer 1976:3, 167, Scott 1981:98 (with reproduction of the plate).
Taxonomic notes. No specimens are available for the typification of *Aloe viscosa* L. Of the illustrations published by Commelin, Tilli & Dillen, Commelin's Plate 31 was selected as lectotype by Scott (l.c.).
Aloe triangularis Medic. is a superfluous name for *Aloe viscosa* L.
Distribution. South Africa: Eastern Karroo, see Scott (l.c.) for a map.
Introduction. Plants were received from 'Africa' in 1701 and 1702, the first flowering was observed in 1702.
Specimen seen. Bayer 2131 (NBG).

Kniphofia uvaria (L.) Hook., Bot. Mag. t.4816 (1854) (quoad combinationem) [Pl.16]
Atlas. 3 t.14. *Aloe Africana folio triangulo longissimo & angustissimo, Floribus luteis foetidis* Hermanni Catal: Pag: 18 (Hermann 1687:18).
Iris Uvaria Promontorii bonae Spei. Stapel: in not: ad Theophrastum. 336 (Stapel 1644:336).
Commelin. Hort. Amst. 2:29 t.15. Idem, Hermann's name as caption, Stapel and Breyne 1689:74 as synonyms.
Artist. Jan Moninckx (1686-1700).
Citations. *Aloe uvaria* L. 1753:323, [Hort. Cliff.:133. 14, ms LINN, Boerhaave 1719,2:131.43, Tilli 1723:7, Seba 1732:29 t.19 f.3, Burman 1737:2, Fabricius 1763:12], Burm.f. 1768 P.F.C.:10, Miller 1768 no.23.
Aletris uvaria (L.) L. 1771:368, Petagna 1787:643.
Aloe longifolia Lam. 1783:90.
Kniphofia alooides Moench 1794:631 – Huth.
Veltheimia uvaria (L.) Willd. 1799:182.
Kniphofia uvaria (L.) Hook. 1854 t.4816, Codd 1968: 373 with reproduction of the plate on p.377.
Tritomanthe uvaria (L.) Link 1821:333 – Kraus 1893: 116.
Taxonomic notes. *Aloe uvaria* L. has been typified with H.S.C. 133.14 by Codd 1968:492. On this sheet also a leaf and an inflorescence of *Pontederia cordata* L. are mounted.
Aloe longifolia Lam. and *Kniphofia alooides* Moench are superfluous names based on the same type.
Distribution. South Africa: Cape Province.
Introduction ante 1687. *Kniphofia uvaria* is one of the first species introduced from the Cape. Stapel's reference to it in 1644, was probably based on a collection by Heurnius in 1624 (Codd 1968:373). Hermann had the species in Leiden (1678:18, 1689:306) and Kiggelaer (1690:5) in Simon van Beaumont's garden in The Hague. Also Breyne (1689:74, from Beverningk) and Mentzel (1696 t.13 f.5) knew the plant. The species was apparently wellknown in Holland around 1690. The plant cultivated in commerce and in collections under the name of *K.uvaria* is a complex hybrid, the parent species is rarely seen in cultivation.
Specimens seen. H.S.C. 133.14, lectotype (BM); Bos 977 (WAG); Bruce 222 (WAG).

Lachenalia orchioides (L.) Ait., Hort. Kew. 1: 460 (1789)
Atlas. 2 t.11. *Hyacinthus Africanus bifolius maculatus racemosus Flore Sulphureo, obsoleto.*
Dutch: Africaansche Duijfjes Hijacinth met twee Bladeren en Sulphurachtige Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Atlas. 8 t.58, left. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Atlas. 8 t.59. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. These water-colours were kindly identified by Miss W.F.Barker, Kirstenbosch.
Commelin's phrase for vol.2 t.11 is much like *Hyacinthus orchioides Africanus flore obsoleto major*, Breyne in Flora Capensis ed. Gunn & Du Plessis t.11. The editors identified Breyne's plant as *L.orchioides.*
Distribution. South Africa: Cape.
Specimens seen. Bos 318 and 419 (WAG).

Lachenalia pallida Aiton, Hort. Kew. 1:460 (1789)
Atlas. 8 t.58, right. No name.
Commelin. Not published by Commelin.



Lachenalia orchioides, Lachenalia pallida. Atlas 8 t.58

Ornithogalum thyrsoides, Ixia species. Atlas 8 t.55

Artist. Jan Moninckx (1686-1706).
Note. Miss F.W.Barker, Kirstenbosch, kindly identified this plant.
Distribution. South Africa.
Introduction ante 1707. Aiton attributed the introduction of this species to G.Wench in 1782. Commelin grew it some 90 years earlier.
Specimen seen. Goldblatt 2313 (WAG).

Lachenalia species.
Atlas. 8 t.60. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

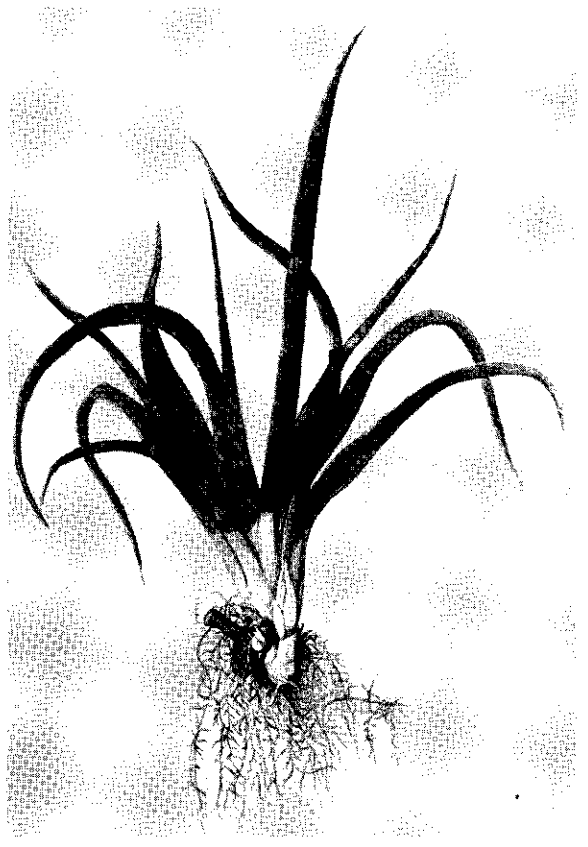
Ornithogalum thyrsoides Jacq., Hort. Vind. 3: 17 t.28 (1776)
Atlas. 8 t.55, left. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. South Africa: Cape.
Introduction. The Chinkerichee was introduced in 1605 according to Boom 1975:361, who based this date on Bot. Mag. 1809 t.1164, that refers to Clusius 1605. I cannot decide whether *Ornithogalum aethiopicum* Clusius is identical with *O.thyrsoides* Jacq. I found no trace of its cultivation in the Netherlands between Clusius and Commelin, so probably Commelin had it from a new introduction.

Specimens seen. Bos 720 (WAG); Magendans s.n., cult. (WAG); Bayliss 563 (WAG); Thunberg s.n. (SBT).
Icones. Mason 1972 t.6.

Sansevieria hyacinthoides (L.) Druce, Rep. Bot. Exch. Cl. Brit. Isles 1913,3:423 (1914) [Pl.17]
Atlas. 3 t.19. *Aloe Guineensis radice geniculata foliis e viridi & atro undulatim variegatis.*
Anonymos Guineensis Aloes foliis geminatis e viridi & atro undulatim variegatis, Floribus rubicundis Apocyni Floribus Lilii Convallium Dodarti simillimis. Kiggelarii Hort: Beaumont: Pag: 8 (Kiggelaer 1690:8).
Commelin. Hort. Amst. 2:39 t.20 & Prael. Bot. 84 t.33. Idem.
Artist. Jan Moninckx (1701-1702).
Citations. *Aloe hyacinthoides* L. *β guineensis* L. 1753: 321, [Hort. Cliff.:132.12 α, Boerhaave 1719,2:131.41, Fabricius 1763:10].
Aloe hyacinthoides L. [ms LINN].
Aletris hyacinthoides (L.) L. 1762:456, Burm.f. 1768 Fl. Ind.:83.
Aletris hyacinthoides (L.) L. *β guineensis* (L.) L. 1762: 456.
Aletris guineensis (L.) Jacq. 1770:36, Lam. 1783:79.
Sansevieria guineensis (L.) Willd. 1799:159, Kunth 1850:16, Huth, Brenan 1963:175.

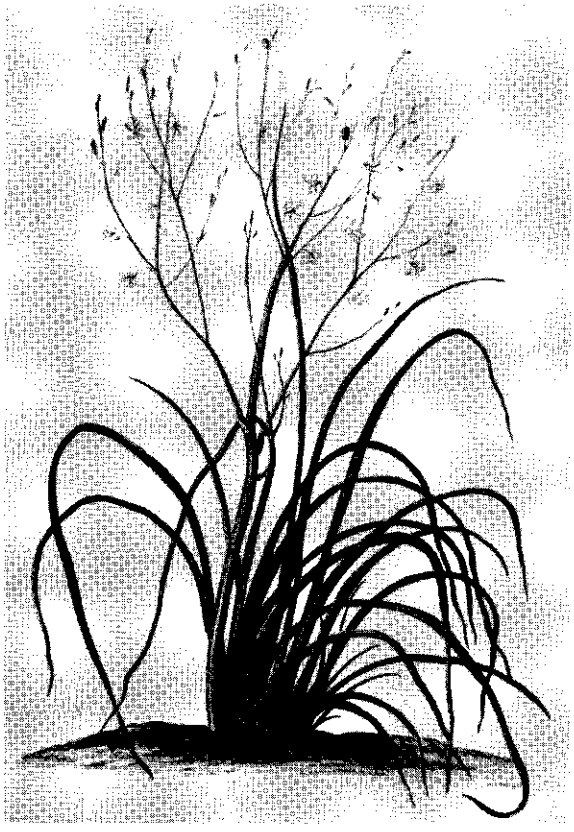
Map 1. Distribution of *Sansevieria hyacinthoides* (L.) Druce.

Sansevieria hyacinthoides (L.) Druce 1914:423 – Wijnands 1973:109-114, with reproduction of t.20 and of t.33.
Sanseverinia thyrsiflora Petagna, Inst. Bot. 1787,3:643.
Sansevieria thyrsiflora (Petagna) Thunberg, Prodr. Fl. Cap. 1794:65, Brown 1915:250.
Taxonomic notes. Commelin's Plate 33 is the lectotype of *Aloe hyacinthoides* L. and of its var. *guineensis* L., which is the type-variety (var. *hyacinthoides*). *Sansevieria hyacinthoides* (L.) Druce is the conserved type of *Sansevieria* Thunb.
See Wijnands (1973) for a detailed discussion.
Pleomele aloifolia Salisb. 1796:245 is a superfluous name automatically based on Commelin's Plate 33.
Note on the plates. Plate 20 of 1701 represents the same plant as Plate 33 of 1703, the water-colour 19 is the basis for the engraving of 1703, no original drawing has been preserved for t.20 of 1701. As the two published plates have been interpreted as representing the same species throughout the literature, I treat them together.
Distribution. South Africa: S.E.coast.
Introduction ante 1690. The species was cultivated by Simon van Beaumont before 1690. Van Beaumont assumed that the plant came from the West African coast. It must have been collected by a ship's captain who landed somewhere in the Albany or the Uitenhage district, an area at that time not yet colonised by the settlers at the Cape.
Commelin did not specify the source of his plant, but most likely it came from Simon van Beaumont's collection. The same species is probably represented in the Codex of the Duchess of Beaufort vol.1 t.2 f.3.
Specimens seen. Barnard 99B (PRE); Barbosa & Macuácua 8679 (MAP); Buitendag 415 (PRE, STE); Giffen 1204 (PRE); Jansen & de Koning 7363 (MAP); Mogg 28640 (MAP); Moll & Strey 3729 (PRE); Pienaar 5500 (PRE); Thode 4311 (STE); Thode 4310 (STE); White s.n. (PRE).



Sansevieria zeylanica. Atlas 3 t.20

Sansevieria zeylanica (L.) Willd., Sp. Pl. 2:159 (1799)
Atlas. 3 t.20. *Aloe Zeylanica pumila foliis variegatis.* Hermanni Parad: Batav: Prod: 306 (Hermann 1689: 306). *Aloe pumila Serpentaria Zeylanica.* Breynii Prod: Secund: 12 (Breyne 1689:12).
Commelin. Hort. Amst. 2:41 t.21. Idem.
Artist. Maria Moninckx (1686-1700).
Citations. *Aloe hyacinthoides* L. α *zeylanica* L. 1753: 321, [Hort. Cliff. 132.12 β, ms LINN, Boerhaave 1719, 2:131.42, Tilli 1723:7].
Aletris hyacinthoides (L.) L. α *zeylanica* (L.) L. 1762: 456, Burm.f. 1768 Fl. Ind.:83, Lam. 1783:79.
Sansevieria zeylanica (L.) Willd. 1799:159, Kunth 1850:18, Huth, Brown 1915:226, Wijnands 1973:109-114 with reproduction of the plate.
Sansvieria pumila Haw. 1812:67 – Salm-Dyck 1834: 243.
Sansevieria hyacinthoides (L.) Druce 1914:423 – Stearn 1961.
Taxonomic notes. Commelin's Plate 21 is the lectotype of *Aloe hyacinthoides* L. α *zeylanica* L., see Wijnands 1973 for a detailed discussion.
Distribution. Ceylon.



Trachyandra divaricata. Atlas 1 t.41

Introduction ante 1688. Commelin did not specify the source of his plant. Commelin noted that the species was known for some years already in Dutch gardens, but flowers had not been observed. Breyne (l.c.) recorded the species from the gardens of Fagel and Beverningk.

Trachyandra divaricata (Jacq.) Kunth, Enum. 4:580 (1843)
Atlas. 1 t.41. *Phalangium Aethiopicum, Ramosum Floribus albis, reflexis.*
Dutch: Getackt Phalangium, uijt Mooren-landt.
Commelin. Hort. Amst. 1:67 t.34. *Phalangium aethiopicum ramosum floribus albis, petalis reflexis.*
Dutch: Aethiopisch getakt phalangium met witte bloemen, en buytenwaarts omgeslagen bloembladeren.
Artist. Jan Moninckx (1690).
Citations. *Anthericum revolutum* L. 1753:310 – not cited in the protologue – Linn. 1763:app.1679 '?', [Tilli 1723:127], Willd. 1799:138, Huth, Baker in Fl. Cap. 1897,6:393.
Anthericum serotinum L. (this name was never published) ms LINN.
Anthericum divaricatum Jacq. 1804 – Adamson 1941: 94.
Trachyandra divaricata (Jacq.) Kunth 1843 – Obermeyer 1962:737.
Taxonomic notes. *Anthericum revolutum* is based on Tournefort 1700:343 *'Asphodelus foliis compressis asperis, caule patulo'*, as discussed by Adamson (l.c.). This can hardly be true as Linnaeus' diagnosis has *'scapo ramoso, corollis revolutis'*. No specimen of this taxon is present in the Linnean herbarium. The only source for this information I can imagine is Commelin's plate. This plate is, however, not cited in the protologue, and Adamson considered it to represent *A.divaricatum*, followed by Obermeyer.
Obermeyer designated Galpin 12898 as neotype of *A. revolutum*. This choice conserved the interpretation of *A.revolutum* in Adamson's sense. Earlier *A.revolutum* has been used for the species illustrated by Commelin: Thunberg 1794:62, Ker-Gawl. in Bot. Mag. 1805 t.1044, Baker 1897:393.
The argument for the decision to use *A.revolutum* for the slender species is that it has scabrid leaves and thus conforms better with Tournefort's *'foliis . . . asperis'* than the more robust *A.divaricatum* with glabrous leaves. Linnaeus' manuscript name *A.serotinum* indicates that Commelin's plate did not fit his concept of *A.revolutum* perfectly.
The type of *A.divaricatum* Jacq. is Hort. Schoenbr. 4: 7 t.414 (1804).
Distribution. South Africa: 'South western to south eastern Cape, common on sand and on dunes near the sea' (Obermeyer l.c.).
Introduction 1689. No earlier record of this species is known. Commelin received seeds from the Cape in 1689. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.18 f.3.
Specimens seen. Rogers 28052 (WAG); Bishop s.n. (SAM 27422); Zeyher 4237 (SAM). I have found no specimen in herb. Tournefort (microfiche) vouching for Tournefort's name.

Yucca aloifolia L., Sp. Pl.:319 (1753)
Atlas. 6 t.2. *Aloe Americana juccae foliis arborescens.*
Kiggelarii Catal: Beaumont: (Kiggelaer 1690:5).
Commelin. Prael. Bot.:42, 64 t.14. Idem.
Artist. Not signed (1702-1703).
Citations. *Yucca aloifolia* L. 1753:319, [Hort. Cliff.: 130.2 α, Dillen 1732:436], Willd. 1799:184, DC.1799 t.20 'male', Poiret 1808:825, Kunth 1843:270, Baker 1880:221, Huth, Trelease 1902:88.
Taxonomic notes. No specimen is available for the typification of *Y.aloifolia* L. A sheet with one leaf is in Van Royen's herbarium, L 90984-457, but it is not directly referred to in the protologue. Also the erect habit of the leaves, which was essential to Linnaeus, cannot be seen from the specimen. Another sheet with a single leaf is present in S-Linn. Dillen's Plate 323 f.416 of 1732 is proposed here as the lectotype. Dillen cited Hermann 1689:36, the source of Linnaeus'

'habitat in Vera Cruze'. Jamaica is also given by Linnaeus, based possibly on Sloane 1696:118-119.
Distribution. Carolina-Mexico, West Indies.
Introduction ante 1688. Commelin received his plant from Daniel des Marets in 1702. Kiggelaer records it in 1690 from Van Beaumont's garden. Plukenet 1694 t.256 f.4 provided the first illustration of this species. A plant in Fagel's garden is mentioned in Tournefort 1689:32. Hermann (1689:306) grew it in Leiden. It is common in cultivation presently.

Yucca aloifolia L. var. **draconis** (L.) Engelmann, Trans. Acad. St. Louis 3:35 (1873)
Atlas. 6 t.5. *Aloe Americana draconis folio serrato.*
Commelin. Prael. Bot.:42, 67 t.16. Idem.
Artist. Maria Moninckx (1700-1702).
Citations. *Yucca draconis* L. 1753:319, [Hort. Cliff.: 130.2 β, Hort. Ups.:88.2, V.Royen:22, Boerhaave 1719,2:129, Dillen 1732:437 t.324 f.417], Gaertn. 1791:34, Willd. 1799:184, Poiret 1808:825.
Yucca aloifolia L. var. *draconis* (L.) Engelm. – Trelease 1902:91, Kunth 1843:270.
Billbergia leopoldii (Lem.) Lind. – Huth.
Taxonomic notes. A new nomen specificum legitimum is provided for this species in Sp. Pl. No specimen is available in LINN or in H.S.C. There is a sheet in herb. Van Royen, L 908107-273, consisting of eight leaves only. As the diagnostic character *'foliis . . . nutantibus'* differentiates the species from *Y.aloifolia 'foliis . . . strictis'*, the habit of the plant is decisive, but it cannot be deduced from this specimen. I propose Dillen's Plate 324 f.416 as lectotype for *Yucca draconis* L. This taxon is best treated as a cultivar of *Yucca aloifolia* L.
Introduction ante 1691. The first record of the taxon in cultivation is Clusius 1605:48. Commelin grew his plant from seed that was sent by Bishop Henry Compton.

MALPIGHIACEAE

? Malpighia emarginata DC., Prod. 1:578 (1824)
Atlas. No water-colour is present in the atlas.
Commelin. Hort. Amst. 1:145 t.75. *Cerasus jamaicensis fructu tetrapyreno.*
Dutch: Kerseboom van Jamaica met vier-stenige vrugten.
Citations. *Malpighia glabra* L. 1753:425, [Hort. Cliff.: 169, Hort. Ups.:108, V.Royen:459, ms LINN, Boerhaave 1719,2:244, Sloane 1725:106], Miller 1768, Willd. 1799:732, Bot. Mag. 1805 t.813, Kraus 1893: 119, Huth.
Taxonomic notes. Commelin's Plate 75 is not diagnostic, it could represent many species, perhaps a *Malpighia* but this is not very probable.
Commelin's description may well reflect the Acerola or West-Indian Cherry. The main obstacle is *'fructu tetrapyreno'*, as this species has not more than three pyrenes (cf. Adams 1972:396, sub *Malpighia glabra*). *'Tetrapyreno'* is a common element in pre-Linnean phrase-names pertaining to this plant: Hermann 1689: 321, Kiggelaer 1690:12, Plukenet 1692 t.157 f.4, Sloane 1696:172 (*'polypyreno'*). These phrase-names have been cited throughout the pre-Linnean literature including Species Plantarum. Plukenet shows something like a fruit, but pyrenes cannot be distinguished. Commelin's plant is sterile, probably he took the description of the fruit from Hermann or Kiggelaer. His editors, Kiggelaer and Ruysch, describe the fruit as sour, adstringent and hardly edible, from their own experience. They knew the fruit and if they had found it to be not tetrapyrenous they would have said so, I presume.
The vernacular names 'scinmeraka' of Hermann 1689: 321 and 'simmeroucke' of Kiggelaer 1690 resemble much 'shimaruca', the name for *M.glabra* and its synonym *M.punicifolia* according to Arnoldo 1971:181-182.
The taxonomy of *Malpighia* will be treated monographically by J.L.Vivaldi. Dr Vivaldi (in litt., see also Asenjo 1980:343), is of the opinion that the correct name for the Acerola is *Malpighia emarginata* DC., *M. glabra* L. being a different, unpalatable, species.
Caspar Commelin used to refer to J.Commelin's work when commenting on Merian's plates but on t.7 of Merian (1705), which is *Malpighia emarginata*, he did not comment at all. If he thought Merian's plant to be identical with *Cerasus Jamaicensis fructu tetrapyreno*, he probably would have made some comment to that effect. This strengthens the doubt whether the two are the same.
I use the name *Malpighia emarginata* as the caption for the present discussion only because of the historical connection between the plate and this taxon.
Distribution. West-Indies.
Introduction ante 1688. Commelin gave no information on the origin of his plant except *'Jamaicensis'* in his name for it, which differs from *'Curassavica'* as Kiggelaer and Hermann have it. The editors comment: it grows copiously on Barbados, from where it was sent to Holland; it also grows wild in Curaçao from where it was sent to Surinam.

MALVACEAE

Abelmoschus esculentus (L.) Moench, Meth. Pl.:617 (1794)
Atlas. 2 t.4. *Alcea Americana annua, Flore albo, maximo, Fructu maximo Pyramidali sulcato.*
Dutch: Eenjarig Americaans Signaarts-Kruijd, met een witte groote Bloem, en seer groote Pijramids-wijse en geveurde Vrugt.
Commelin. Hort. Amst. 1:37 t.19. Idem.
Artist. Jan Moninckx (1686).

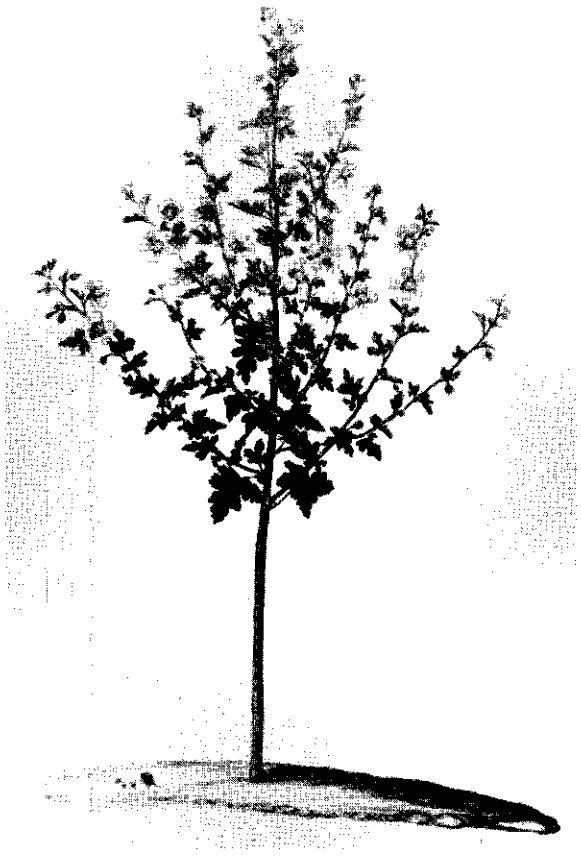
Abelmoschus esculentus. Atlas 2 t.4

Citations. *Hibiscus esculentus* L. 1753:696, [ms LINN, Commelin 1701:152, Ray 1704:518, Commelin in Merian 1705:t.37, Boerhaave 1719,1:272.16, Tilli 1723:91], Burm.f. 1768 Fl. Ind.:153, Aublet 1775: 707, Willd. 1800:3, Huth, Oltenau 1933:67. *Abelmoschus esculentus* (L.) Moench 1794:617 – Siemonsma 1982, reproduction of the water-colour as frontispiece.
Taxonomic notes. Linnaeus provided an original nomen specificum legitimum for this species in Sp. Pl.; *'esculentus 15'* (LINN 875.31) was designated as lectotype by Van Borssum Waalkes 1966:100.
Distribution. The origin of Okra is unknown. It is not an American plant as Commelin thought. Possibly it reached Surinam from West Africa where the young fruits are used as a vegetable.
A wild precursor of Okra could be the Indian *A. tuberculatus* Pal & Singh (cf. Arora & Singh 1973:90).
Introduction. Commelin's plant was grown in 1686 from seed received from Surinam as 'Okkoro'. Hermann (1689:308) grew in Leiden *'Altaea Brasiliana humilis annua, fructu maximo pyramidali sulcato'*, probably the same species.

Abelmoschus esculentus (L.) Moench, Meth. Pl.: 617 (1794) [Pl.29]
Atlas. 4 t.24. *Ketmia Americana annua Flore albo fructu non sulcato longissimo.*
Commelin. Hort. Amst. 2:151 t.76. Idem.
Artist. Jan Moninckx (1696).
Citations. This plate has hardly been cited in the literature; Linnaeus annotated it in his copy as *Hibiscus esculentus.* Ray 1704:518 cited it.
Taxonomic notes. Caspar Commelin differentiated this plant from the one shown in 1697 t.19 by its longer, not (rather less) sulcate fruits. The differences between the two plants are within the variability of the species. He gave an elaborate discussion on the genera *Althaea, Malva, Ketmia* and *Abutilon,* as treated by Dioscorides, Plinius, Theophrastus, Camerarius, Clusius, Lobel, Avicenna, Morison, Breyne, Ray and Tournefort. He concluded that *Ketmia* is the best name for it.
Introduction. The plant was grown from seed in 1696, given by Jacob Schot, 'Schepen en Raad' of Amsterdam as 'Spanish Gingamboa', presently Quingombo (Span.), Quiabeiro (Port.), Gombo (Fr.).

Abelmoschus moschatus Medicus, Malv.:46 (1787) [Pl.34]
Atlas. 4 t.25. *Ketmia Americana urens annua Flore luteo, fructu Pyramidali sulcato.*
Commelin. Hort. Amst. 2:153 t.77. Idem.
Artist. Alida Withoos (1694).
Citations. No interpretations of this plate are known to me.
Taxonomic notes. *Hibiscus abelmoschus* L. 1753:696 is the basis of *A. moschatus.* Linnaeus' name is typified by a specimen in the Hortus Siccus Cliffortianus:349 by Van Borssum Waalkes 1966:92.
Distribution. India, Indo-Chinese Peninsula, South China, Malesia and the Pacific Islands (Borssum l.c.).
Introduction. Marcgraf described and illustrated the plant in 1648 t.45. Cornut (1635) recorded the species in cultivation at Paris. Commelin received seed 'ex America'.
Specimens seen. Voorhoeve 132 (WAG); De Bruijn 1095 (WAG).

Anisodontea capensis (L.) Bates, Gent. Herb. 10:327 (1969)
Atlas. 8 t.22. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. The complicated synonymy and typification of this species is discussed by Bates (l.c.). As type of *Malva capensis* L. 1753:688 he designated a specimen in the Clifford herbarium of which a photo is provided by Bates 1969:232.
Distribution. South Africa: Cape Province, a map provides Bates 1969:251.



Anisodontea capensis. Atlas 8 t.22

Introduction ante 1706. Bates (1969:218, 327) gave a name in Boerhaave 1710:114 as the earliest record of the species: *Malva, africana, frutescens, folio grossulariae, flore rubro.* Maria Moninckx' plate probably was prepared some years earlier.

Anisodontea reflexa (J.Wendland) Bates, Gent. Herb. 10:359 (1969)
Atlas. 8 t.52. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. The water-colour represents one of the many plants called *'Malvastrum bryoniifolium'*, until Bates monographed the genus *Anisodontea.* From the taxa he described the plate seems to match *A.reflexa* best: a multiflowered inflorescence, apically oblique-bilobed, reflexed, narrow petals and a dark magenta spot at the basis of the petals agree in combination with this species only. The leaves do not exactly match those in the drawing provided by Bates.
The type is Wendland, Hort. Herrenhusanus 1 t.4 1798.
Distribution. South Africa: Cape Province.
Introduction ante 1706. Bates could not trace any record of *A.reflexa* before its description from a cultivated plant in Herrenhausen in 1798. If my identification is correct, the date of introduction is about 90 years earlier.
I do not know whether the species is in cultivation at present.

Anisodontea scabrosa (L.) Bates, Gent. Herb. 10:368 (1969) [Pl.31]
Atlas. 4 t.36. *Malva africana frutescens, flore rubro.*
Commelin. Hort. Amst. 2:171 t.86. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Malva capensis* L. γ, 1753:688, [Hort. Ups.: 201.5, ms LINN, Dillen 1732:209].
Malva capensis γ scabrosa L. 1763:968.
Malva scabrosa L., Centuria II Pl.1756:27, Burm.f. 1768 P.F.C.:20, Miller 1768 no.14.
Malva fragrans Jacq. 1776:20 – Willd. 1800:782, Huth.
Malva glutinosa Desr. in Lam. 1792:747.
Malva viscosa Salisb. 1796:328 (nom. superfl.).
Taxonomic notes. Bates discussed the typification of *M.capensis* and *M.scabrosa* extensively. *M.capensis* is based on the entry in Hort. Cliff. and is typified by a specimen in the Clifford Herbarium. See also the discussion on Atlas 8 t.22, *Anisodontea capensis.*
The typification of *M.scabrosa* could be considered by *'scabrosa'* LINN 870.9, but this would make *M.scabrosa* a synonym of *M.capensis.* Bates chose Commelin's plate as the lectotype.
The typifications are correct in my opinion, they changed however the established use of these names: *'Malvastrum capense'* was commonly used for *A.scabrosa,* and *'Malvastrum divaricatum'* for *A.capensis.*
Distribution. South Africa: Cape Province.
Introduction 1672-1700. *A.scabrosa* was the earliest known species of *Anisodontea.* Bates (1969:217-218) mentions specimens of it collected by Hermann in 1672 at the Cape (herb. Sloane 75:16), Oldenland (herb. Sloane 156:93) and Kiggelaer (herb. Sloane 215: 61). I do not know if Kiggelaer's plant is from Simon van Beaumont's garden or from the Cape.
Volckamer 1700:273 is the first record of the species in cultivation, Volckamer received seed from Sherard, so it might have been cultivated in England earlier.
Possibly Hermann collected seeds at the Cape in 1672, but I cannot identify it in the catalogues of the Leiden Hortus.
Commelin does not give any information on the source of this plant.
Specimen seen. Wijnands 923 (WAG).

Hibiscus cannabinus L., Syst. Nat. ed. 10:1149 (1759)
Atlas. 2 t.3. *Alcea Bengalensis Spinosissima acetosae sapore, Flore luteo-pallido, Umbone purpurascente.* an

Hibiscus cannabinus. Atlas 2 t.3

Narinam Poulli Hort: Mal: Tom: VI.75 (Reede 6:75). Dutch: Doornagtigste Signaarts-Kruijd van Bengala, met een Zuringagtige Smaak, Bleekgele Bloem, en een Purpur-verwige Schild.
Commelin. Hort. Amst. 1:35 t.18. Idem.
Artist. Jan Moninckx (1688).
Citations. *Hibiscus sabdariffa* L. δ 1753:695, [Fl. Zeyl.: 264, ms LINN, Boerhaave 1719,1:272, Tilli 1723:91]. *Hibiscus cannabinus* L. 1759:1149, Burm.f. 1768 Fl. Ind.:152, Aublet 1775:707, Willd. 1800:822, Huth, Van Borssum Waalkes 1966:63-4.
Taxonomic notes. The typification of both *H.sabdariffa* and *H.cannabinus* is problematic. LINN 875.27 *'sabdariffa* 11' belongs to *H.cannabinus* as understood at present. No specimens of *H.sabdariffa* could be found vouching for the cited entries in Hort. Cliff., Fl. Zeyl. and Van Royen. I must leave the typification of *H. sabdariffa* unsettled, as did Van Borssum Waalkes. Commelin's plate was suggested as lectotype of *H.cannabinus* by Van Borssum Waalkes. It is difficult to decide whether Commelin's plate represents either *H. cannabinus* or *H.radiatus* Cav. The gland on the calyx, typical for *H.cannabinus,* cannot be discerned on the plate, because, when present, it is hidden by the indumentum in living or dried specimens. In the water-colour the presence of a gland may be surmised. The painting shows a silver-grey colouring on the calyx-lobes that can only be interpreted as an indumentum (which is present in *H.cannabinus* but absent in *H.radiatus*). The epicalyx segments in the plate are almost free, not fused as Van Borssum Waalkes describes for *H.cannabinus.* Bates (1965:83) on the other hand allows for free epicalyx segments in *H.cannabinus.* In conclusion I accept the plate for *H.cannabinus* and follow Van Borssum Waalkes' suggestion to designate it as lectotype since it is the best element available. The circumstance that Linnaeus added a detailed new description when he published *H.cannabinus* points to new material having become available to him. There is, however, no post-1753 specimen in LINN. No useful purpose is served by any further postponement of the typification of *Hibiscus cannabinus* L.
Narinam-poulli Reede 6 t.44, cited by Commelin, is part of *H.sabdariffa* L. γ. This designation is cited in the synonymy of *H.surattensis* L. by Van Borssum Waalkes 1966:58.
Distribution. Widespread in tropical and subtropical regions of the world. An origin in Africa, possibly Angola, has been suggested (Bates 1965: 83).
Introduction 1688. The plant was grown from seed, sent by Van Reede tot Drakensteyn in 1688.
Specimens seen. Van der Ben 499 (WAG); Kotschy 450.a (WAG); Retzius s.n., anno 1777 (S); Dinter 7549 (S); a specimen in the Linnean herbarium Stockholm; Wijnands 592, culta (WAG).

Hibiscus sabdariffa L., Sp. Pl.:695 (1753)

Atlas. 8 t.33. No name. [Pl.61]
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. Van Borssum Waalkes (1966:64) discussed the typification of this name.
Distribution. Cultivated in all tropical regions, not known as a wild plant. Pursglove (1968,2:370) assumes it is a West African species, known in Brasil already in the 17th century.
Introduction ante 1707. Maria Moninckx's drawing is the first record of this species in cultivation in Europe.
Specimen seen. Van Eijnatten 1159 (WAG).

Lavatera trimestris L., Sp. Pl.:692 (1753)

Atlas. 8 t.23. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Taxonomic note. Linnaeus based this species on Hort. Ups. in the first place. The specimen '*trimestris* 8' LINN 871.11 is not annotated 'HU', yet I consider it to be the type.
Distribution. Mediterranean region.
Introduction. Clusius 1601:XXIII provided the first description of this species, based on herbarium material. Boom (1975:81) gives 1601 incorrectly as the year of introduction in cultivation, based on Clusius.
Specimens seen. LINN 871.11, lectotype; Ruisch 4640, culta (WAG).

Sida acuta Burm.f. ssp. **carpinifolia** (L.f.) Borss., Blumea 14:188 (1966)
Atlas. 2 t.1. *Alcea Carpini Folio Americana Frutescens, Flosculis Luteis, Semine duplici, rostro donato.*
Dutch: Americaansch Signaarts-Kruijd, met Bladeren van Haag-beuken, geele Bloemen, en twee-bekkige Zaaden.
Commelin. Hort. Amst. 1:3 t.2. Idem, except for some orthographic variants in the Dutch name and *'Alchea'* on the plate, which is corrected in the Errata.
Artist. Jan Moninckx (1686-1690).
Citations. *Sida spinosa* L. 1753:683, [Hort. Cliff.:346.3, Fl. Zeyl. no.254, Hort. Ups.:199.4, V.Royen 1740:349, ms LINN], Burm.f. 1768 Fl. Ind.:146, P.F.C.:20, Aublet 1775:703, Willd. 1800:736, Huth, Stearn 1961:LI.
Taxonomic notes. Van Borssum Waalkes (1966:191) selected LINN 866.1 as lectotype of *Sida spinosa* L. Commelin's plate is a paratype of this name but it does not belong to this species. *Sida carpinifolia* L.f., Suppl. Pl. 1782:307 is based probably on a Mason collection from Madeira in J.E.Smith's herbarium (LINN) as discussed by Van Borssum Waalkes (1966:189).
Distribution. Tropical America and Africa.
Introduction. Commelin gives no information on the source of his plant.

MELIACEAE

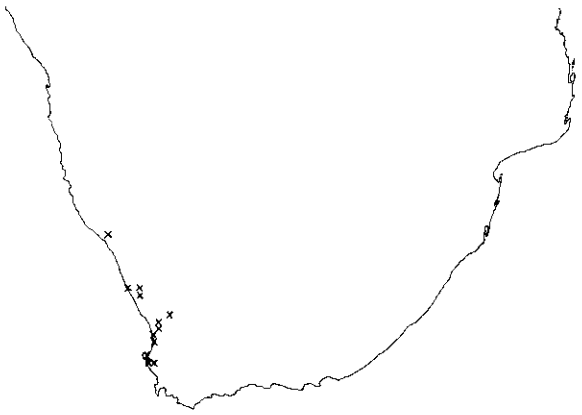
Melia azedarach L., Sp. Pl.:385 (1753)
Atlas. 2 t.16. *Azadirachta Indica Foliis ramosis minoribus, Flore albo, subcoeruleo Purpurascente majore.*
Breijn: Prod. II.21 (Breyne 1689:21).
Dutch: Indiaansche Azadirach, met kleene getackte Bladeren, en uijt den witte blaauw-paersverwige groote Bloemen.
Commelin. Hort. Amst. 1:147 t.76. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Melia azedarach* β *sempervirens* L. 1753:385. *Melia azedarach* L., [Hort. Cliff.:161.1 α, ms LINN, Boerhaave 1719,2:236, Burm. 1737:40], Burm.f. 1768 Fl. Ind.:101, Willd. 1799:558.
Melia sempervirens (L.) Lam. 1785:341, Sweet 1818: 94, Huth.
Melia commelinii Medic. ex Steudel, Nom. ed. 2, 1848: 118, an illegitimate name cited in synonymy.

Melia azedarach. Atlas 2 t.16

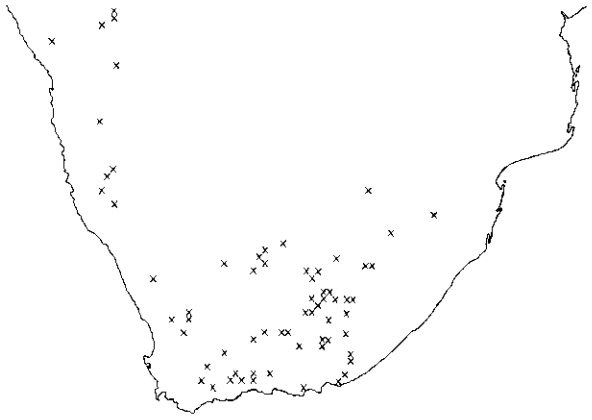
Taxonomic notes. *Melia azedarach* L. is based mainly on Fl. Zeyl. no.162 probably to be typified with a specimen in Herb. Hermann, BM. The specimen H.S.C. 161.1 α is a good match to Commelin's plate. I propose it as lectotype of *'sempervirens'*.
M.azedarach var. *sempervirens* is a synonym of var. *azedarach.*
Distribution. S.W.Asia.
Introduction ante 1687. Commelin received seeds from Ceylon. Hermann (1687:652, 1689:316) grew the species in Leiden. Breyne (1679:6) knew the species from a specimen received in 1670.
Specimens seen. H.S.C.161.1 (BM); Leeuwenberg 2239 (WAG); Camacho Durán 248 (WAG); Breteler 4551 (WAG); LINN 543.1; Wild 1254 (MAP).

MELIANTHACEAE

Melianthus comosus Vahl, Symb. 3:86 (1794) [Pl.47]
Atlas. 6 t.20. *Melianthus Africanus minor foetidus.*



Map 2. Distribution of *Melianthus elongatus* Wijnands.



Map 3. Distribution of *Melianthus comosus* Vahl.

Commelin. Rar. & Exot.:4 t.4. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Melianthus minor* L. 1753:639, [Hort. Cliff.: 493.2, V.Royen:402.2, ms LINN, Boerhaave 1719,1: 300.2, Tilli 1723:111], Burm.f. 1768 P.F.C.:17, Curtis 1801 Bot. Mag. 9 t.301, Kraus 1893.
Melianthus comosus Vahl 1794:86, Willd. 1800:403, Sweet 1827, Loudon 1830:242, Huth.
Taxonomic notes. The nomen specificum legitimum for *Melianthus minor* in Sp. Pl. is derived from Hort. Cliff. and Van Royen. No vouching specimen is available in H.S.C.; there is a specimen in herb. Van Royen, but it has no clear link with Adriaen van Royen's Prodromus and was probably added to the herbarium by David. Moreover, it is sterile and cannot be identified with certainty, although the indumentum points to *M. comosus.* The specimen LINN 818.3 is not annotated with the number 2 of the species in Sp. Pl., so that I prefer not to regard it as a suitable lectotype. This specimen belongs to *M.comosus* Vahl. The only element left for typification is Commelin's Plate 4, which I therefore propose as the lectotype of *Melianthus minor* L., it is in agreement with Linnaeus' diagnosis and was annotated by him as *Melianthus minor.*
Commelin's Plate 4 does not represent *M.minor* as nowadays understood, but *M.comosus* Vahl. The available evidence does not contain any cogent proof that Linnaeus knew the plant nowadays named *M.minor,* which name is used at present in the sense of Vahl, not of Linnaeus. With the exception of Burman f. (l.c.) *M. minor* L. has been consistently used with the implicite exclusion of the type. The substitution of *M.comosus* Vahl by *M.minor* L. would be most inconvenient, so that the name *M.minor* L. will be proposed for rejection. If this proposal will be accepted, no name is available for *M.minor* auct. I therefore propose:

Melianthus elongatus Wijnands, *spec. nov.*
Frutex, Meliantho pectinato Harvey affinis. Folia pinnata usque ad 15 cm longa, stipulis binis distinctis, rachide alata; foliola 5-13, anguste elliptica, serrata, indumento stellato-piloso facie superiore praecipue nervis, facie inferiore stellato-tomentosa. Racemi axillares erecti elongati, usque ad 25 cm longi; flores oppositae vel verticillatae; bracteae cordatae, acuminatae; pedicelli usque ad 25 mm longi. Calyx viridis, lobus inferior ceteris minor. Petala rubra, usque ad 20 mm longa. Nectarium cupulatum haud profundum, lobulis patentibus. Fructus quadrangularis obtuse angulatus, lignescens, pubescens; loculi 4-ovulati.
Typus: Goldblatt 2329, South Africa, Cape Province: Olifants Kop, Langebaan, Saldanha Bay district – granite hill.
Holotype WAG, isotype MO.

The lectotype of *Melianthus comosus* Vahl, so designated here, is a cultivated specimen from the Hortus Botanicus in Rome, preserved in C. Another specimen cited by Vahl, from Dahl's herbarium, has not been found. *Melianthus* is not represented in the Forskål herbarium, which was studied by Vahl also.
Distribution. Southern Africa: South Africa and Namibia.
Introduction. Commelin gave no information on the source of his plant. *M.comosus* could have been collected in the Calvinia or Montagu district, the localities nearest to Cape Town.
Plukenet 1696:246 mentioned a plant from the collection of Uvedale. Morison 1699 t.518 published the first illustration of the species.
Specimens seen. *Melianthus comosus:* LINN 818.3 & 4; Balsinhas 3339 (PRE); Burchell 1691 (L); Coppejans 982 (WAG); Dahlstrand 2345 (PRE); Foley 77 (PRE); Hanekom 1436 (WAG) and 1831 (PRE); Lam & Meeuse 4559 (L); Marloth 1917 (L); Martin 700 (NBG); Merxmüller & Giess 28174 (WAG); Michell 20 (PRE); Werdermann & Oberdieck 620 (WAG).
Melianthus elongatus: Acocks 14848 (PRE); Andreae

458 (PRE); Barker 6356 (BOL); Barker 7400 (NBG); Bolus 12645 (BOL); Boucher 2781 (PRE); Botha & Coetzee 1686 (PRE); Van Breda 4344 (PRE); Henrici 2121 (PRE); Goldblatt 2329 (WAG); Lavis 20230 (BOL); Leighton 574 (PRE) and 20648 (BOL, PRE); Leipoldt s.n. (BOL); Lewis 63548 (PRE) and 66030 (PRE); MacKenzie 25362 (BOL); Marloth 5202 (PRE) and 10187 (PRE); Marsh 181 (PRE); v.d.Merwe 230 (PRE); Pearson 6596 (BOL); Pillans 6974 (BOL) and 17967 (PRE); Schlechter 8176 (PRE), 8071 (BOL, PRE) and 807 (L); Theron 1290 (PRE); Thompson & le Roux 124 (PRE); Thunberg s.n. (UPS-Thunb. 14661).

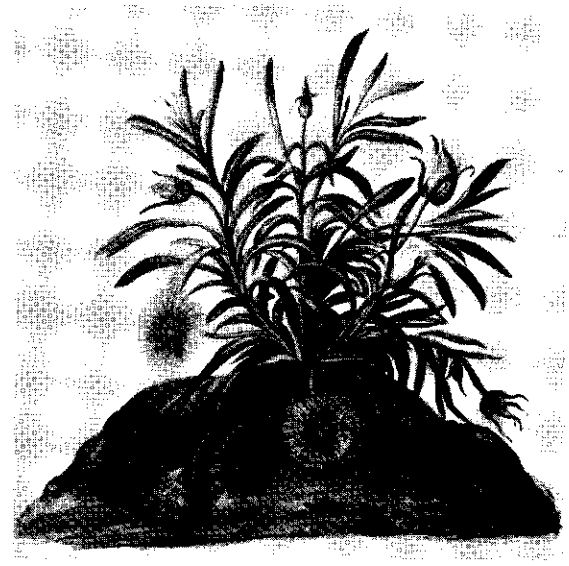
MESEMBRYANTHEMACEAE

Volume 7 of the atlas contains 32 water-colours of *Mesembryanthemaceae* representing 36 species. None of these has been published. The first 21 plates, t.9-29, have manuscript names taken from J.J.Dillen's Hortus Elthamensis of 1732 as 'Hort. Eltham. Tab. . . Fig. . .' They are arranged in the order of Dillen, those not matched with Dillen's plants by the unknown compiler of the atlas (Burman?) follow the named ones, t.30-41. From this situation I deduce that vol.7 was compiled in 1732 or later, at least 25 years after the paintings were done. Some of Commelin's original names for them may be included in Tilli's catalogue of the Hortus of Pisa (1723), where Tilli acknowledged Commelin for these plants. Petiver (1699:58) mentioned *Ficoides Africana folio crasso muricato (Lampranthus deltoides ?)* from Uvedal's garden at Enfield, who had it from Caspar Commelin. Breyne (1689) mentioned several Mesembryanthemums from the Hortus Medicus in 1688.

Aridaria noctiflora (L.) Schwantes
Atlas. 7 t.23. Name: *Mesembryanthemum Noctiflorum, flore intus candido, extus phoeniceo, odoratissimo.* Dillen: 273 t.206 f.262, a syntype of *M.noctiflorum* L. 1753:481.
Artist. Jan Moninckx.

Aridaria noctiflora (L.) Schwantes
Atlas. 7 t.24. Name: *Mesembryanthemum Noctiflorum, flore intus candido, extus stramineo, odoratissimo.* Dillen:274 t.206 f.263, the basis for *M.noctiflorum* L. β 1753:481 = *Aridaria straminea* (Willd.) Schwantes, a synonym of *A.noctiflora.*
Artist. Maria Moninckx.

Carpanthea pomeridiana (L.) N.E.Br.
Atlas. 7 t.32. No name, not in Dillen fide Burkart 1957, and Schmidt 1965.
Artist. Jan Moninckx.
Icones. Herre 1971:101.



Carpanthea pomeridiana. Atlas 7 t.32

Carruanthus ringens (L.) Boom
Atlas. 7 t.12. Name: *Mesembryanthemum rictum caninum referens.* Dillen: 241 t.188 f.231, a syntype of *M.ringens (α) caninum* L. 1753:487.
Artist. Jan Moninckx.
Note. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.42 f.2.

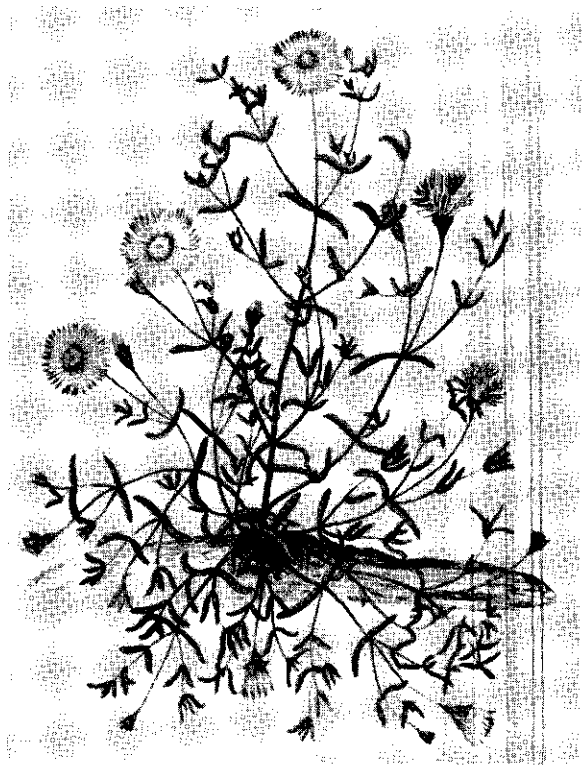
Cephalophyllum cf. **diversiphyllum** (Haw.) N.E. Br.
Atlas. 7 t.19. Name: *Mesembryanthemum foliis corniculatis brevioribus.* Dillen:261 t.198 f.252, cited for *M.loreum* L. β 1753:487 and *M.corniculatum* L. β 1762:676, cf. Schmidt 1965:94.
Artist. Jan Moninckx.

Dorotheanthus bellidiformis (Burm.f.) N.E. Br. [Pl.58]
Atlas. 7 t.33. No name, not in Dillen fide Burkart 1957.
Artist. Jan Moninckx.
Note. The butterfly *Vanessa atalanta* (L.) is shown also in the water-colour.
Icones. Herre 1971:139.
Specimen seen. Boom 22934 (WAHO).

Drosanthemum hispidum (L.) Schwantes
Atlas. 7 t.28. Name: *Mesembryanthemum pilosum micans flore saturater purpureo.* Dillen: 289 t.277 f.278, a syntype of *M.hispidum* L. 1753:482.
Artist. Jan Moninckx.

Drosanthemum micans (L.) Schwantes
Atlas. 7 t.13, right. Name: *(Mesembryanthemum)*

Acrodon bellidifolium, Drosanthemum micans. Atlas 7 t.13



Drosanthemum splendens. Atlas 7 t.22

Micans, flore phoeniceo, filamentis atris. Dillen:291 t.215 f.282, a syntype of *M.micans* L. 1753:485.
Artist. Jan Moninckx.

Drosanthemum splendens L. Bolus
Atlas. 7 t.22. Name: *Mesembryanthemum tenuifolium fruticescens flore croceo.* Dillen:267 t.202 f.258, a syntype of *M.bicolor* L. 1753:485, *Lampranthus bicolor* (L.) N.E.Br. presently.
Artist. Maria Moninckx.
Note. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.41 f.1.

Erepsia anceps (Haw.) Schwantes
Atlas. 7 t.38. No name, not in Dillen fide Burkart 1957.
Artist. Maria Moninckx.

Erepsia species
Atlas. 7 t.37. No name.
Artist. Maria Moninckx.

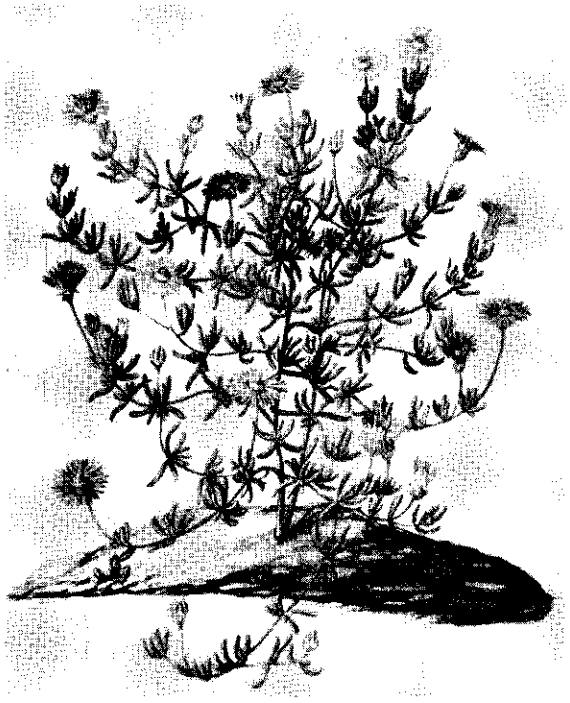
Faucaria felina (Weston) Schwantes
Atlas. 7 t.11, left. Name: *(Mesembryanthemum) Rictum felinum repraesentans.* Dillen:240 t.187 f.230, cited for *M.ringens β felinum* L. 1753:487.
Artist. Jan Moninckx.

? Glottiphyllum species
Atlas. 7 t.31. No name, not in Dillen.
Artist. Jan Moninckx.

? Hereroa species
Atlas. 7 t.16, left. No name, not in Dillen.
Artist. Jan Moninckx.

Lampranthus amoenus (Salm-Dyck ex DC.) N.E.Br.
Atlas. 7 t.29. Name: *Mesembryanthemum Pilosum micans, flore purpureo striato.* Dillen:291 t.215 f.281, cited for *M.hispidum* L. γ 1753:483. Presently this is *Drosanthemum striatum* (Haw.) Schwantes fide Burkart 1957.
Artist. Jan Moninckx.
Specimen seen. Boom 41327 (WAHO).
Icones. Salm-Dyck, Monogr. Gen. Aloes Mesembr. (1837).

Lampranthus deltoides (L.) Glen
Atlas. 7 t.18. Name: *Mesembryanthemum deltoides, et dorso et lateribus muricatis, majus.* Dillen:254 t.195 f.245, not cited by Linné in the protologue, et:256 t. 196 f.247, the basis for *M.deltoides* L. β 1753:482.
Artist. Jan Moninckx.
Note. The same species is probably represented in the



Lampranthus amoenus. Atlas 7 t.29

Codex of the Duchess of Beaufort 1 t.35 f.1.
Specimen seen. Boom 37882 (WAHO).

Lampranthus glaucus (L.) N.E.Br. ssp. **aureus** (L.) Glen
Atlas. 7 t.34. No name, not in Dillen fide Burkart 1957.
Artist. Jan Moninckx.
Icones. Curtis Bot. Mag. t.262.
Specimen seen. Boom 36646 (WAHO).

Lampranthus glaucus (L.) N.E.Br. ssp. **glaucus**
Atlas. 7 t.40. No name, in Dillen:756 t.196 f.248 *'Mesembryanthemum scabrum, flore sulphureo convexo'*, a syntype of *M.glaucum* L. 1753:486.
Artist. Maria Moninckx.

? Lampranthus scaber (L.) N.E.Br.
Atlas. 7 t.27. Name: *Mesembryanthemum Frutescens flore purpureo rariore.* Dillen:278 t.209 f.267 & 268, a syntype of *M.stipulaceum* L. 1753:484, *Lampranthus stipulaceus* (L.) N.E.Br. presently. *L.scaber* is represented by Dillen t.197 f.259.
Artist. Maria Moninckx.
Specimens seen. Boom 37878 and 37857 (WAHO).

? Lampranthus spectabilis (Haw.) N.E.Br.
Atlas. 7 t.25. Name: *Mesembryanthemum Frutescens radice ingenti tuberosa.* Dillen:275 t.207 f.264, a syntype of *M.tuberosum* L. 1753:484, presently *Mestoklema tuberosa* (L.) N.E.Br.
Artist. Jan Moninckx.
Icones. Curtis Bot. Mag. t.396.

? Lampranthus stipulaceus (L.) N.E.Br.
Atlas. 7 t.39. No name. Dillen:278 t.209 f.267, see *Lampranthus scaber.*
Artist. Maria Moninckx.

Lampranthus tenuifolius (L.) N.E.Br.
Atlas. 7 t.20. Name: *Mesembryanthemum Tenuifolium procumbens flore coccineo.* Dillen:266 t.201 f.256, a paratype of *M.tenuifolium* L. 1753:484. This is one of the few mesems represented by a specimen in the Linnean collections: H.S.C. 220.
Artist. Jan Moninckx.
Introduction. Hermann (1687:252) *Ficus aizoides Africana minor, folio tereti* may well be the first record of this species.

Machairophyllum ? albidum (L.) Schwantes
Atlas. 7 t.15, right. No name. Dillen:244 t.189 f.232 *Mesembryanthemum foliis robustis albicantibus* is a syntype of *M.albidum* L. 1762:699.
Artist. Jan Moninckx.

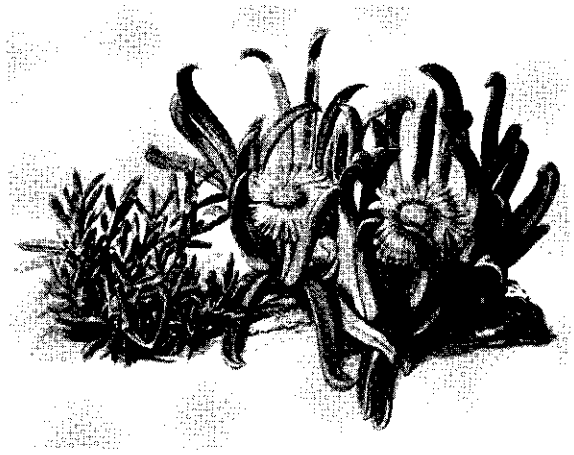
Pleiospilos bolusii (Hook.f.) N.E.Br.
Atlas. 7 t.11, right. Name: *Mesembryanthemum Folio scalprato.* Dillen:235 t.183 f.224, a syntype of *M. linguiforme* L. 1753:488, presently *Glottiphyllum linguiforme* (L.) N.E.Br.
Artist. Jan Moninckx.

Prenia pallens (Ait.) N.E.Br.
Atlas. 7 t.35. No name, not in Dillen.
Artist. Jan Moninckx.

? Psilocaulon species
Atlas. 7 t.36. No name, not in Dillen.
Artist. Jan Moninckx.

Rhombophyllum dolabriforme (L.) Schwantes
Atlas. 7 t.16, right. Name: *Mesembryanthemum folio dolabriformi.* Dillen:248 t.191 f.237, a syntype of *M. dolabriforme* L. 1753:487.
Artist. Jan Moninckx.
Note. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.42 f.3.
Specimen seen. Wijnands 857, culta (WAG).

Ruschia umbellata (L.) Schwantes
Atlas. 7 t.26. Name: *Mesembryanthemum frutescens, floribus albis umbellatis.* Dillen:276 t.208 f.266, a syntype of *M.umbellatum* L. 1753:481.
Artist. Jan Moninckx.



Trichodiadema stellatum, Machairophyllum albidum. Atlas 7 t.15

Saphesia flaccida (Jacq.) N.E.Br.
Atlas. 7 t.30. No name, not in Dillen.
Artist. Jan Moninckx.

Sceletium tortuosum (L.) N.E.Br.
Atlas. 7 t.10. Name: *Mesembryanthemum Tortuosum, foliis sempervivi congestis.* Dillen:233 t.181 f.222, cited *M.tortuosum* L. β 1753:487, *Sceletium tortuosum* presently.
Artist. Maria Moninckx.
Notes. The yellow-white flowers point to *S.tortuosum*, but the use of much silver paint on the leaves gives the pellucid aspect of *S.anatomicum* (Haw.) L.Bolus.
The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.42 f.1.

Skiatophytum tripolium (L.) L.Bolus.
Atlas. 7 t.9. Name: *Mesembryanthemum Tripolii folio, flore argenteo.* Dillen:230 t.179 f.220, a syntype of *M. tripolium* L. 1753:481.
Artist. Jan Moninckx.

Sphalmanthus cf. **defoliatus** (Haw.) L.Bolus
Atlas. 7 t.41. No name, not in Dillen.
Artist. Maria Moninckx.

Trichodiadema barbartum (L.) Schwantes
Atlas. 7 t.14. Name: *Mesembryanthemum radiatum, ramulis prolixis recumbentibus.* Dillen:245 t.190 f.234, a syntype of *M.barbatum* L. 1753:482, presently *Trichodiadema barbatum* (L.) Schwantes.
Artist. Maria Moninckx.
Note. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.38 f.1 & t.36 f.3.

Trichodiadema stellatum (Mill.) Schwantes
Atlas. 7 t.15, left. Name: *Mesembryanthemum radiatum humile, foliis minoribus.* Dillen:246 t.190 f.235, the basis for *M.barbatum* L. β 1753:482, presently *Triochodiadema stellatum.*
Artist. Jan Moninckx.
Note. The same species is probably represented in the Codex of the Duchess of Beaufort 1 t.44 f.3.

Two water-colours have remained unidentified:

Atlas. 7 t.17. Name: *Mesembryanthemum serratum flore acetabuli-formi luteo.* Dillen:249 t.192 f.238, cited for *M.serratum* L. 1753:485, presently *Erepsia serrata* (L.) L.Bolus.
Artist. Maria Moninckx.

Atlas. 7 t.21. Name: *Mesembryanthemum crassifolium repens, flore purpureo.* Dillen:266 t.201 f.257, a syntype of *M.crassifolium* L. 1753:484, presently *Disphyma crassifolium* (L.) L.Bolus.
Artist. Maria Moninckx.

MIMOSACEAE

Acacia cornigera (L.) Willd., Sp. Pl. ed.4,4(2); 1080 (1806) [Pl.37]
Atlas. 5 t.25. *Acasiae Similis, Spinis Corniformibus Mexiocana.*
Commelin. Hort. Amst. 1:209 t.107. Idem, but *'Acaciae'.* Breyn. Prod. 2 (Breyne 1689:4).
Dutch: Mexicaansche Acacia gelykende boom, met hoornswyse doornen.
Artist. Maria Moninckx (1686-1690).
Citations. *Mimosa cornigera* L. 1753:520, as *'Mexicana'*, [Hort. Cliff.:208.4, ms LINN, Boerhaave 1719,2:56], Lam 1783:18, Ross 1980:107 (with reproduction of the plate).
Acacia cornigera (L.) Willd. 1806:1080, DC. 1825:460 *(A.cornigera α Americana)*, Kraus 1893:120, Huth.
Taxonomic notes. The nomen specificum legitimum for *Mimosa cornigera* is taken from Hort. Cliff.:208.4 and Van Royen:470. No Van Royen specimen has been found in Leiden. H.S.C. 208.4 was designated as lectotype by Rudd (1964:200).
The water-colour shows the elongated inflorescence typical of *A.cornigera* (*A.sphaerocephala* Cham. & Schl. is often confused with it but has a round capitate inflorescence); it is absent in the plate.
The species is generally known by its heterotypic synonym *Acacia spadicigera* Schiede ex Chamisso & Schlechtendal in Linnaea 5:594 (1830).
Distribution. Mexico and Costa Rica, naturalised in the West Indies.
Introduction ante 1688. The first report is from Caspar Fagel's garden in Noordwijkerhout in 1688 (Breyne 1689:4-6). According to Breyne, Fagel received seed from Mexico and Cuba. Commelin's seed came from Cuba, it might have been from the same batch or an independent introduction. This would mean that *A.*

cornigera was naturalised on Cuba already in the 17th century.
Plukenet 1692 t.122 f.1 illustrated a sterile branch from a plant cultivated at Hampton Court.
The species is still in cultivation at present (Zander 1980, specimens seen in K and WAG).
Specimens seen. H.S.C. 208.4, lectotype (BM); LINN 1228.22 '26'; Dwyer 11025 (WAG); Van Veldhuizen 145, cult. (WAG).

'Acacia' species ?

Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:205 t.105. *Acacia javanica sulcata, caule et foliorum costis spinosus.* Cat.: Hort.: Beaumont: (Kiggelaer 1690:2).
Durii-Spinge ricat. Javan.
Dutch: Geveurde Javaansche Acacia, wiens stamme en ribben der bladeren met doornen beset zijn.
Durii-Spinge ricat in 't Javaans.
Citations. *Acacia intsia* Willd. 1806:1091 – Huth.
Taxonomic notes. I have not been able to identify the plate with any mimosoid species from Java. Durii-Spinge ricat could not be traced as a plant name. Huth's identification as *Acacia intsia* is incorrect.
Introduction ante 1690. The plant was grown from seed, received from Java.

Mimosa casta L., Sp. Pl.:518 (1753)

Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:55 t.28. *Aeschynomene spinosa latifolia sive Herba viva, vel mimosa latifolia, pilosa et subrotunda folio.*
Dutch: Breet-bladerig, doornachtig, gevoelig of schaamachtig kruyd.
Citations. *Mimosa casta* L. 1753:518, [Hort. Cliff.: 208.2 α, Hort. Ups.:145.2, ms LINN, Boerhaave 1719, 2:55], Burm.f. 1768 Fl. Ind.:222, Lam. 1783:15, Persoon 1797:955, Willd. 1806:1029, Ait.f. 1813:455, Sweet 1818:222, DC. 1825,2:429, Huth.
Taxonomic notes. A new nomen specificum legitimum is provided for this species in Sp. Pl. and an observation is appended; a specimen in LINN would, therefore, be the obvious type. There is, however, no such specimen. A good specimen is available in H.S.C. 208.2: I designate it as lectotype. Commelin's plate is the only alternative.
Distribution. Panama to Brazil, Guadeloupe to Trinidad (Adams 1972:339).
Introduction 1691. Commelin grew this plant from seed of unknown origin in 1691. The plant died the same year.
Specimens seen. H.S.C. 208.2, lectotype (BM); Broadway 3177 (U); Wagner 1313 (U).

Mimosa pigra L., Cent. I. Pl.:13 (1755)

Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:59 t.30. *Aeschynomene spinosa quinta, seu foliolis acaciae latioribus, frondibus longissimos aculeos habentibus.* Breyn. Cent. 1 (Breyne 1678 t.20).
Dutch: Vijfde doornagtig, levend-kruyd, of levend-kruyd met brede bladeren van acacia, welkers lof seer lange doorntjes heeft.
Citations. *Mimosa pigra* L. 1755:13, 1762:1507 '?', Lam. 1783:21, Ross 1975:117.
Mimosa asperata L. 1759:1312 – Linn. 1771:503, Persoon 1797:958, Willd. 1806:1035.
Mimosa asperata L. var. *pigra* (L.) Huth.
Taxonomic notes. No authentic specimen of *M.pigra* is available, Commelin's plate was designated as lectotype by Brenan 1959:43.
M.asperata L. is typified by LINN 1228.32.
This species has been known for as long as *M.asperata* L. Commelin's plate is not cited in the protologue of *M.asperata* in Syst. Nat. ed.10 and cited only with a query in Sp. Pl. ed.2. Linnaeus did not annotate the plate in his copy at all. Commelin's plate is possibly not the actual basis of Linnaeus' concept of *M.pigra*, but I accept Brenan's typification as it is a taxonomically sensible way to typify the name. Breyne's Plate t.20 in the Centuria Prima is a paratype.
Distribution. Tropical America and Africa, Madagascar and Mauritius (Ross l.c.).
Introduction ante 1690. Commelin does not give any information on the source or habitat of his plant. In the text he notes not to have seen the plant in flower. The drawing must have been made after 1691.
Specimens seen. LINN 1228.32, type of *M.asperata* L.; Rodin 9171 (K); Breteler 1157 & 4208 (WAG); Dwyer 11328 (WAG); Barbosa & De Lemos 7999 (MAP).

Mimosa species

Atlas. 2 t.7. *Aeschynomene spinosa Flore globoso, albido, siliculis articulatis, echinatis.*
Dutch: Doornachtig, Gevoelig-Kruijd, met Bolwijse en witte Bloemen, en kleine stekelige in leden verdeelde Peultjens.
Commelin. Hort. Amst. 1:57 t.29. Idem.
Artist. Jan Moninckx (1690).
Citations. *Mimosa pudica* L. 1753:518, [Hort. Cliff.: 208.3, Hort. Ups.:144.1, ms LINN, Boerhaave 1719,2: 55.2], Aublet 1775:994, Persoon 1797:955, Willd. 1806:1031, DC. 1825:429.
Taxonomic notes. A new nomen specificum legitimum is provided in Sp. Pl. and an observation is added, indicating that Linnaeus had a specimen at hand when he wrote the entry for *Mimosa pudica.* There is, however, no specimen available in LINN that qualifies as a type. Therefore, I accept Brenan's (1959:46) designation of a Clifford specimen, H.S.C. 208.3, as lectotype. Commelin's t.29 most likely does not represent *Mimosa pudica*, I cannot identify the plate.
Introduction (? ante) 1690. Commelin's plant was grown from American seed in 1690.

Neptunia plena (L.) Benth., Journ. Bot. 4:355 (1841)
Atlas. 2 t.8. *Aeschynomene mitis prima.*
Dutch: Eerste sacht en Doorn-loos Schaam-achtig of Levend-Kruijd.
Commelin. Hort. Amst. 1:61 t.31. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Mimosa curassavica* [ms LINN, unpublished name].
Mimosa punctata L. 1759:1311, Lam. 1783:11.
Desmanthus punctatus (L.) Willd. 1806:1047, Sweet 1818:222, Huth.
Mimosa plena L. 1753:519 – Lam. 1783:10.
Taxonomic notes. Kostermans in Dassanayake 1980: 462 designated as type of *M.plena*, a specimen in LINN 'Vera Cruz'. I have seen no such specimen. As type I consider LINN 1228.12.
As type of *M.punctata* is available LINN 1228.14, a specimen of Patrick Browne, available to Linnaeus in 1758.
Distribution. Coastal regions of tropical America.
Introduction ante 1690. The plant may have been grown from seed sent from Curaçao as 'Wilde Duyve-Bonen'. Breyne (1678 t.18) gave an earlier illustration of this species.
Specimens seen. Groenendijk 205 (WAG); Bolding 5193 (U); Mennega 6404, cult. (U).

Parkia javanica (Lam.) Merrill, Species Blancoanae:169 (1918)
? = **Parkia roxburghii** G.Don, Gen. Syst. 2:397 (1832)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:207 t.106. *Acacia javanica non spinosa, foliis maximis splendentibus* (Cat. Hort. Beaum.) (Kiggelaer 1690).
Dutch: Doornloose Javaansche Acacia, met seer groote en blinkende bladeren.
Citations. No ms annotation in LINN.
Gleditsia javanica Lam., Encycl. Meth. 1788,2(2):466.
Calliandra houstonii Benth. (= *C.inermis* (L.) Druce) – Huth.
Taxonomic notes. Commelin's name is taken from Kiggelaer's Catalogus, without reference to it. The same name was used by Plukenet 1691 t.23 f.3. All three sources are cited by Ray 1704:477 no.29, who repeats Commelin's description.
Linnaeus took up the name from Plukenet in Syst. Nat. ed. 10(2), 1759:1311 no.23, for *Gleditsia inermis.*
Lamarck recognised the protologue as a mixture of four different species. For the Kaduwang he published a new name *Gleditsia javanica.*
Linnaeus' *inermis* was combined as *Calliandra inermis* (L.) Druce, the correct name for *Calliandra houstonii* Benth.
Merrill (l.c.) considered *Gleditsia javanica* Lam. to be the same as *Parkia roxburghii* G.Don and made the necessary combination. Backer & Bakhuizen v.d.Brink 1965:564 do not accept Merrill's view however and keep up *P.roxburghii.* Hagos 1962:264 also accepts *P. roxburghii* but he is sympathetic to Merrill's view.
Kaduwang of Commelin or Cadawang of Plukenet is close to Kedawoeng, given by Heyne (1927:724) as local name for *Parkia biglobosa* auct. non Benth. = *P. roxburghii* G.Don. Compared with material of *P.roxburghii* the number of pinnae is very different, the plate has 3-5, the plants have 15-30. It is, however, possible that juvenile plants have fewer pinnae, in Commelin's plant the first leaf has three, the youngest five. The pubescence of the shoots in the specimens is not indicated in the plate. The seeds agree well in the marked inframarginal suture, but the hilum in the plate is larger than in the material seen. The number of leaflets agrees well, I would not know another *Mimosaceae* from Java with so many. The form of the leaflets differs, the specimens have asymmetrically acute tops, the plate indicates that only vaguely.
In all, a decision may be possible on juvenile plants, presently it is certain that Commelin's plate belongs to *Gleditsia javanica* Lam. If this is a nomen ambiguum or the same as *Parkia roxburghii* I cannot decide.
As no specimen is present in Lamarck's herbarium and his description can well be based on the plate, Commelin Hort. Amst. 1:207 t.106 is proposed as lectotype of *Gleditsia javanica* Lam.
Distribution. Java?
Introduction 1688. Seeds were sent from Batavia by Andreas Cleijer in 1688. Possibly Van Beaumont received seeds from the same batch or plants from Commelin.
Specimen seen. Herb. Boschb. proefstation JA 793, fr. (WAG).

Pithecellobium species
Atlas. 2 t.31. *Acacia Americana siliquis teretibus Ventricosis, Floribus albis.* Parad: Bat: Prod. 303 (Hermann 1689:303).
Dutch: Americaansche Acacia, met ronde uijt puijlende Peulen, en witte Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).

MORACEAE

Ficus benghalensis L., Sp. Pl.:1059 (1753)
Atlas. 5 t.12. *Ficus Benghalensis, folio subrotundo, fructu orbiculato.* Cat. Hort. Beaum. (Kiggelaer 1690).
Commelin. Hort. Amst. 1:119 t.62. Idem, and Pipal Benghalensibus.
Dutch: Bengaalse vyge-boom, met ronde vruchten en rondachtige bladeren.
Artist. Maria Moninckx (1686-1690).
Citations. *Ficus benghalensis* L. 1753:1060, [Hort. Cliff.:471.4, Amoen. Ac. 1:29.10, V.Royen:212.4, ms

Ficus benghalensis. Atlas 5 t.12

LINN, Ray 1704:15, Boerhaave 1719,2:258], Burm.f. 1768 Fl. Ind.:225, Miller 1768, Lam. 1788:494, Vahl 1804:187, Willd. 1806:1135, Buch.-Ham. 1822:488, Huth.

Taxonomic notes. Linnaeus based *Ficus benghalensis* on Hort. Cliff., Van Royen and Amoen. Ac. 1:29. No specimens have been found that vouch for these references, except for Van Royen's sheet L 908186-1441 which is related to Adriaen van Royen's Prodromus. The specimen consists of a single leaf. No specimen of *Ficus benghalensis* is preserved in the Linnean herbaria in London and Stockholm; LINN 1240.8 could typify *F. indica* L., but not *F. benghalensis.*

The remaining elements in the Linnean protologue are Commelin's Plate 62 and Reede's Peralu, Hort. Mal. 1: 49 t.28. Since Linnaeus derived his epithet from Commelin and since he cited t.62 in all his publications on this taxon, I consider Commelin's Plate 62 as a suitable lectotype of *Ficus benghalensis,* in preference to Reede's plate and Van Royen's specimen.

Commelin gave 'Pipal' as the vernacular name of his plant. Buchanan-Hamilton (l.c.) claimed that 'Pipala' is the Hindu name for *Ficus religiosa* L.

Distribution. India.

Introduction ante 1691. Commelin received his plant from Reede who sent it from 'Bengale'. Reede visited Bengal in 1686 (Regt in Nieuw Nederlands Biographisch Woordenboek 3:1011).

Ficus benghalensis was one of the first tropical plants known in Europe. It was described by Theophrastus, based on reports from Alexander's invasion of India (326-325 BC) as συκῆ ἡ ινδικη, 'Indian Fig' (Stearn 1977).

Specimens seen. Gillis 7610, culta (S); Leeuwenberg s.n. (WAG); Mueller-Dombois c.s. 690316101 (L); herb. Van Royen (L 908186-1441, paratype, -1442, -1451); herb. Wight 2727 (L, S); W.de Wilde c.s. 5659 (WAG); Soegeng 128 (L).

MORINGACEAE

Moringa oleifera Lam., Enc. Meth. 1:398 (1785)

Atlas. 2 t.29. *Nux Been Zeylanica siliqua triangula, Seminibus alatis.* Herm: Cat: App. 692 (Hermann 1687:692).

Balanus Myrepsia siliqua triangulari, Semine minore alato. Breijn: Prod: 2.22 (Breyne 1689:22). Katu-Muringha Zeijonensibus.

Mouringou, & Muringo. Hort: Mal: Tom: VI. 19. (Reede 6:19 t.11.1686).

Dutch: Moringo van Acosta.

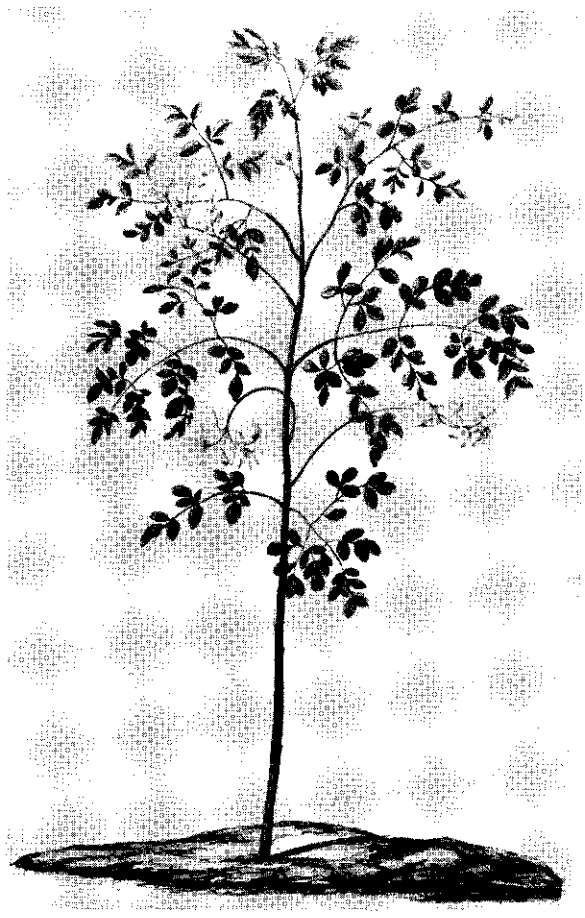
Commelin. Hort. Amst. 1:219 t.112. *Nux been ceylanica, siliqua triangula, seminibus alatis.* Par. Bat. Prodr. (Hermann 1689:357).

Artist. Jan Moninckx (1688-1689).

Citations. *Guilandina moringa* L. 1753:381, not cited in the protologue, [Fl. Zeyl.:67.155 ms LINN, Burm. 1737:164], Jacq. 1789,2:371, 1795(3):3.

Moringa pterygosperma Gaertn. 1791:314 – Huth.

Taxonomic notes. *Moringa oleifera* Lam. is in my opinion a nomen novum for *Guilandina moringa* L., therefore it is automatically typified by the type of Linnaeus' name. Linnaeus based his species mainly on his Flora Zeylanica no.155. Two specimens are available in Hermann's herbarium (BM), vol.2:24 and vol.3:49. I consider the first to be the lectotype. Bullock 1960: 44 wrote that *Guilandina moringa* is based on Reede's plate, I consider it a paratype. Vidal 1962:5 designated as type Burman 18 in Herb. Delessert, G. I can see no direct relation between this specimen and the protologue. Linnaeus might have seen it when he worked with Burman in Amsterdam, but I do not consider it as qualifying for typification. My conclusions are in full agreement with those of Keraudren & Gillet 1963:317-18. *Moringa pterygosperma* Gaertn. 1791:314 is a superfluous name. I regard it also as a nomen novum – Lin-



Moringa oleifera. Atlas 2 t.29

naeus is cited as Syst. Veg. 396 – with the same type.
Distribution. Indomalaysia.
Introduction ante 1686. Commelin gives no source of his plant. It flowered in 1688 and 1689, as was confirmed by Breyne 1689:46. Commelin died in January 1692, he says the tree died after five years. So he must have had it in 1686. In his annotations to Reede 1686: 20 Commelin does not mention the tree as cultivated in Amsterdam. The plant may have come from Ceylon. This species was grown as a medicinal plant, cf. Commelin 1724:83.
Specimens seen. Hermann vol.2:24, lectotype, and 3: 49 (BM); Curtiss 122 (K); W.de Wilde c.s. 4892 (WAG); Westphal 9076 (WAG); Westphal-Stevels 10248, 10250, culta (WAG).

MYRICACEAE

Myrica quercifolia L., Sp. Pl.:1025 (1753)

Atlas. 4 t.31. *Laurus Africana minor quercifolio.*
Commelin. Hort. Amst. 2:161 t.81. Idem.
Artist. Jan Moninckx (1698-1700).
Citations. *Myrica quercifolia* L. 1753:1025, [Hort. Cliff.:456.3, V.Royen:527.3, ms LINN, Ray 1704: 85, Boerhaave 1719,2:216.11], Burm.f. 1768 P.F.C.: 31 ('27'), Miller 1768, Lam. 1786:593, Willd. 1806: 748, Huth, Kraus 1893:117.
Taxonomic notes. The nomen specificum legitimum for *Myrica quercifolia* in Sp. Pl. is taken from Hort. Cliff. The corresponding specimen H.S.C. 456.3 is a good match to Commelin's plate. Killick (1969:9) however designated LINN 1169.6 as lectotype. This specimen has no annotation with the number 4 of the species in Sp. Pl. so possibly was not in the herbarium in 1753. The specimen 1169.5 in LINN is annotated '4'. I prefer the Clifford specimen as the type. The epithet is taken from Commelin.
Distribution. South Africa: between Malmesbury and the mouth of the Kei River (Killick 1969:11).
Introduction 1698. Commelin received the plant in 1698 from Gerbrand Pancras. Seeds were received from the Cape also.
Specimens seen. H.S.C. 456.3, lectotype (BM); LINN 1169.5; Goldblatt 1462 (WAG); Wijnands 890 (WAG).

Myrica quercifolia L., Sp. Pl.:1025 (1753)

Atlas. 5 t.26. *Laurus Africana Minor querci Folio.*
Commelin. Not published by Commelin. This species is represented also in the atlas Vol.4 t.31, used for publication in Hort. Amst. 2:161 t.81.
Artist. Jan Moninckx (1686-1706).
Note on the plate. Linnaeus did not know the species in flower as observed by Richter 1835 no.7413. Moninckx' water-colour proves that flowers had been produced in Europe.

MYRSINACEAE

Myrsina africana L., Sp. Pl.:196 (1753)

Atlas. 5 t.13. *Vitis Idaea Aethiopica, Myrti tarentinae Folio. Flore Atropurpureo.*
Commelin. Hort. Amst. 1:123 t.64. Idem.
Dutch: Morelandsche Kraak-besien met bladeren van myrtus tarentina, en swart purpurverwige bloemen.
Artist. Maria Moninckx (1691).
Citations. *Myrsine africana* L. 1753:196, [Hort. Cliff.: 72, ms LINN], Bergius 1767:53, Burm.f. 1768 P.F.C.: 6, Willd. 1797:1121, Ait.f. 1811:25, Sweet 1818:224, DC. 1844:93 'ic. pessim.', Kraus 1893:1116, Huth, Mez 1911:341.
Taxonomic notes. Dyer (1963:5) designated LINN 267.1 as lectotype of *Myrsine africana* L.
Distribution. Widely distributed in Africa and Asia.
Introduction ante 1690. Commelin received seeds of this plant from Simon van der Stel, who sent them from the Cape. The plant flowered in 1691.
Specimens seen. H.S.C. 72 (BM); LINN 267.1; Jansen 7196 (WAG); Werdermann & Oberdieck 1580 (WAG).

? Rapanea melanophleos (L.) Mez in Engler, Pflanzenreich IV.236:375 (1902)
Atlas. 5 t.23. *Laurifolia Africana.*
Dutch: Africaans laurier-bladerig gewas.
Commelin. Hort. Amst. 1:195 t.100. Idem.
Artist. Maria Moninckx (1686-1690).
Citations. *Sideroxylon melanophleos* L., Mantissa 1767: 48, Willd. 1797:1089.
Sideroxylon mite L., Syst. ed. 12:178 'confer'.
Sideroxylon laurifolium Lam. 1783:244.
Myrsine melanophleos (L.) R.Br. – Huth.
Taxonomic notes. Alphonse De Candolle (1844,8:97) excluded Commelin's plate 'quia omnino obscurum' from *Myrsine melanophleos.* Mez (1902:375) excluded it from *Sideroxylon laurifolium* Lam. as well.
The plate is very poor, I cannot identify it. The local name under which Commelin received the plant 'Swarte Bast' is like 'Swartbas', the present name for *Diospyros whyteana* (Hiern) F.White. The plate is a better match for this species than for *Rapanea melanophleos* (L.) Mez, which has a much denser nervation of the leaves (Goldblatt & Gentry 1492, WAG). However, seedlings of *Rapanea melanophleos* in the nursery at Kirstenbosch showed an acceptable likeness to Commelin's plate.
Sideroxylon laurifolium Lam. is not based on Commelin, although the epithet is derived from *'Laurifolia Africana'.*
S.melanophleos L. is based on information and specimens sent by Van Royen. LINN 261.3 most likely is the holotype. Also *S.mite* L. is based on information of Van Royen, no material is available in LINN that can be linked with Van Royen. Verdcourt (Kew Bull. 21:243) designated LINN 261.2 as the lectotype of *S.mite* L. This specimen represents *Ilex mitis* (L.) Radlk..
Distribution. South Africa.
Introduction. Commelin received the plant from the Cape.

MYRTACEAE

? Eugenia uniflora L., Sp. Pl.:470 (1753)
Atlas. 2 t.23. *Arbor Brasiliana Myrti Laureae foliis inodoris.*
Dutch: Brasiliaansche Boom, met reuckloose Laurierige Mijrte-bladeren.
Commelin. Hort. Amst. 1:173 t.89. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Myrtus brasiliana* L. 1753:471, [Hort. Cliff.: 489.8, ms LINN, Boerhaave 1719,2:216.12].
Eugenia brasiliana (L.) Aublet 1775:511.
Eugenia michelii Lam. 1789:203 – Huth.
Plinia rubra L. 1771:243 – Richter 1835:484.
Eugenia myrtifolia Salisb. 1796:353 (nom. superfl.).
Eugenia uniflora L. 1753:470 – Urban 1895:138.
Taxonomic notes. I do not know with certainty which species is shown in the water-colour or the engraving. Commelin stipulated that the leaves have no scent; all leaves of *Eugenia uniflora* that I met with scented typically like *Myrtaceae.*
Commelin expressed doubt whether or not his plant was the same as Hermann's plant from Ceylon (Hermann 1687:435-436). Commelin's editors, Kiggelaer & Ruysch, even denied their identity (Commelin 1697: 174).
The caption *'Eugenia uniflora'* for this discussion is based mainly on the role played by this plate in the history of taxonomy. It is a paratype of *Myrtus brasiliana* L. The type is LINN 637.5 '2 *brasiliana* ex Horto Ultrajectina Wachendorf', a fragment from which the diagnosis in Sp. Pl. may well have been derived.
All names for which Commelin's plate has been cited belong in the synonymy of *Eugenia uniflora* L., according to Urban (l.c.).
The entry 489.8 in Hortus Cliffortianus, where Linnaeus cited Commelin, is *Myrtus zeylanica* L. in Sp. Pl. At present this taxon is named *Syzygium zeylanicum* (L.) DC.
Hermann's plant, the one discussed by Commelin and his editors, belongs here. It has a much stronger scent than *Eugenia uniflora* L., which in comparison may be described as inodorous.
As Commelin's Plate 89 shows a plant that in general habit resembles *Eugenia uniflora,* I tenatively identify it as such.
The lectotype of *Eugenia uniflora* L. is Micheli, Nov. pl. gen. 1729:226 t.108, designated by McVaugh 1956.
Distribution. West Indies – Brazil.
Introduction. Commelin received his plant from Jeronimus Nunis d'Acosta, resident of the King of Portugal, from Brazil. D'Acosta lived in Holland as Ambassador of Portugal.

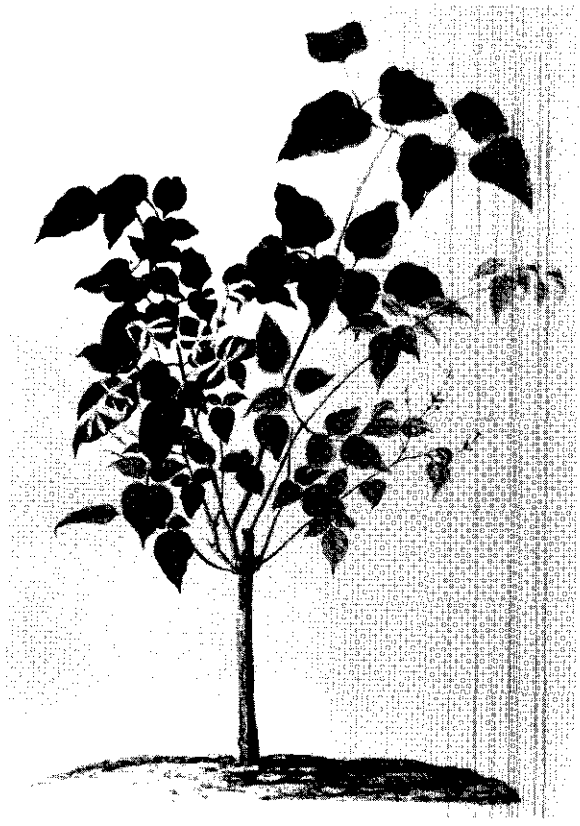
Psidium guajava L., Sp. Pl.:470 (1753)
Atlas. 2 t.13. *Guajava alba dulcis.*
Commelin. Hort. Amst. 1:121 t.63. *Guajava alba dulcis* Par. Bat. Prod. (Hermann 1689:339). Pela Hort. Mal. tom. 3 (Reede 1682:31 t.34).
Dutch: Witte en zoete guajave-boom.
Artist. Jan Moninckx (December 1689).
Citations. *Psidium guajava* L. β 1753:470, [Hort. Cliff.: 184.1, Fl. Zeyl. no.192, Hort. Ups.:122.1, ms LINN, Commelin in Merian 1705 t.18 & 19, Burm. 1737:112].
Psidium pyriferum L. 1762:672, Burm.f. 1768 Fl. Ind.: 113, Aublet 1775:487, Huth.
Guajava pyrifera (L.) O.Kuntze var. *pomifera* (L.) O. Kuntze 1891:239.
Taxonomic notes. Commelin knew two varieties of Guajava, the acid round-fruited one figured as Malakka pela in Hortus Malabaricus (t.35) and the one in Moninckx' drawing with sweet pear-shaped fruits with white flesh.
As type of *Psidium pyriferum* L. I consider the Lin-

Psidium guajava. Atlas 2 t.13

nean specimen '2 *pyriferum*' (LINN 635.2) to be less desirable, because it has no flowers or fruits. I propose Commelin's Plate 63 as lectotype since it is the only element in *P.guajava* L. β, the taxon that was later developed as *P.pyriferum* L.
Distribution. Tropical America.
Introduction ante 1687. Commelin did not specify the source of his plant. He knew the plant from American and from Indonesian sources. The plant fruited in Amsterdam in 1688 and 1689. Hermann (1687:305) grew it at Leiden. The species is represented in the Codex of the Duchess of Beaufort 1 t.47 f.1.
Specimens seen. V.Royen jr. (L. 898207-128 and -129); Jansen 5363 and 7142 (WAG); Westphal & Westphal-Stevels 575 and 638 (WAG).

OLEACEAE

Jasminum azoricum L., Sp. Pl.:7 (1753)
Atlas. 2 t.18. *Jasminum Azoricum trifoliatum Flore albo odoratissimo* (Hermann 1687:676).



Jasminum azoricum. Atlas 2 t.18

Dutch: Drie-bladerige Azorische Jasmijn, met witte en seer sterck-rieckende bloemen.
Commelin. Hort. Amst. 1:159 t.82. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Jasminum azoricum* L. 1753:7, [Hort. Cliff.: 5.2, Fl. Zeyl. no.13, ms LINN, V.Royen:397, Tilli 1723:87, Boerhaave 1719,2:216], Burm.f. 1768 Fl. Ind.:6, Miller 1768, Willd. 1797:39, Vahl 1804:31, Ait.f. 1810:17, Bot. Reg. 1815 t.89, Huth, Trelease 1897:131.
Taxonomic notes. The name of this species in Hort. Cliff. is used for it in Species Plantarum; H.S.C. 5.2 is the lectotype.
Note on the plate. The published engraving differs strongly from the water-colour.
Distribution. Madeira (Green 1965:142).
Introduction 1687. Commelin had the plant from the Vlaamsche Eilanden (i.e. Flemish Islands, the Azores). The editors Kiggelaer & Ruysch have seen it in 1693 in the Hortus Beaumontianus. Hermann listed a plant under the name Commelin used in the appendix of his Catalogus. It possibly was the same species. Breyne (1689:73) saw the plant in Amsterdam in 1688 and noted that this was the only plant he knew of this species.

Jasminum glaucum. Atlas 6 t.21

I do not know the species in cultivation at present.
Specimens seen. H.S.C. 5.2, lectotype (BM); '2 *azoricum*' LINN 17.3; Herb. Lowe 1022 (K); D.v.Royen s.n. (L 912.356-335 and -336).

Jasminum glaucum (L.f.) Aiton, Hort. Kew. 1: 9 (1789)
Atlas. 6 t.21. *Jasminum foliis solitariis floribus vulgatiori similibus.*
Commelin. Rar. & Exot.: 5 t.5. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Jasminum glaucum* (L.f.) Ait. 1789:9, Thunb. ed. Schultes 1823:4.
Taxonomic notes. *Nyctanthes glauca* L.f., Suppl.:82 (1782) is typified by Thunb. s.n. (UPS), proposed by Verdoorn 1963:109.
Distribution. South Africa: S.W.Cape.
Introduction ante 1705. Commelin does not specify the origin of the seed from which the plant was grown. I do not know the species in cultivation at present.
Specimens seen. Thunb. s.n., lectotype (UPS); LINN 16.6; herb. Dahl (S-Linn.); Pillans 8675 (K).

Olea capensis L., Sp. Pl.:8 (1753)
Atlas. 8 t.50. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

ORCHIDACEAE in the atlas, none of these has been published by Commelin.
J.Burman sent these 25 water-colours to Haller in Bern in 1756, cf. Van Hall 1830:154.
The water-colours are discussed in the sequence of the atlas.
Atlas. 8 t.56.
Artist. Maria Moninckx (1686-1706).
left: **Orchis militaris** L. (1753)
cf. Landwehr t.143 f.1.
The species was known to Fuchs 1542:554 as *Orchis mas latifolia.*
It is known from The Netherlands.
centre: **Orchis militaris** L. × **O.purpurea** Hudson
The plant is closer to *O.purpurea* but influence from *O.militaris* is in evidence.
Vermeulen (1958:28) gives as name for this hybrid *Orchis* × *hybrida* Boenninghausen ex Reichb. 1830.
Plants tending to *O.purpurea* have been named *O.* × *jacquinii* Godfr. (1843).
The plant depicted in Flora Batava, 1889:18 t.1362 is close to Moninckx's.
It is known from The Netherlands.
right: **Orchis ustulata** L. (1753)
cf. Landwehr t.139.
The species was known to Clusius 1601:268 as *Orchis pannonica* IV.
The species is known from The Netherlands, but now extinct (see Mennema c.s. 1980:158).

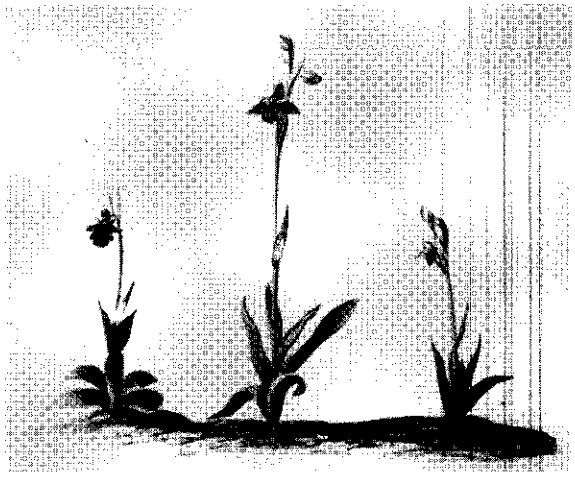
Atlas. 8 t.57.
Artist. Jan Moninckx (1686-1706).
left: **Dactylorhiza majalis** (Reichb.) P.F.Hunt & Summerhays subsp. **praetermissa** (Druce) D.M.Moore & Soó var. **junialis** (Vermeulen) Senghas.
cf. Landwehr t.88.
This variety was described by Vermeulen in Ned. Kruidk. Arch. 1930,40:151. It was pictured earlier in Flora Batava 1800,1 t.20 as *Orchis latifolia.*
It is known from The Netherlands.
centre: **Dactylorhiza maculata** (L.) Soó subsp. **elodes** (Griseb.) Soó (1962)
cf. Landwehr t.36.
This taxon was described by Grisebach in 1846.
It is known from The Netherlands.
right: **Dactylorhiza maculata** (L.) Soó (1962)
cf. Landwehr t.27 f.2 and t.31 f.1,2.
This species was described by Linnaeus in 1753.
It was known to Dodoens 1616:240 as *Satyrium basilicum femina.*
It is known from The Netherlands.

Orchis purpurea. Atlas 8 t.61

Atlas. 8 t.58, 59 and 60 represent a number of species of *Lachenalia*, a South African genus of *Liliaceae*.

Atlas. 8 t.61.
Artist. Not signed (1686-1706).
Orchis purpurea Hudson (1762)
cf. Landwehr t.146.
Bauhin (1650-51,2:759) knew the plant as *Orchis magna latis foliis, galea fusca vel nigricante.*
The species is known from The Netherlands.

Atlas. 8 t.62.
Artist. Jan Moninckx (1686-1706).
left: **Ophrys speculum** Link (1800)
cf. Landwehr t.172 f.5.
The species does not grow in The Netherlands, it must have been introduced from the Mediterranean region.
centre: **Ophrys apifera** Hudson (1762)
cf. Landwehr t.224 f.1.
The species was known to Bauhin 1623:83 as *Orchis fuscum referens major, foliolis superioribus candidis et purpuras-centibus.* Breyne's (1678 t.43) *'Orchis apem referens lusitanica'*, might be the same.
The species is known from The Netherlands, but I suppose the plant was introduced.
right: **Ophrys scolopax** Cav. (1793)
The water-colour represents a very dark form, not depicted in Landwehr.
Cavanilles does not refer to earlier literature.
The species does not grow in The Netherlands, it must have been introduced from the Mediterranean region.



Ophrys speculum, Ophrys apifera, Ophrys scolopax. Atlas 8 t.62

Atlas. 8 t.63.
Artist. Jan Moninckx (1686-1706).
left: **Ophrys holoserica** (Burm.f.) Greuter (1967) cf. Landwehr t.218 f.1. **[Pl.63]**
The species was described as *Ophrys insectifera η adrachnites* L. 1753. Lobel 1581 t.135 knew it as *Orchis adrachnitis.* For the nomenclature of this species I follow Rauschert 1982:11.
The species is not known from The Netherlands. It might have been introduced from a wide area in Europe, see map in Landwehr:448.
centre: **Ophrys insectifera** L. (1753)
cf. Landwehr t.174 f.1.
Lobel 1581 t.181 knew this plant as *Orchis myodes prima, floribus muscam exprimens.*
Breyne's (1678 t.44) *'Orchis muscam majorem coeruleam repraesentans'* might be the same species.
The specimen is known from The Netherlands.
right: **Ophrys holoserica** (Burm.f.) Greuter (1967).

Atlas. 8 t.64.
Artist. Jan Moninckx (1686-1706).
left: **Orchis coriophora** L. (1753)
cf. Landwehr t.135 f.1.
Lobel 1601 t.177 knew this species as *Tragorchis minor & verior gemmae.*

The species was known from The Netherlands (Limburg), but is now extinct (see Mennema c.s. 1980: 155). The plant was probably introduced from the south.

centre: **Orchis italica** Poir. (1798)
cf. Landwehr t.144 f.1.
The species was described in 1798 without citation of earlier synonyms.
It was based on a collection of Vahl in Italy. I know of no earlier illustration of it.
The species must have been introduced from the Mediterranean region.

right: **Ophrys tenthredinifera** Willd. (1805)
cf. Landwehr t.219 f.2.
This species was first described by Desfontaines (Flora atlantica 1799,2:320) as *Ophrys insectifera* L. var. *rosea* Desf.
Moninckx' water-colour is the first illustration known to me.
The species must have been introduced from the Mediterranean region.

Atlas. 8 t.65.
Artist. Jan Moninckx (1686-1706).

left: **Ophrys** cf. **holoserica** (Burm.f.) Greuter (1967)
cf. Landwehr t.218 f.3.
This water-colour might as well represent *O. tenthredinifera* Willd.

centre: **Ophrys fusca** Link (1800)
cf. Landwehr t.176 f.3.
The plant must have been introduced from the Mediterranean region.

right: **Ophrys lutea** (Gouan) Cav. (1793)
cf. Landwehr t.179.
Breyne's (1678 t.45 f.2) *Orchis Moydes lutea lusitanica* might be the same species.
The plant must have been introduced from the Mediterranean region.

Atlas. 8 t.66.
Artist. Jan Moninckx (1686-1706).

left: **Orchis morio** L. (1753)
cf. Landwehr t.110 f.4.
Fuchs 1542:559 knew this species as *Triorchis serapias mas.*
The species is known from The Netherlands.

centre: **Ophrys bombylifera** Link (1800)
cf. Landwehr t.181 f.1.
The plant must have been introduced from the Mediterranean region.

right: **Orchis morio** L. (1753).

Atlas. 8 t.67.
Artist. Jan Moninckx (1686-1706).

left: **Ophrys apifera** Hudson (1762)
cf. Landwehr t.221 f.3.
For comment, see Atlas t.62 centre.

Oxalis incarnata. Atlas 1 t.26

centre: **Anacamptis pyramidalis** (L.) L. C.M.Richard (1817)
cf. Landwehr t.154.
The species was described as *Orchis pyramidalis* L. 1753. It was known to Bauhin 1620:81 as *Cynorchis militaris, spica rubente conglomerata.*
The species is known from The Netherlands, but is very rare now (see Mennema c.s. 1980:49).

right: **Ophrys speculum** Link spp. **regis-ferdinandii** (Achtaroff et Kellerer) Soó
cf. Landwehr t.173 f.6.
This taxon was described in 1938.
This plant is known from scattered localities in the Mediterranean region.

OXALIDACEAE

Oxalis incarnata L., Sp. Pl.:433 (1753)

Atlas. 1 t.26. *Oxiis Bulbosa Africana, Folio cordato Flore albo amplo.*
Dutch: Africaanse Klaver-Suring, met Harts-gewijse Bladeren, en groote witte Blommen.
Commelin. Hort. Amst. 1:43 t.22. *Oxiis bulbosa Aethiopica minor, folio cordato, flore ex albido-purpurascente.*
Dutch: Kleen, bolachtig, morelands claver-zuring, met hertswyse bladeren, en witagtige purpure bloemen.
Artist. Jan Moninckx (1692) .
Citations. *Oxalis incarnata* L. 1753:433, [Hort. Cliff.: 175.3, V.Royen:458.3, ms LINN, Boerhaave 1719,1: 319.5], Burm.f. 1768 P.F.C.:13, Willd. 1799:798, Kraus 1893:116, Huth.
Taxonomic notes. For *Oxalis incarnata* a new nomen specificum legitimum is provided in Sp. Pl. The specimen LINN 600.19 is not annotated with the number of this species in Sp. Pl. In the Clifford herbarium I have found no specimen vouching for entry 175.3. The only element left for typification is Commelin's plate, therefore I propose it here as the lectotype.
Distribution. South Africa.
Introduction ante 1690. Commelin writes that his plant

flowered in 1690, in May. His editors credit Huydecoper for the introduction.
Specimens seen. Bolus 2280 (K); Wolley Dod 61 (K); Bos 755 (WAG).

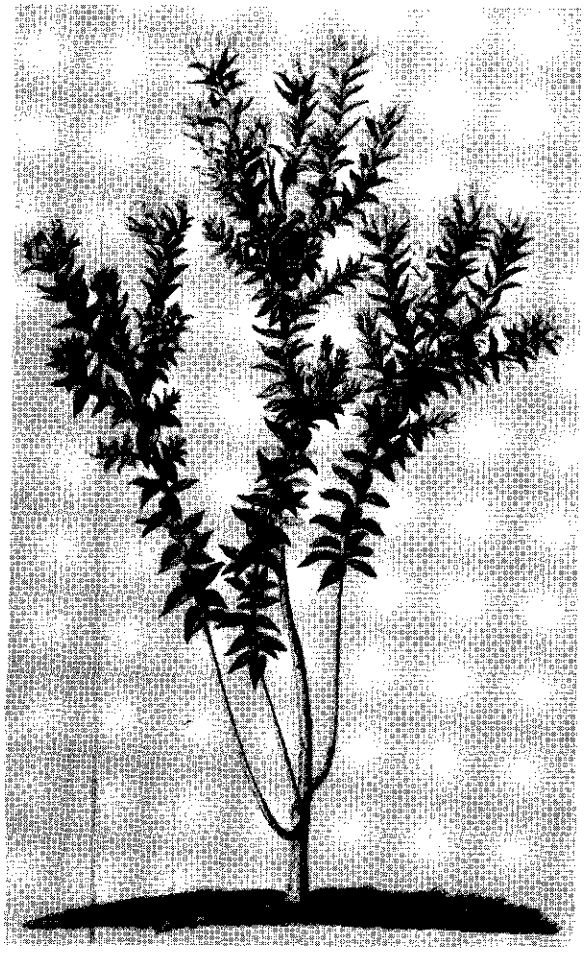
Oxalis purpurea L., Sp. Pl.:433 (1753)
Atlas. 1 t.25. *Oxiis Bulbosa Africana rotundifolia, Flore purpureo, amplo.* Breynii Prod. LL (Breyne 1689).
Dutch: Africaans Klaver-Suring, met knobbelachtige Wortel, en groote purpure Blom.
Commelin. Hort. Amst. 1:41 t.21. *Oxiis bulbosa africana rotundifolia, caulibus & floribus purpureis amplis.*
Dutch: Africaansche claver-zuering, met bolagtige wortelen, ronde bladeren, en groote purpure bloemen.
Artist. Jan Moninckx (1686-1690).
Citations. *Oxalis purpurea* L. 1753:433, [Hort. Cliff.: 175.2, ms LINN, Boerhaave 1719,1:320.6, Burman 1738:67], Burm.f. 1768 P.F.C.:13, Miller 1768, Salter 1939.
Oxalis speciosa Willd. 1799:799, Kraus 1893:116, Huth.
Taxonomic notes. The nomen specificum legitimum for this species in Sp. Pl. is cited from Hort. Cliff. The corresponding specimen H.S.C. 175.2 is a good match to Commelin's plate, it is proposed here as lectotype. The specimens labelled *Oxalis purpurea,* LINN 600.9 & 10, in the Linnean herbarium belong to *O.bowiei* Herb. Breyne's plant in the Centuria of 1678, mentioned by Commelin, is *O.purpurea* L.
Distribution. South Africa: S.W.Cape Province.
Introduction ante 1687. Commelin received plants from the Cape, sent by Simon van der Stel. Hermann (1687:469) had the species in Leiden.
Specimens seen. H.S.C. 175.2, lectotype (BM); Van Royen s.n. (L 903.281); Garside 162 (K); Bos 14 (WAG); Hanekom 1284 (WAG).

PAPAVERACEAE

Papaver orientale L., Sp. Pl.:508 (1753)
Atlas. No water-colour present.
Commelin. Rar. & Exot.: 34 t.34. *Papaver orientale hirsutissimum, flore magno.* Tournef: Coroll: Inst: (Tournefort 1703:17).
Citations. *Papaver orientale* L. 1753:508, [Hort. Ups.: 136.3, ms LINN, Tournefort 1718,2:118, Boerhaave 1719,1:279.17], Huth, Goldblatt 1974:290.
Taxonomic notes. Linnaeus used the phrase-name in Hort. Ups. as the nomen specificum legitimum in Sp. Pl. The vouching specimen LINN 669.10 was designated as the lectotype of *Papaver orientale* by Goldblatt (1974). Linnaeus added a descriptive note in Sp. Pl., which indicates that he had a specimen at hand when he wrote the entry. This specimen had 16 stigmata and hispid capsules. This note is in disagreement with LINN 669.10, which has no fruits, and with the diagnostic phrase where the capsule is described as glabrous. *Papaver orientale* as currently known has subglobose glabrous capsules, like the plant depicted on Commelin's plate.
The plant described by Tournefort (l.c.) is *P.pseudo-orientale* (Fedde) Medw. (cf. Goldblatt l.c.); apparently Tournefort did not differentiate between *P.orientale* and *P.pseudo-orientale.* Cullen (1965:221) designated Tournefort's specimen as the type of *P.orientale* L. As it does not seem to be very likely that Linnaeus studied this specimen, Cullen's typification must be rejected in favour of Goldblatt's. Tournefort's specimen probably belongs to *P.pseudo-orientale,* fide Goldblatt (l.c.). No bracts are preserved in this specimen and part of the petal is absent, so that the blotch, which is present in *P.pseudo-orientale* and absent in *P.orientale,* cannot be studied.
Distribution. N.W.Iran, N.E.Turkey, Transcaucasia (see Goldblatt 1974:289 for a map).
Introduction 1703. Commelin received seeds from Tournefort and Gundelsheimer. It was collected near Ezurum, cf. Tournefort 1717,2:118, where Tournefort noted that he sent [seeds of] this species to his friends in Holland, and mentioned Commelin's plate.
Most plants in cultivation as *'P.orientale'* belong actually to *P.pseudo-orientale.*
Specimen seen. Herb. Van Royen s.n. (L 908168-694).

PAPILIONACEAE

Aspalathus cordata (L.) R.Dahlgren, Opera Botanica 9:275 (1963)
Atlas. 4 t.49. *Spartium Africanum frutescens ruscifolio caulem amplectente.*
Commelin. Hort. Amst. 2:195 t.98. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Borbonia cordata* L. 1753:707, [Hort. Cliff.: 494.1 'mala', Ray 1704:107].
Borbonia lanceolata L. 1753:707 – not cited in the protologue – [ms LINN], Linn. 1763:994, Burm.f. 1768 P.F.C.:20, Miller 1768, Willd. 1800:923, Huth.
Taxonomic notes. *Borbonia cordata* L. is typified by a specimen in H.S.C. 494, as designated by Dahlgren (1963:275). The lectotype of *Borbonia lanceolata* L. is Plukenet t.297 f.4, designated by Dahlgren 1968:70. Dahlgren sunk *Borbonia* L. in *Aspalathus* L. The correct name for *B.lanceolata* L. is *A.angustifolia* (Lam.) R.Dahlgren, since a combination of the specific epithet *lanceolata* under *Aspalathus* would make a later homonym of *A.lanceolata* E.Meyer (1836), which is based on a totally different species now placed in *Lotononis* (DC.) Eckl. & Zeyh.
Commelin compared his plant with Breyne's *Planta aethiopica foliis rusci* (1678:69 t.28), which plate is the type of *Borbonia crenata* L. = *Aspalathus crenata* (L.) R.Dahlgren (see Dahlgren 1968:15, 86).
Distribution. South Africa: S.W.Cape, see Dahlgren 1968 map 10.



Aspalathus cordata. Atlas 4 t.49

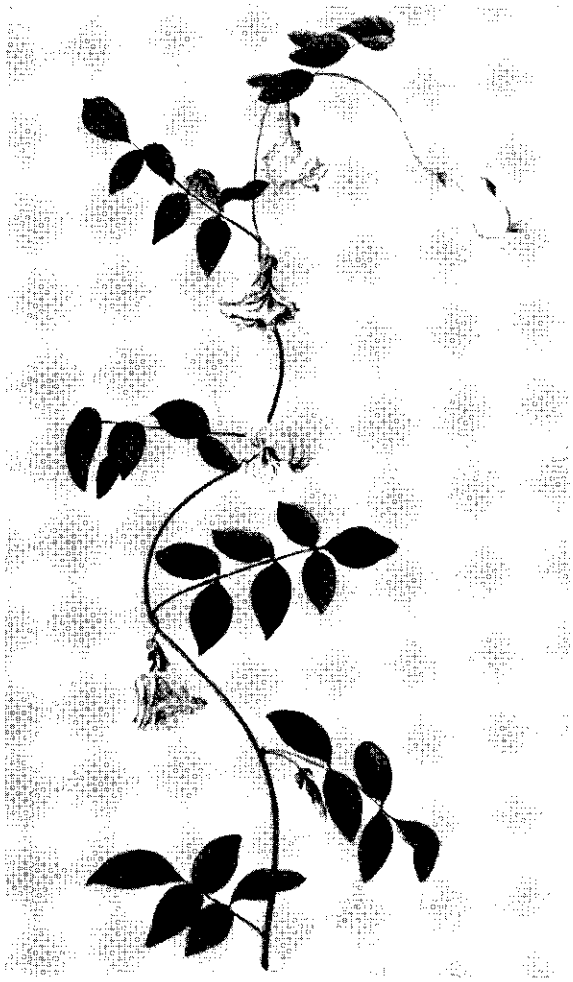
Introduction ante 1694. Commelin did not specify the source of his plant. Plukenet t.297 f.4 is the earliest record of the species.
Specimens seen. H.S.C. 494.1, lectotype (BM); LINN 890.6; H.Bolus s.n., culta (WAG); Dahlgren & Strid 3435 (K); Esterhuysen 28659 (BOL); Hutchinson 996 (K); MacGillivray 495 (K); Pillans 6895 (BOL); Taats 334 (WAG).

Aspalathus rugosa Thunb. ssp. **linearifolia** (DC.) R.Dahlgren, Opera Botanica 4:172 (1960)
Atlas. 5 t.35. *Trifolium Africanum fruticans Foliis incanis Flore luteo.*
Commelin. Hort. Amst. 2:215 t.108. Idem, the seeds were received as *Genista Africana glomerato flore luteo.*
Artist. Jan Moninckx (1686-1700).
Citations. The only interpretation of this plate I came across is Linnaeus' ms annotation *'Aspalathus'.*
Taxonomic note. Dahlgren (1960:165) amply discussed the synonymy of this taxon and the typification of the names involved.
Distribution. South Africa: S.W.Cape, see Dahlgren 1960 map 19.
Introduction ante 1700. Commelin received seeds from the Cape, no year is given. His plant flowered annually. Dahlgren (1960:169) cited with doubt Plukenet 1696 t.414 f.3 for. ssp. *rugosa.*
Specimens seen. Ssp. *rugosa:* Bayliss 6970 (WAG); Thunb. s.n., type (UPS).
Ssp. *linearifolia:* Dahlgren & Peterson 1078 (K); De Candolle s.n., type (G); Esterhuysen 17704 (BOL); Salter 1797 (K).

Astragalus species.
Atlas. 8 t.16. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).

Clitoria ternatea L., Sp. Pl.:753 (1753)
Atlas. 1 t.42. *Clitorius Flos caeruleus, pleno.*
Boenga Telang, Javanensis.
Schanga-cuspi Hort: Malab. (Reede 8:69 t.38).
Dutch: Smald-Blom, met blaauwe dubbelde Blom.
Commelin. Hort. Amst. 1:47 t.24. *Flos clitorius Breynii* (Breyne 1678:76 t.31).
Phaseolus indicus glycyrrhyzae foliis, flore amplo, caeruleo, pleno.
Dutch: Indiaansche boone, met calissie- of Soet-houds bladeren, en breede, blauwe, en gevulde bloemen.
Artist. Jan Moninckx (1689).
Citations. *Clitoria ternatea* L. 1753:753, [Hort. Cliff.: 360, Hort. Ups.:214.1, Fl. Zeyl. no. 283, Van Royen: 369, ms LINN, Burm. 1737:101), Burm.f. 1768 Fl. Ind.:162, Willd. 1800:1069, Huth.
Taxonomic notes. The nomen specificum legitimum for *Clitoria ternatea* in Sp. Pl. is cited from Hort. Cliff. The specimen H.S.C. 360 is proposed here as the lectotype. The epithet *'ternatea'* is taken from Breyne.
Dr P.R.Fantz, who is now preparing a monograph of *Clitoria,* kindly informed me that he recognises two forms in the double -flowered *C.ternatea;* one with free anthers and one with some or all anthers grown together. It is not discernable to which form Commelin's plant belongs.
Distribution. Pantropical, but probably an Indomalayan species.
Introduction. Commelin gave no origin of his plant. The specimen on Plate 24 and the one with white flowers in Atlas 1 t.43 were grown from seed in 1689 and 1690. I do not know the double-flowered form in recent cultivation, but it is mentioned by Arnoldo 1971:157.
Specimens seen. Korthals s.n. (S); Wall 383 (S).

Clitoria ternatea L., Sp. Pl.:753 (1753)
Atlas. 1 t.43. *Clitorius Flos albus, pleno.*
Boenga Telang Poteh Javanensis.



Clitoria ternatea. Atlas 1 t.43

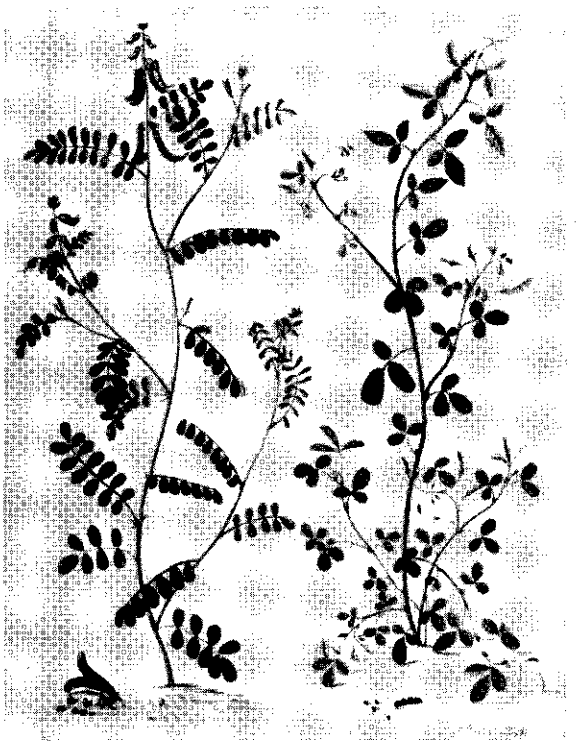
Commelin. Not published by Commelin, but mentioned in Hort. Amst. 1:47.
Artist. Jan Moninckx (1689).
Notes. I have not come across a recent record of the double-flowered white *Clitoria ternatea,* it seems to be quite rare.
A water-colour of the single-flowered blue *Clitoria ternatea* is present in the African Library in Johannesburg, catalogue no.W227. It is annotated '*Flos Clitoritis* 1686 14 July' and attributed to Alida Withoos (Kennedy 1968). I suppose that this drawing was done after a plant in the Hortus Medicus.

Crotalaria retusa L., Sp. Pl.:715 (1753)
Atlas. 8 t.51. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. As Dr R.M.Polhill's recent monograph will discuss this species much more thoroughly than I can at this moment, I refer to it. Dr. Polhill provided the identification. The species is based primarily on Fl. Zeyl.:276.
Syntypes are present in the Hermann Herbarium (BM): 2:21,84 and 4:51,78 (Polhill 1982:272).
Distribution. The coast of India and tropical Africa, not including the Cape.
Introduction ante 1687. Hermann (1687:200 t.201) had the species in cultivation, he might have brought it with him from Ceylon. It is but rarely cultivated in botanic gardens. Commelin did not indicate that this species was in cultivation in Amsterdam in his notes in Reede 9:46.
Specimens seen. Breteler 7057 (WAG); De Wit 7508 (WAG); Van Setten 271, cult. (WAG).

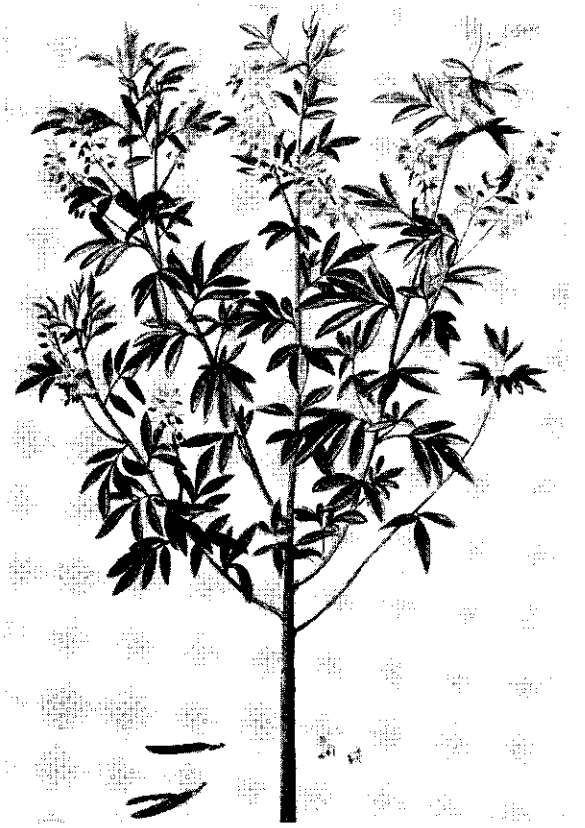
Cytisus sessilifolius L., Sp. Pl.:739 (1753)
Atlas. 9 t.3. (On separate piece of paper)
Cytisus folii saepius sessilibus calijcibus squamula triplici auctis Hort. Cliff. 355.
Cytisus glabris foliis subrotundis pediculis brevissimis Boerh. 2 p.26.
Commelin. Not published by Commelin.
Artist. J.M.Cock (1749).
Distribution. Italy, S.France, Spain, N.Africa.
Introduction. Ca.1600 in England, fide Boom 1980: 286.
Specimens seen. Bourgeau, Pyr.Or.266 (WAG); Springer s.n., culta (WAG); De Wit 9327 (WAG).

Desmodium adscendens (Sw.) DC., Prodr. 2: 332 (1825)
Atlas. 8 t.6. Right hand drawing. No name.
Commelin. Not published by Commelin.
Artist. Alida Withoos (1694).
Taxonomic notes. In a large genus as *Desmodium* it is difficult to arrive at a positive identification. The water-colour is close to *D.adscendens* but might well represent an allied species.
Distribution. Tropical America and Africa, a common weed.
Introduction ante 1694. *Hedysarum adscendens* Sw. was described in 1788. I know of no earlier record of the species in cultivation. Probably it was introduced from the West Indies.
Specimen seen. Leeuwenberg 6590 (WAG).

Erythrina corallodendrum L., Sp. Pl. 706 (1753) [Pl.8]
Atlas. 2 t.27. *Arbor coral americana. Arbuscula Coralli* Ferrarii Flor: Cult: 380 (Ferrari 1633:380).
Commelin. Hort. Amst. 1:211 t.108. Idem and Mouricou. Muricu & Mirico. Hort: Malab: Tom: VI.13 (Reede vol.6:13 t.7. 1686).
Dutch: Americaansche Coraal-Boom.
Artist. Jan Moninckx (1688-1689).
Citations. *Erythrina corallodendrum* var. *occidentalis*



Desmodium adscendens, Tephrosia purpurea. Atlas 8 t.6



Indigofera cytisoides. Atlas 4 t.34

L. 1753:706, [Hort. Cliff.:354.2, Hort. Ups.:207.1, Fl. Zeyl. no.275, Boerhaave 1719,2:49].
Erythrina corallodendron L. [ms LINN], Burm.f. 1768 P.F.C.:20, Miller 1768, Willd. 1800:913, Ait.f. 1812,4: 251, Sweet 1818:159, Salm-Dyck 1834:103, Huth, Krukoff 1939:273.
Corallodendron occidentale (L.) O.Kuntze 1891:172.
Taxonomic notes. Linnaeus' species *Erythrina corallodendron* consists of his varieties *occidentalis* and *orientalis* only. Var. *occidentalis* equals var. *corallodendrum.* His var. *orientalis,* based on Reede (l.c.), is the taxon now correctly named *E. variegata* L. var. *orientalis* (L.) Merr. It has long been known as *E. indica* Lam.
Krukoff (l.c.) discussed Commelin's plate in relation to the Linnean protologue, to formalize his discussion I propose Commelin's plate as lectotype of var. *occidentalis* and of *E. corallodendrum* L.
I cannot interpret Ferrari's illustration, cited by Commelin.
Commelin's plate is very diagnostic for the species in showing the truncate, not oblique, calyx and the uniformly red seeds.
Distribution. Jamaica, Hispaniola, Grand Cayman (Adams 1972:360).
Introduction ante 1688. Commelin did not cite the source of his plant. He stated that it grows in America in different places such as Brazil and Curaçao.
Aiton f. (l.c.) wrote that this species was introduced in 1690 by the Earl of Portland, i.e. Willem Bentinck. Commelin must have had it earlier.

Indigofera cytisoides (L.) L., Syst. Nat. ed.12: 496 (1767)

Atlas. 4 t.34. *Lotus africana frutescens Flore spicato rubicundo.*
Barba Jovis Africana – Vulgo.
Commelin. Hort. Amst. 2:167 t.84. Idem.
Artist. Jan Moninckx (1698-1700).
Citations. *Psoralea cytisoides* L. 1763:1076.10, Burm.f. 1768 P.F.C.:22.
Indigofera cytisoides (L.) L. 1767:496, Willd. 1800: 1232.
Indigofera lotoides Lam. 1789:247, DC.1825:230 '?', Huth.
Taxonomic notes. *Psoralea cytisoides* is based on a specimen sent by Van Royen in 1759, LINN 923.13 is designated here as the type.
Commelin's plate leaves some doubt on its identity. No stipules are shown, the stem is round, not grooved. Stipules are drawn in the water-colour however. The vividly pink alae in the original are typical of the species, as appears from the fieldnotes in Bos 1380 'corolla pink with vividly rosy alae'.

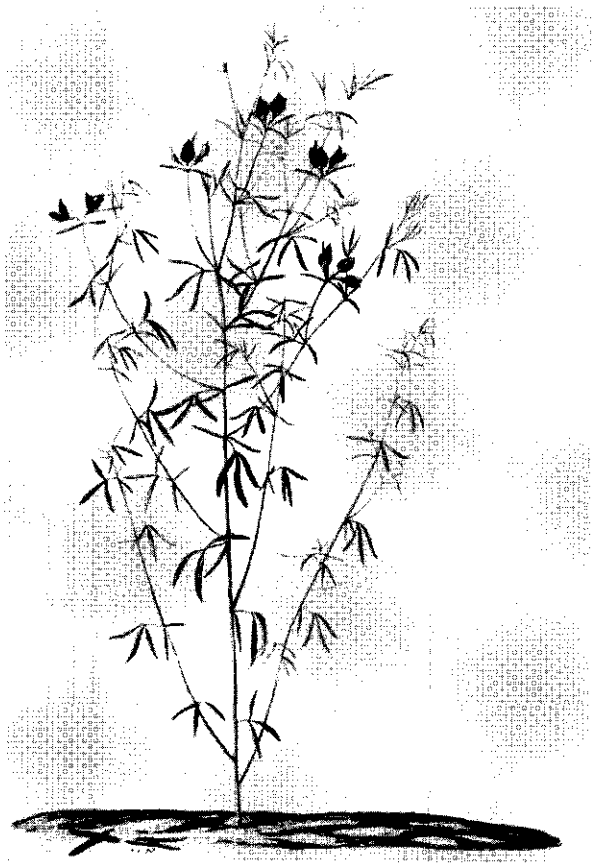
I.lotoides Lam. = *I.oblongifolia* Forsk. quoad nomen, fide Gillet 1958:116.
Distribution. South Africa: Cape Province including the Cape Peninsula.
Introduction 1696. Seeds were received in 1696 from the Cape.
Specimens seen. LINN 923.13, lectotype; Van Royen, ?-isotype (L 116-875); Bolus 357 (BOL); Bos 1380 (WAG); Leighton 403 (BOL); Lotsy & Goddijn 1781 (L); Vogts 42 (K).

Lathyrus odoratus L., Sp. Pl.:732 (1753) [Pl.30]
Atlas. 4 t.30. *Lathyrus distoplatyphyllus, hirsutus, mollis, magno et peramoeno flore, odoro.* Cupani Hort: Cathol: (Cupani 1696:107).
Commelin. Hort. Amst. 2:159 t.80. Idem.
Artist. Jan Moninckx (1699).
Citations. *Lathyrus odoratus* L. α *siculus* L. 1753:732, [Hort. Cliff.:368.9, Hort. Ups.:216-17.4, V.Royen: 363, ms LINN, Boerhaave 1719,1:42.4, Burm. 1737: 138], Lam. 1788:707, Willd. 1800:1084, Webb & Berth. 1842,3(2):113, Huth, Cizeron 1965:944-46, Van Raalte 1967:84-86, with reproduction of the plate.
Taxonomic notes. The nomen specificum legitimum for this taxon in Sp. Pl. is taken from Hort. Cliff. It describes the pods as hirsute. The specimen H.S.C. 368.9 has no fruits, I propose LINN 905.12 '11 *odoratus*' as lectotype; it has pods.
Commelin's plate is proposed as type of α *siculus*, which is a synonym of var. *odoratus*.
Caspar Commelin made an early taxonomy of the *'papilionacei'* in order to explain why *Lathyrus distoplatyphyllus . . .'* ought to be referred to *Lathyrus*, a taxon proposed by Bauhin.
Distribution. Sicily, S.Italy.
Introduction 1699. Seeds were received in 1699, together with seeds of many other species, from the Reverend Father Fr.Cupani. Cupani also sent seeds elsewhere, e.g. to Uvedale in England. Cizeron (l.c.) supposed introduction in the 16th century by the Spanish into South America and by the Portuguese to Ceylon. I have no evidence to support Cizeron's suppositions. Burman (1737:138) noted that the species was very frequently cultivated in Dutch gardens.
Specimens seen. LINN 905.12, lectotype; H.S.C. 368.9 (BM); Van Royen s.n., L 908.118-667; Ross 229 (L, WAG); Boom 44475 (L).

Lessertia fruticosa Lindl., Bot. Reg. t.970 (1826)
Atlas. 6 t.27. *Colutea Africana, sennae foliis, flore sanguineo.*
Commelin. Rar. & Exot.:11 t.11. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Colutea arborescens* L. β 1753:723, [Hort. Cliff.:365.10 β], Burm.f. 1768 P.F.C.:22, Huth. *Colutea cruenta* Ait. 1789:55 – Willd. 1800:1140.
Taxonomic note. Commelin's Plate 11 with certainty does not depict the European *Colutea arborescens* L., the type of which is probably LINN 914.1 '1 HU'. Willdenow's identification as *C.cruenta* Ait. (correctly *C.orientalis* Mill.) is incorrect too.
The best guess concerning the identity of Commelin's plant I can give is *Lessertia fruticosa* Lindl., but I am not at all certain; other possib lities are *L.globosa* Bolus, *L.tenuifolia* E.Mey., and *L.inflata* Harvey. *Lessertia* is in bad need of revision.
Distribution. South Africa.
Introduction. Commelin did not specify the source of his plant.
Specimens seen. Bolus 9497 and 9499 (BOL).

Lessertia herbacea (L.) Druce, Rep. Bot. Exch. Cl. Brit. Isles 1913:420 (1914)
Atlas. 3 t.42. *Colutea Africana annua foliis parvis mucronatis vesiculis compressis.*
Commelin. Hort. Amst. 2:87 t.44. Idem.
Artist. Alida Withoos (1694).
Citations. *Colutea herbacea* L. 1753:723, [V.Royen: 374, ms LINN, Boerhaave 1719,1:40.5], Burm.f. 1768 P.F.C.:22, Miller 1768, Willd. 1800:1141. *Lessertia annua* DC. 1802:37, Ait.f. 1812:328, Sweet 1818:166, Huth.
Taxonomic notes. The nomen specificum legitimum for *Colutea herbacea* in Sp. Pl. is taken from Hort. Ups.: 266. There is no specimen of it in LINN marked 'HU'. Also the Van Royen herbarium does not contain a specimen. LINN 914.8 seems a good match of Commelin's plate. It could eventually be used as the lectotype, but I prefer to leave this problem in the hands of a future monographer.
Distribution. South Africa.
Introduction ante 1695. Commelin had already been growing the plant for some years before 1701. All of Withoos' drawings in the atlas were done in 1694. Volckamer 1700 t.118 might represent the same species.
Specimens seen. LINN 914.8; Acocks 20561 (K); Bolus 20406 (K); Wolley Dod 660 (K); Esterhuysen 3394 & 11672 (BOL); Salter 7708 (BOL).

Lessertia cf. **inflata** Harvey in Harvey & Sonder, Fl. Cap. 2:219 (1894)
Atlas. No water-colour present.
Commelin. Rar. & Exot.:12 t.12. *Colutea Africana humilis, flore sanguineo, Crotalaria siliquis.*
Citations. Huth: 'var. praecedentis ?' [1706 t.11 *'Colutea aborescens'*, see the text on *Lessertia fruticosa*].
Taxonomic notes. Plate 12 is much like Plate 11 (1706), as Huth observed. It shows one of the *Lessertias* with inflated pods. The best suggestion I can provide is *Lessertia inflata*, but I am not at all certain.
Distribution. South Africa.



Lotus jacobaeus. Atlas 4 t.33

Introduction. Commelin did not specify the source of his plant.

Lotus jacobaeus L., Sp. Pl.:775 (1753)
Atlas. 4 t.33. *Lotus Angustifolia Flore luteo purpurascente Insulae Sancti Jacobi.*
Commelin. Hort. Amst. 2:165 t.83. Idem.
Artist. Jan Moninckx (1699).
Citations. *Lotus jacobaeus* L. 1753:775, [Hort. Cliff.: 372.7, V.Royen:388, ms LINN], Miller 1768, Lam. 1792:608, Willd. 1800:1391, Huth, Brand 1898:168, Barbosa 1962:81.
Taxonomic notes. The nomen specificum legitimum for *Lotus jacobaeus* is cited from Hort. Cliff.:372 and V.Royen. H.S.C. 372.7 is an excellent match of Commelin's plate. I propose it as the lectotype.
Distribution. Cape Verde Islands: S.Tiago.
Introduction 1699. W.A.van der Stel visited St Jago in 1699 on his voyage to the Cape where he was appointed governor and sent seeds from there to Amsterdam.
Specimens seen. H.S.C. 372.7, lectotype (BM); V. Royen s.n., with Commelin's phrase (L 908-119-687); LINN 931.13; cultivated specimen from Hortus Upsaliensis (S-Linn); Persoon s.n. (L).

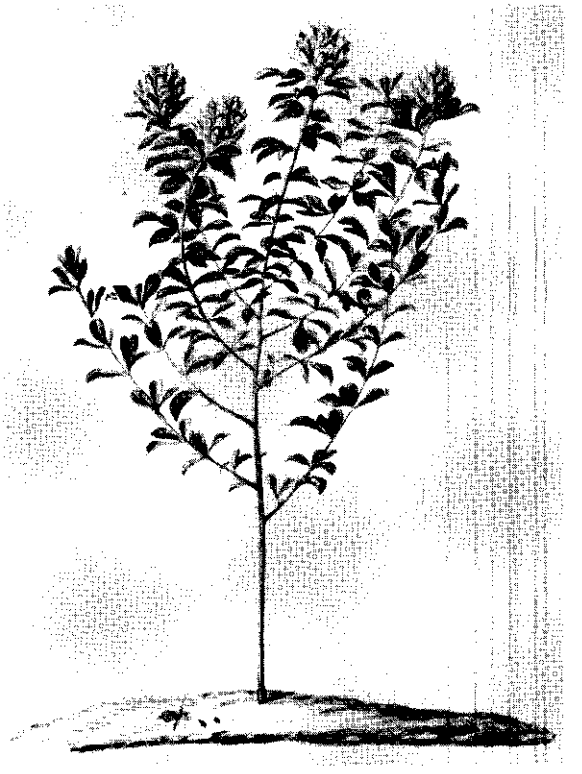
Melolobium aethiopicum (L.) Druce, Rep. Bot. Exch. Cl. Brit. Isles 1913,3:421 (1914)
Atlas. 4 t.32. *Lotus Africana annua Hirsuta, floribus luteis.*
Commelin. Hort. Amst. 2:163 t.82. Idem.
Artist. Maria Moninckx (1686-1700).
Citations. *Cytisus aethiopicus* L. 1753:740, not cited in the protologue, [ms LINN].
Ononis cernua L., Pl. Afr. Rar. 1760:95, Am. Ac. 6:95, Sp. Pl. ed.2:1011, Burm.f. 1768 P.F.C.:20, Ait.f. 1812: 278, DC. 1825:167, Huth.
Lotus cernuus (L.) Desr. in Lam. 1792:612.
Taxonomic notes. *Cytisus aethiopicus* has an original nomen specificum legitimum in Sp. Pl. *'Cytisus ramis lateralibus strictis, ramis angulatis, foliolis cuneiformibus'.* Only Plukenet 1694 t.278 f.3 is cited as dubious synonym. Plukenet's drawing leaves much to be desired. The specimen LINN 912.15 *'Cytisus aethiopicus'* was received from Van Royen in 1760. It does not match the diagnosis, so that it does not qualify as a type; Linnaeus' diagnosis strongly suggests that he had a specimen at hand that at present cannot be traced.
Linnaeus annotated Commelin's plate as *Cytisus aethiopicus.* Since the branches are described by Linnaeus as angulate and by Commelin as terete, the plate was not the basis of the description.
I strongly recommend still, a close investigation of the plate to a future monographer of *Melolobium.* The link between *Cytisus aethiopicus* L. and *Ononis cernua* L. is documented by Linnaeus' annotation of the plate and his citation of it for *O.cernua.* In an undated letter to J.Burman, Linnaeus wrote *'Cytisus aethiopicus,* ut nuper didici, debet ad genus *Ononis* referri' (Van Hall 1830:99).
In 1767 Linnaeus reduced *C.aethiopicus* to a variety of *Ononis cernua. Ononis cernua* was published in Pl. Afr. Rar., a dissertation defended by Printz in 1760. The basis for this dissertation was a herbarium collected at the Cape by Oldenland, sent to Linnaeus by Burman. The type of *Ononis cernua* L. could, therefore, be present in G. Three specimens are preserved in herb. Burman. One, annotated *'Cytisus aethiopicus'* is not a *Melolobium,* it is annotated also *'Lotus Malabaricus* Garzin' (an unpublished name). The other two specimens are annotated *'Ononis aethiopica',* it is not clear to me if this material could typify *Ononis cernua* L. LINN 896.11 *'Ononis cernua* HU' is not a syntype and it differs essentially from the diagnosis and from the current concept of *Melolobium cernuum* (L.) Eckl. & Zeyh.
In my opinion, *O.cernua* is a taxon described independently of *C.aethiopicus;* it is not a nomen novum. There is room for a different taxonomic treatment of these names. Linnaeus upheld both names in Sp. Pl. ed.2.
As to the identity of Commelin's plate, I am in doubt. Commelin described his plant as annual, whereas

Melolobium is considered to be a genus of woody plants (Dyer 1975:252). The specimens I have seen of *M.cernuum* (L.) Eckl. & Zeyh. may well be conspecific with the plate, but I am not at all certain.
Distribution. South Africa.
Introduction ante 1700. Commelin gives no details on the source of his plant.
Specimens seen. Acocks 23980 (K); Bolus 4268 (K); Stirton 6051 (K); Wolley Dod 1579 (K); Van Royen s.n. (L 908.120.175); herb. Meerburgh (L); Wiese 2034 (S); Salter 7440 (BOL).

Ononis natrix L., Sp. Pl.:717 (1753)
Atlas. 1 t.39. *Anonis Viscosa, Spinis carens lutea major.*
B: Pin: (Bauhin 1623:389).
Dutch: Stal-Kruijt, met geele Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Bauhin's name, used by Commelin, is cited for *Ononis natrix* in the protologue. The specimen LINN 896.22 '7 *natrix*' ex Herb. Clifford probably is the type.
Since the calyx teeth of the plant in the water-colour are relatively short and there are some unifoliolate leaves, Jan Moninckx probably portrayed ssp. *ramosissima* (Desf.) Batt.
Distribution. W.Mediterranean region and Portugal.
Introduction ante 1690. No earlier records of subspecies *ramosissima* in cultivation are known. Plukenet 1691 t.135 f.5 might be the same.
Specimen seen. Ross 15 (WAG).

Podalyria calyptrata (Retz.) Willd., Sp. Pl. ed.4, 2:504 (1806)
Atlas. 8 t.37. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. *Sophora calyptrata* Retzius, Obs. 1781,1:36 seems to be the first validly published name for this taxon, later named *Hypocalyptus calyptratus* by Thunberg. The size of the flowers in the water-colour points to *P.calyptrata*, not to *P.biflora*.
Introduction ante 1707. Chittenden (1951:1615) gives 1792 as year of introduction. Moninckx's plate is the earliest record of a *Podalyria* in cultivation. Seba 1734, 2 t.99 f.3 represents *P.calyptrata* fide De Candolle, Prod. 2:102 ('*styraciflua*').
The species is in cultivation nowadays.
Specimens seen. Bos 275 (WAG); Coppejans 1025 (WAG); Bayliss 6753 (WAG); Goldblatt 2668 (WAG); Thunberg s.n. (UPS-16338); herb. Willdenow 7848 (B); Bolus 3263 (BOL).

Psoralea fruticans (L.) Druce, Rep. Bot. Exch. Cl. Brit. Isles 1913:422 (1914)
Atlas. 5 t.33. *Trifolium Africanum fruticans, flore purpurascente.*



Psoralea fruticans. Atlas 5 t.33

Commelin. Hort. Amst. 2:211 t.106. Idem.
Artist. Jan Moninckx (1697-1700).
Citations. *Trifolium fruticans* L. 1753:770, Burm.f. 1768 P.F.C.:22.
Psoralea bracteata Bergius 1767:224, Linn. 1771:264, [Hort. Cliff.:373.5 'descr. et fig. mala', Van Royen: 378.5, ms LINN], Persoon 1797:723, Willd. 1800: 1344, Huth.
Taxonomic notes. The specimen 373.5 in the Clifford herbarium is a good match to the plate; it probably could serve as the lectotype of *Trifolium fruticans* L.
Distribution. South Africa: Cape Province.
Introduction. Commelin received seeds from the Cape in 1697 as '*Lagopus frutescens*'.
Specimens seen. H.S.C. 373.5 (BM); LINN 928.4.

Psoralea oligophylla Ecklon & Zeyher, Enum. pl. afric. austral.:227 (1836)
Atlas. 5 t.34. *Trifolium Africanum fruticans, folio angustiore, flore rubicante.*
Commelin. Hort. Amst. 2:213 t.107. Idem.
Artist. Maria Moninckx (1698).
Citations. *Spartium cytisoides* Bergius 1767:199, Persoon 1797:682.
Lebeckia cytisoides (Berg.) Thunb. 1800:143, Willd. 1800:948, Ait.f. 1812:261, Sweet 1818:160, DC. 1825:137, Salm-Dyck 1834:143, Huth.

Ebenus capensis L. 1771:264, [ms LINN], nom. superfl.
Taxonomic notes. Commelin's Plate 107 has consistently been interpreted as the species currently known as *Lebeckia cytisoides.* The plate does not at all match any specimen of this species which bear yellow flowers in a leafless inflorescence. I tentatively identify Plate 107 as *Psoralea oligophylla.*
Distribution. South Africa.
Introduction. Commelin received seeds in 1698, the plant flowered in the same year.
Specimens seen. For *Lebeckia cytisoides:* Grubb s.n. e Cap. b.sp., type of *Spartium cytisoides* Berg. (SBT); Bayliss 593 (WAG); Coppejans 1442 (WAG).
For *Psoralea oligophylla:* Bayliss 149 and 5348 (WAG).

? **Psoralea** species

Atlas. 6 t.28. *Cytisus Africanus herbaceus floribus rubris.*
Commelin. Rar. & Exot.:13 t.13. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. I have found no interpretation of this plate in the literature.
Taxonomic note. I cannot identify this plate. It seems to represent a *Psoralea* or, maybe, an *Indigofera,* or perhaps *Sutherlandia frutescens* (L.) R.Br.
Introduction. Commelin gave no details on the origin of his plant.

Psoralea species

Atlas. 8 t.5 and t.53. No names.
Commelin. Not published by Commelin.
Artists. Maria Moninckx, t.5 (1686-1706); Alida Withoos, t.53 (1694).
Note. These two water-colours probably represent different species of *Psoralea.* I have not been able to identify them.

Pterocarpus indicus Willd., Sp. Pl. ed.4,3:904 (1802)

Atlas. 2 t.28. *Draco Arbor Indica siliquosa Populi folio.* Angsana vel Angsava Javanica.
Dutch: Peuldragende Indiaanse Drakeboom, met populier-bladeren.
Commelin. Hort. Amst. 1:213 t.109. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Pterocarpus draco* L., Sp. Pl. ed.2 1763, app:1662, [Fl. Zeyl.:417, Mat. Med.:522], Burm.f. 1768 Fl. Ind.:102, Willd. 1802:904, Airy Shaw 1937: 63-64, 477-479.
Pterocarpus officinalis Jacq. 1763:283 – [ms LINN].
Pterocarpus indicus Willd. 1802:904 – Huth, Rojo 1972:69.
Lingoum indicum (Willd.) O.Kuntze 1891:193.
Pterocarpus – Kraus 1893:120.
Taxonomic notes. *Pterocarpus draco* L. is an amalgam of the species at present known as *P.indicus* Willd. (Asian), *P.officinalis* Jacq. (American), *Derris uliginosa* Benth. (Hermann Fl. Zeyl.) and *Daemonorhops* spec. (Mat.Med.), cf. Airy Shaw (l.c.).
The name *Pterocarpus draco* has been used for the American *Pterocarpus* mainly. The correct name for this plant is *P.officinalis* Jacq., a name published two or three months before *P.draco* L.
The type of *P.officinalis* is given by Rojo 1972:64 as 'collector not known s.n. (n.v.), from C.America, West Indies, Tierra Bomba st.', which means that Rojo had not seen any extant specimen that might be the type. Such a hypothetical specimen is not acceptable as a type. I designate Jacquin's Plate 183 f.92 of 1763.
As *P.draco* L. has Jacquin's *P.officinalis* in the protologue, *Pterocarpus draco* L. is a later illegitimate name based on the same type. *P.indicus* was known to Willdenow only from Rumphius '*Lingoum rubrum*', which thus becomes the holotype (Herb. Amb. 2:205 t.70).
Airy Shaw (l.c.) considered Commelin's plate as the main basis of *P.draco* L. Formal acceptance of Commelin's plate as type would make *P.draco* the correct name for *P.indicus.* This is not only highly undesirable as *P.draco* has always been used for the American species, but also against the Code because Linnaeus, when publishing *P.draco,* ought to have used *P.officinalis* Jacq., which he cited. It is noteworthy that Linnaeus agreed to this view because he himself annotated Commelin's plate as *'Pterocarpus officinalis'.*
Distribution. S.E.Asia (Rojo 1972:43).
Introduction ante 1690. Commelin received his plant from Andreas Cleyer, from Java probably.
Specimen seen. Horsfield s.n. (K).

Rhynchosia americana (Mill.) Metz, Contr. Biol. Lab. Cathol. Univ. Am. 16:126 (1934) [Pl.35]

Atlas. 5 t.6. *Phaseolus Minimus Perennis Americanus Flore luteo, Foliis asari lanuginosis, Solitariis.*
Commelin. Hort. Amst. 1:49 t.25. Idem, added: Breyn. Prodr. 2 (Breyne 1689:82).
Dutch: Seer kleen, lang-levend Americaansch boontje, met een geele bloem, en eensame, ruygachtige bladeren van mans-ooren.
Artist. Maria Moninckx (1686-1690).
Citation. This plate seems not to have been cited in the literature, Linnaeus did not annotate it in his copy; Huth did not provide an interpretation. The plate was reproduced by Kaden 1982:49.
Taxonomic notes. *Lathyrus americana* Houston ex Miller, Dict. Gard. ed.8, 1768 no.19 is typified by Houston s.n. from Vera Cruz (BM) as proposed by Grear 1978: 130. Miller wrote that the pod contains 3-4 seeds, actually there are two seeds in Miller's type specimen at BM.
Commelin's plate is close to *Rhynchosia americana* but *R.michauxii* Vaill. is another possibility. Comparison with specimens at K showed a better match with *R.americana.* Grear (l.c.) described the plant as 'villo-

sulose', this equals Commelin's 'als met wat donsigheyt beset'.
Note on the plate. This water-colour and engraving are exemplary of the way in which they were prepared. The water-colour has no flowers or fruits. Flowers were added in the engraving when they became available. As usual Commelin had kept some fruits from the original batch (or in this case from his own harvest) and had them drawn separately for the plate.
Distribution. Mexico and Texas, near the coast.
Introduction ante 1688. Commelin pretended to be describing the species first. He took his name from Breyne, who did not describe it but saw the plant in 1688 in the collection of Willem Bentinck, 'Sorgvliet' near The Hague. Bentinck belonged to the closest circle of King William.
Plukenet (1691 t.105 f.1) illustrated the same species from King William's collection at Hampton Court. Plukenet's, Bentinck's and Commelin's plants may well have been from the same stock.
Commelin received seed from 'the American islands', *'Orobus Americanus Asari folio singulari'*, Hermann's plant (1689:359), probably is the same kind. Grear (1978:4) credited Tournefort (1700) for the first description of an American *Rhynchosia*, i.e. *R.minima* (L.) DC. Bentinck's plant antedates it by at least 12 years, so that the introduction of *Rhynchosia* dates from ca.1688.
Specimens seen. Houston s.n., type (BM); McKee 10902 (K); Fisher s.n. (S); Drummond 62 (K); Lindheimer 781 (K); Pringle 8513 (S).

Teline canariensis (L.) Webb & Berth., Phytogr. Can. 3(2):37 (1842)
Atlas. 3 t.50. *Cytisus canariensis sempervirens & incanus.*
Commelin. Hort. Amst. 2:104 t.52. Idem.
Artist. Maria Moninckx (1686-1699).
Citations. *Genista canariensis* L. β 1753:709, [Hort. Cliff.:355.6, Mat. Med.:347 '?', ms LINN, Boerhaave 1719,1:27.9], Willd. 1800:937, Huth.
Teline canariensis (L.) Webb & Berth. 1842:37.
Taxonomic notes. The nomen specificum legitimum for *Genista canariensis* is taken from Hort. Cliff., there is no specimen found in H.S.C. In Linnaeus' herbarium there is a specimen with densely pubescent young leaves, LINN 892.1 written up '1' that could serve as type.
Of the other syntypes Pluk. 1691 t.277 f.5 (cited by Linnaeus as f.6), Bauhin 1623:390 and Clusius 1601: 94 are not diagnostic and excluded by Webb & Berthelot 1842:37. I must leave the matter undecided. Gibbs & Dingwall 1971:275 wrote 'Type: Hort. Cliff. no.355 (BM); also no.892.1 (Savage Catalogue 1945) in the Linnean Herbarium (LINN)'. A specimen annotated by Linnaeus as *'Genista 1 canariensis'* is preserved in S-Linn.
Distribution. Canary Islands: Tenerife, Gran Canaria.
Introduction ante 1699. Commelin had the species 'some years ago grown from seeds that were brought to Europe from Canaria'. As I am not certain of the identity of Plukenet's, Clusius' and Bauhin's plant, I consider Commelin's plate as the first published record of its cultivation in Europe. Commelin cites no synonyms and discusses the systematic position of his plant in *Anagyris* or *Cytisus*, probably the plant was new.
Specimens seen. Asplund 367 (K); Bourgeau 1300 (K); Dinn 200 (WAG).

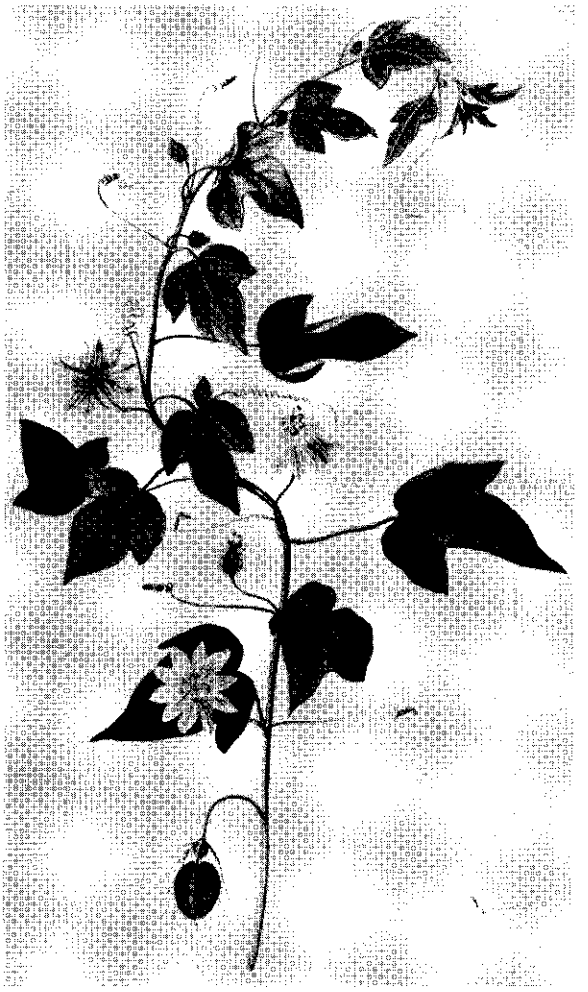
Tephrosia purpurea (L.) Persoon, Synops. Pl. 2:329 (1807)
Atlas. 8 t.6, left. No name.
Commelin. Not published by Commelin.
Artist. Alida Withoos (1694).
Taxonomic notes. *Cracca purpurea* L. 1753:752 is based on Fl. Zeyl. no.301. Probably it can be typified by a specimen in Hermann's herbarium (BM) cf. Gillet in F.T.E.A. Legum. 3:186. The identification is provisional.
Distribution. Widespread in the tropics and subtropics.
Introduction ante 1694. This species may have been introduced from Ceylon from where it was first known.
Specimens seen. Sabharwal 536 (WAG); W.de Wilde c.s. 3272 (WAG); Frahm Lelieveld s.n. (WAG).

Vigna species
Atlas. 8 t.10. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. This water-colour probably represents a *Vigna*, but I cannot identify the species.

PASSIFLORACEAE

Passiflora coerulea L., Sp. Pl.:959 (1753)
Atlas. 2 t.40. *Granadilla pentaphylla Flore Roseo clavato.*
Clematis pentaphylla Flore Roseo clavato Moris: Hist: (Morison 1680 vol.2:6 s.1 t.1 f.8).
Dutch: Passie-Blom, met vijf bladeren, en Rooswyse Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).
Taxonomic notes. Morison 1680 was cited in Hort. Cliff.:432.6. The type of *P.coerulea* is LINN 1070.26 *'coerulea* 22'.
Distribution. Brazil to Argentina.
Introduction ante 1692. Boom (1968:116) gives 1699 as year of introduction in England. The species is represented in the Codex of the Duchess of Beaufort 1 t.27 f.1.
In Amsterdam the species was in cultivation some years earlier. It is frequent in cultivation at present as the most hardy Plassionflower.
Specimen seen. Smith & Reitz 12948 (WAG).

Passiflora coerulea. Atlas 2 t.40

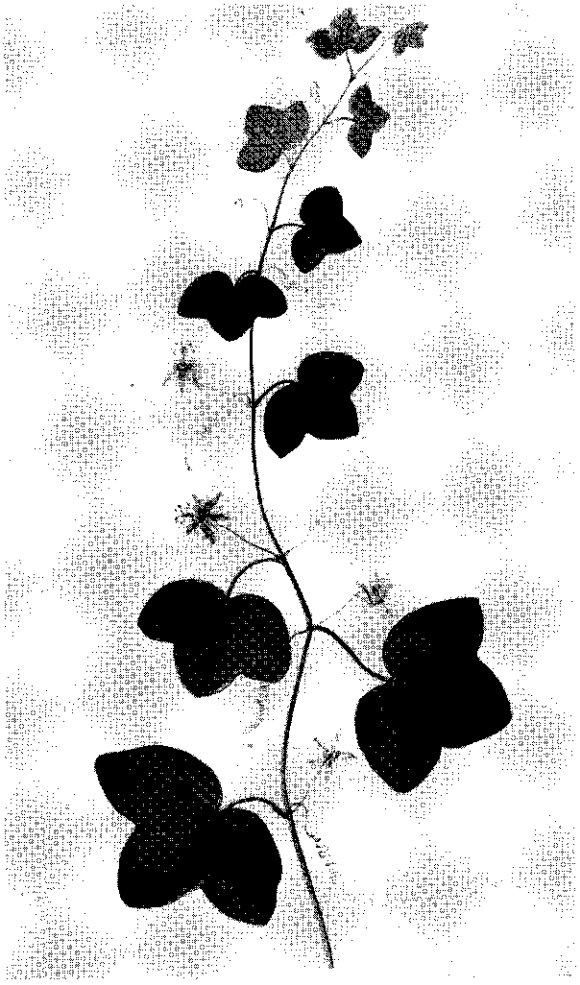


Passiflora foetida. Atlas 2 t.35

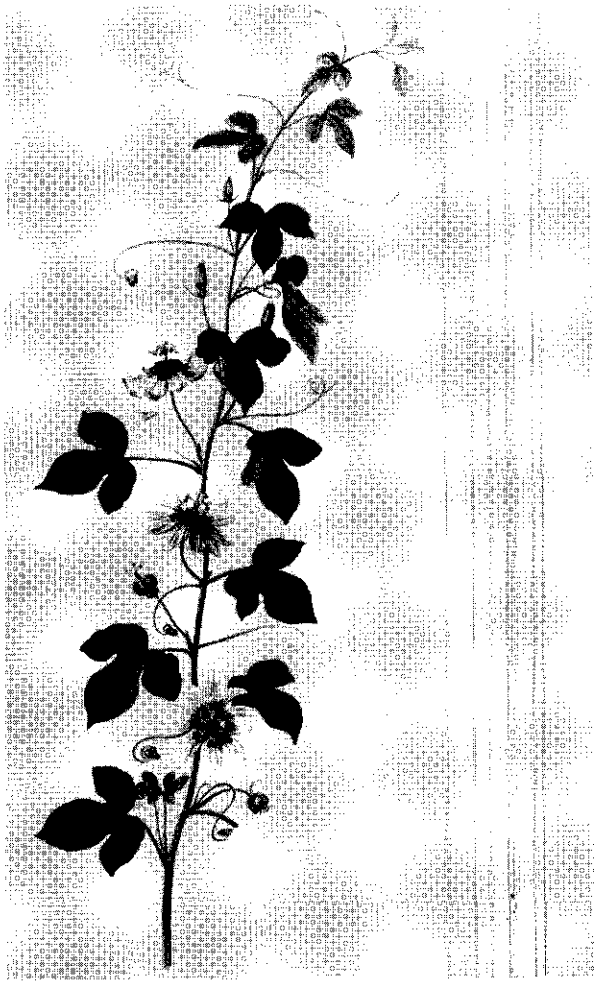
Passiflora edulis Sims, Bot. Mag.:45 t.1989 (1818) [Pl.10]
Atlas. 2 t.38. *Granadilla Hispanis, Flos Passionis Italis. Columella* in Recch:889 (Hernandes 1651).
Clematis trifolia Flore Roseo clavato B: Pin: 301 (Bauhin 1623:301).
Dutch: Passie-Blom, met drie bladeren en Roos-wijse Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).
Taxonomic notes. Both names in the atlas are cited in the protologue of *P. incarnata* L. 1753:959. The type of this name is LINN 1070.25 '*incarnata* 21'. Several elements in the protologue including t.10 f.19 in Am. Ac. 1 (1749) represent *P. edulis* (Killip 1938:394).
This species differs from *P. incarnata* in having shining, not dull, leaves. Moninckx' drawing shows this character clearly. Linnaeus did not recognise these species as different.
The plate in Bot. Mag. (t.1989) could serve as the type of *P. edulis.*

Distribution. Brazil, Argentina, Paraguay.
Specimen seen. Ruisch 5679, culta (WAG).

Passiflora foetida L., Sp. Pl.:959 (1753)
Atlas. 2 t.35. *Granadilla Foetida Villosa.* Tournef: Elem: de Botanique 206 (Tournefort 1694:206).
Clematis Indica Hirsuta foetida. Plumier 71 (Plumier 1693:71 t.86).
Dutch: Ruijge stinkende Passie-blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).
Taxonomic notes. Plumier's name, cited in the atlas, is in the protologue of *P. foetida.* This name is typified by LINN 1070.24 '*foetida* 19'.
Breyne (1689:48) saw in Amsterdam '*Flos passionis Althaeae folio lanuginoso longiore foetidus, flore decapetalo & filamentis niveis, fructu vesicario*', I think this is the same plant.
Moninckx's drawing is not unlike Plate 176 of Hermann



Passiflora gracilis. Atlas 2 t.36



Passiflora incarnata. Atlas 2 t.39

1698, the type of *P.hermannii* DC., which probably is *P.foetida* var. *moritziana* (Planch.) Killip.
Distribution. A pantropical weed, originally American. Var. *moritziana* occurs in Surinam, Curaçao, Venezuela and Colombia (Killip 1938:492).
Specimens seen. LINN 1070.24, lectotype; Sterringa 12456 (WAG); Bijhouwer 535 (WAG); P.de Wilde 72 (WAG); De Wit & de Bruijn 53, culta (WAG).

Passiflora gracilis J.Jacq. ex Link, Enum. Pl. 2: 182 (1822)
Atlas. 2 t.36. *Granadilla folio tridentato, parvo Flore flavescente* Tournef: Elem: de Botanique. 206 (Tournefort 1694:206).
Clematis Passionalis triphyllos Flore luteo Moris: Hist: 7 (Morison 1680 vol.2:7 s.1 t.2 f.3).
Dutch: Passie Blom, met drie bladeren en geele Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).

Taxonomic notes. The names cited in the atlas are related to the protologue of *P.lutea* L. 1753:958: Morison in Sp. Pl. and Tournefort in Hort. Cliff. Moninckx's plate is similar to t.84 of Plumier 1693, which is one of the elements in the protologue of *P. suberosa* L. In my opinion the water-colour shows a form of the tropical *P.gracilis,* not the North-American *P.lutea.*
As type of *P.gracilis* could serve t.168 in J.Jacq., Eclog. Pl. Rar. 2 (1844).
Distribution. Venezuela.
Introduction ante 1693. The species is probably represented in the Codex of the Duchess of Beaufort 1 t.28.

Passiflora ? incarnata L., Sp. Pl.:959 (1753)
Atlas. 2 t.39. *Granadilla triphylla Flore ex purpurea nigricante.*
Clematis trifolia alterna, Flore clavato ex nigro punicante Hort: Reg: Par: 53 (Vallot 1665:53).

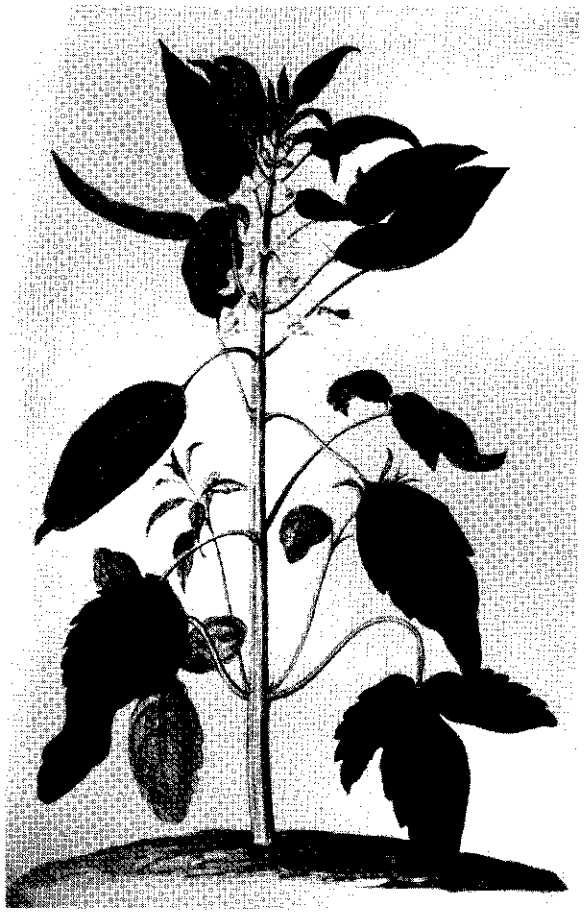
Passiflora suberosa. Atlas 2 t.37

Dutch: Passie-Blom, met drie Bladeren, en purpur Roos-wijse Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).
Taxonomic notes. I have not been able to identify this water-colour with certainty. The phrase-names cited have not been taken up by Linnaeus. The pictured plant might well be *P.incarnata* L. The type of *P.incarnata* L. is LINN 1070.25.
Distribution. N.America, Virginia to Texas and Bermuda.
Introduction ante 1665. The species is probably represented in the Codex of the Duchess of Beaufort 1 t.27 f.2.

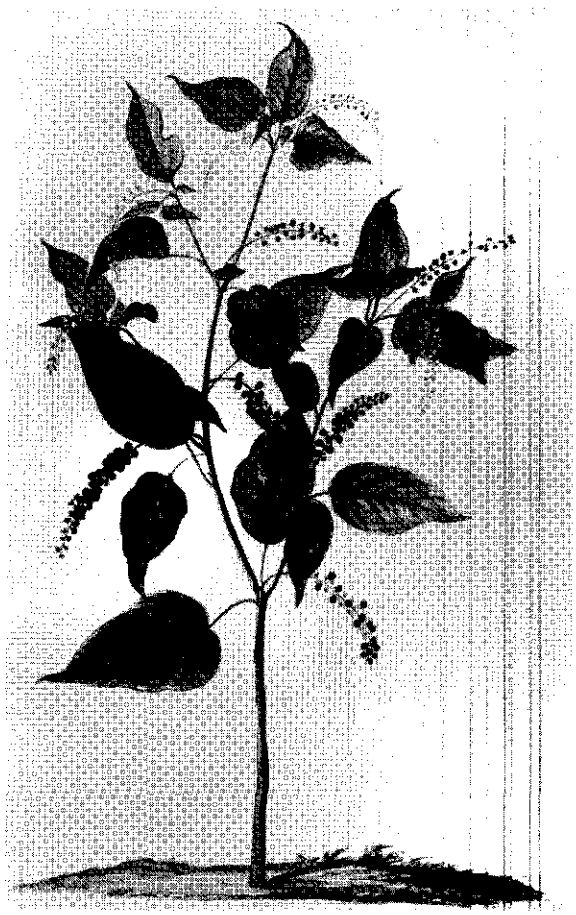
Passiflora suberosa L., Sp. Pl.:958 (1753)
Atlas. 2 t.37. *Granadilla folio glabro & angusto, Flore flavescente omnium minimo.*
Dutch: Passie-Blom, met gladde en smalle bladeren, en alderklijnste geele Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1692).
Taxonomic notes. The name in the atlas is much like *'Flos passioni curassavicus folio glabro trilobato & angusto flore flavescente omnium minimo'* Hermann 1689:335. This name is linked to the protologue of *P. suberosa* L., because Sloane 1696:104 cited Hermann. Also Plukenet 1692 t.210 f.3 used Hermann's name, his figure leaves no doubt to the identity of this plant and his note 'in Hort. Reg. Hampton hujus species cortice admodum fongoso praedita est' describes the suberous cortex that provided the epithet for the Linnean species. Breyne 1689:47 *'Flos passionis trifido folio, flore minimo pentapetalo viridis fructu minimo nigro molli'* very likely is the same species. Breyne saw the plant in Amsterdam and the gardens of Caspar Fagel and of De Flines. LINN 1070.21 is the lectotype of *P.suberosa* L. LINN 1070.20 is a better match to Moninckx's water-colour, it is the type of *P.minima* L., a synonym of *P.suberosa* (Killip 1938:88).
Introduction ante 1688. Breyne's and Hermann's records establish the introduction as before 1688. The species is in cultivation currently.
Distribution. Tropical America.
Specimens seen. Breteler 149, culta (WAG); De Wit s.n., culta (WAG); LINN 1070.20 & 21.

PEDALIACEAE

Sesamum indicum L., Sp. Pl.:634 (1753)
Atlas. 8 t.44. No name.
Commelin. Not published by Commelin but listed by C.Commelin (1724:81) as *Sesamum officinale.*
Artist. Jan Moninckx (1686-1706).
Taxonomic notes. Linnaeus described two species of Sesame in 1753. As regards *S.orientale* he referred to a considerable number of previous publications, but *S. indicum* was based only on Van Royen and included Plukenet's plant with trifid basal leaves. Commelin's plant too had trifid leaves. The shape of the basal leaves is influenced by day length (C.J.P.Seegeler 1983:265). Long days induce lobed basal leaves.
De Candolle, in 1845, united Linnaeus' main species *S.orientale* with the segregate *S.indicum* (cf. Hort. Cliff.:318), and chose the name Linnaeus applied to a far less documented taxon. This unfortunate choice by De Candolle has to be accepted.
Sesamum indicum L. is typified by LINN 802.3 as proposed by Rechinger (Flora Iranica 1978,128:2.
Distribution. Sesame is a very old cultivated plant, 'probably the oldest oil-seed known' (Seegeler l.c.). It was cultivated in Sumeria 2350 B.C. The origin is likely to be African.
Introduction. Since Sesame was cultivated in Europe in the Roman period, no date of introduction in historical times can be fixed. Plukenet (1696 t.109 f.4) shows a plant closely resembling Commelin's.
Specimens seen. Van Eijnatten 2063 (WAG); W.de



Sesamum indicum. Atlas 8 t.44



Rivina humilis. Atlas 2 t.14

Wilde c.s. 3124 (WAG); Van Veldhuizen 725, culta (WAG).

PHYTOLACCACEAE

Rivina humilis L., Sp. Pl.:121 (1753)
Atlas. 2 t.14. *Amaranthus baccifer, circae foliis.*
Dutch: Besie-dragende amaranthus, met circea bladeren.
Commelin. Hort. Amst. 1:127 t.66. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Rivina humilis* L. α *canescens* L. 1753:121, [Hort. Cliff.:35 ('bona'), V.Royen 1740:207, ms LINN, Tournefort 1706:87, Sloane 1707:200, Dillen 1719: 153], Huth.
Rivina humilis L. – Ait.f. 1810:273, Walter 1909:102, *Rivinia* – Kraus 1893:120.
Taxonomic notes. Linnaeus refers, for this species, to Hort. Cliff. and Roy. Lugdb. where it is known as *'Rivinia'.* This can hardly be regarded as a nomen specificum legitimum, but the absence of it indicates that Linnaeus' concept of this species did not change between Hort. Cliff. and Sp. Pl. The specimen H.S.C. 35 is proposed as lectotype; it is not pubescent.
Commelin's plate is cited under α *canescens,* with Plumier 1703:48 and Plukenet 1691 t.112 f.2 and 1696: 353. As type of α *canescens* I select Commelin's plate as Plumier gives a description only, and Plukenet's plate is much inferior to Commelin's. In Hort. Cliff. Linnaeus added 'bona' to the Commelin reference. Taxonomically, α *canescens* is regarded as a synonym of var. *humilis,* the species is very variable in the indumentum. Commelin's plant actually was rather glabrous, not canescent. The epithet *'canescens'* is probably cited from Tournefort 1706.
Distribution. Tropical and subtropical America, naturalized in tropical Asia.
Introduction ante 1688. Hermann and Breyne (from the Hortus Beaumontianus) provide the first record of the species in Holland. References to the earlier Munting 1672 and 1696 by Linnaeus 1738 concern *Phytolacca.* Kiggelaer (1690:5) refers to *Rivina.*
Commelin received his seed from India Orientalis. It is quite possible that this weedy species was already naturalized there at the end of the 17th century.
The species is very common in cultivation.
Specimens seen. H.S.C. 35, lectotype (BM); LINN

163.1 *'canescens'*; LINN 163.2 *'laevis'*; Breteler 4062 (WAG); Bijhouwer 492 (WAG); Groenendijk 227 (WAG); Bos 1452, culta (WAG).

PLUMBAGINACEAE

Plumbago zeylanica L., Sp. Pl.:151 (1753)
Atlas. 4 t.35. *Lychnis Indica spicata ocymastri foliis, fructibus lappaceis oblongis, radice urente* (Hermann ms).
Commelin. Hort. Amst. 2:169 t.85. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Plumbago zeylanica* L. 1753:151, [Hort. Cliff.:53.2, Fl. Zeyl.:73, Hort. Ups.:43, Am. Ac. 2: 210, ms LINN, Boerhaave 1719,1:77, Burm. 1737: 195], Burm.f. 1768 Fl. Ind.:43, Willd. 1798:838, Huth.
Taxonomic notes. The nomen specificum legitimum for this species in Sp. Pl. is cited unchanged from Hort. Cliff., Fl. Zeyl. and V.Royen. H.S.C. 53.2 and Herb. Hermann 3:21 contain good specimens that qualify for typification. Dyer 1963:17 however designated LINN 216.2 *'zeylanica* 2' as type. Although this specimen has no annotation 'HU' and thus is not directly related to *Plumbago foliis petiolatis,* Dyer's typification stands.
Peltier (1981:21) proposed H.S.C. 53 as lectotype.
Distribution. S.Asia, Madagascar, Comores.
Introduction ante 1700. The plant was grown from seed introduced from Ceylon. Caspar Commelin knew the plant from a herbarium sent by Hermann to Johan Commelin from Ceylon.
Specimens seen. H.S.C. 53.2 (BM); Hermann 3:21 (BM); LINN 216.2, lectotype; J.de Wilde 7052 (WAG); Pawek 11304 (WAG); Van Setten 755, culta (WAG).

POLYGALACEAE

Muraltia mitior (Bergius) Levyns ex Fourc., Bot. Surv. S.Afr. mem. no.20:61 (1941)
Atlas. 4.t.48. *Spartium africanum frutescens ericae foliis.*
Commelin. Hort. Amst. 2:193 t.97. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Polygala heisteria* L. 1753:704 – not cited in the protologue – Linn. 1763:989, Burm.f. 1768 P.F.C.:20.
Heisteria mitior Bergius 1767:187 'vix bona'.
Polygala stipulacea L. 1771:260 and 437, [Hort. Cliff.: 352 and 502, V.Royen:393.1, ms LINN], Burm.f. 1768 P.F.C.:20, Persoon 1797:677, Willd. 1800:890, Kraus 1893:116.
Muraltia stipulacea (L.) DC.1824:336 – Huth.
Taxonomic notes. Caspar Commelin was convinced that he was describing a papilionaceous plant *'Spartium'.* Yet the Plate 97 has been consistently cited as a *Muraltia,* a genus of the *Polygalaceae.* Confusion between these families has another example in *Ulex capensis* L., which is *Nylandtia spinosa* (L.) Dumort. (cf. the discussion on the latter species). I have tried to find a match for Commelin's plate in the *Leguminosae,* e.g. *Aspalathus,* but I failed. I believe *Muraltia* is correct, but *M.mitior* is more likely than *M.stipulacea* and *M.heisteria.*
Polygala heisteria L. could be typified by LINN 882.33, but this specimen was probably added to Linnaeus' herbarium after 1753; H.S.C. 352 probably is a better choice.
Polygala stipulacea L. is based probably on LINN 882. 36.
Heisteria mitior Bergius is typified here by Grubb s.n. C.B.S. (SBT).
Distribution. South Africa.
Introduction ante 1701. Commelin did not specify the source of his plant.
Specimens seen. Esterhuysen 19188 (S); Grubb s.n. (SBT); Schlechter 7779 (S).

Nylandtia spinosa (L.) Dumortier, Comm. Bot.: 31 (1822)
Atlas. 8 t.73. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Taxonomic notes. *Polygala spinosa* L. 1753:704, is based on *Polygala* 17 in Am. Ac. 1751,2:141. LINN 882.17 *'Polygala spinosa'* cannot be the type, as the specimen was received from Tulbagh ca.1769. LINN 882.18 is the same species but not the type either, because it has only a number '25'. Kiernander's thesis 'Radix Senega' of 1749, reprinted in Am. Ac. 2:126-153 contains a diagnosis and a description of this species, the description could serve as the type.
The genus *Nylandtia* was taken up for this species recently, previously it was usually named *Mundia spinosa* (L.) DC. *Mundia* H.B.K. 1823 (= *Mundtia* Harvey) is antedated by *Nylandtia* Dumort. 1822 as discussed by Bullock in Kew Bull., 1965,19:202. Dyer proposed in Taxon 1967,16:249 conservation of *Mundia,* but this was not accepted, see Taxon 1968,17:465. The genus is monotypic.
Ulex capensis L. 1753:740 is the same species, *Mundia capensis* (L.) Druce is based on it.
Distribution. South Africa: Cape Province.
Introduction ante 1706. No earlier record of this species in cultivation is known to me. Bean in Chittenden, Dict. Gard.: 1326 gives 1780 as year of introduction. I do not know this plant to be cultivated at present. Simon van der Stel illustrated the species in his journal of 1685.
Specimens seen. LINN 882.17 & 18; Goldblatt 2188 (WAG); Bayliss 5873 & 6672 (WAG).

Polygala bracteolata L., Sp. Pl.:702 (1753)
Atlas. 8 t.39. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Polygala bracteolata. Atlas 8 t.39

Taxonomic notes. I did not investigate the typification of the name *P.bracteolata.* The specimen LINN 882.12 has not the number of the species in Sp. Pl., 5, written on it, it probably is not the type.
The leaves of Moninckx's plant are much broader than those of the specimens seen.
Distribution. South Africa: Cape Province including the Cape Peninsula.
Introduction ante 1706. The first illustration of this species probably is Plukenet 1691 t.53 f.2, it could be the type.
Specimens seen. LINN 882.12; Coppejans 1054 (WAG); Zeyher s.n. (SAM 14161).

Polygala myrtifolia L., Sp. Pl.:703 (1753)
Atlas. 2 t.12. *Polygala arborea Myrti-folia Capitis Bonae Spei, Floribus albis, intus Purpureis.*
Dutch: Caapse Boomachtige Kruijs-Bloemen, met Myrtus bladeren, witte en van binnen Purpurverwige Bloemen.
Commelin. Hort. Amst. 1:87 t.46. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Polygala myrtifolia* L. 1753:703, [Hort. Cliff.:353.3, Am. Ac. 2:138.6, ms LINN, Ray 1704: 640], Burm.f. 1768 P.F.C.:20, Willd. 1800:884, Poir.

Polygonum orientale. Atlas 7 t.8

in Lam. 1804:491, Sweet 1818:158, Kraus 1893:116, Huth.
Taxonomic notes. The specimen LINN 882.14 was designated as lectotype of *Polygala myrtifolia* by Levyns 1955:19. Probably '7 *myrtifolia*', 292 S-Linn, is a better choice.
The illustration gives the impression that the plant has opposite leaves, as is typical of *P.fruticosa* Berg., but Commelin wrote that the leaves are without any order.
Distribution. South Africa: Cape.
Introduction ante 1691. Commelin received his plant from the Cape. The editors credited Huydecoper for the introduction. The species is represented in the Codex of the Duchess of Beaufort 1 t.58 f.1.
Specimens seen. LINN 882.14; H.S.C. 353 (BM); Bayliss 6784 (WAG); Goldblatt 2299 (WAG); Wijnands 920 (WAG).

POLYGONACEAE

Polygonum orientale L., Sp. Pl.:362 (1753)
Atlas. 7 t.8. *Persicaria Orientalis Nicotianae folio*

Calyce florum purpureo Tournef: Coroll: Inst: (Tournefort 1703:38).
Commelin. Rar. & Exot.:43 t.43. Idem.
Artist. Not signed (1703-1705).
Citations. *Polygonum orientale* L. 1753:362, [Hort. Cliff.:42.6 'fig. bona', Hort. Ups.:96.3, V.Royen:216.6, ms LINN, Boerhaave 1719,2:87.11, Fabricius 1763: 45], Burm.f. 1768 Fl. Ind.:89, Willd. 1799:488, Huth.
Taxonomic notes. *Polygonum orientale* has a new nomen specificum legitimum in Sp. Pl; *'stipulis hirtis'* agrees well with the hairy ochreae in LINN 510.16 '13 *orientale*', which is proposed here as the lectotype. Commelin's plant is the same species, although the ochreae are not shown as hirsute in the plate. His specimen was a cultivated one, grown far outside its natural environment which explains its somewhat unusual habit. *P.orientale* is an East-Asian species but is very widely distributed and by being an attractive plant it is and was often grown as an ornamental. This may explain why Commelin received it twice from Turkey where *P.orientale* is not found in the wild.
No specimen was found in herb. Tournefort Coroll. (P).
Distribution. E.Asia, Himalaya.
Introduction. Commelin received seeds from Tournefort and Gundelsheimer from their expedition to the Orient, probably around 1703. Later Sherard also sent seeds (from Smyrna).
Specimens seen. LINN 510.16, lectotype; cultivated specimen from the Hortus Upsaliensis (S-Linn).

PORTULACACEAE

Anacampseros telephiastrum DC., Cat. Hort. Monsp.:77 (1813)

Atlas. 4 t.39. *Portulaca Africana sempervirens Flore rubicundo.*
Commelin. Hort. Amst. 2:177 t.89. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Portulaca anacampseros* L., 1753:445-6, [Hort. Cliff.:207.1, Hort. Ups.:146.1, ms LINN, Ray 1704:507, Boerhaave 1719,1:220.5, Tilli 1723:138], Burm.f. 1768 P.F.C.:13, Haw. 1803:141.
Talinum anacampseros (L.) Willd. 1799:863.
Anacampseros telephiastrum DC. 1813:77, Huth, Poellnitz 1933:425.
Taxonomic notes. Linnaeus provided a new nomen specificum legitimum and a descriptive note in Sp. Pl., indicating that he had a specimen at hand when writing the entry for *Portulaca anacampseros.* No specimen is however available in the Linnean herbarium, nor did I find one in the Clifford herbarium.
Dillen 1732 t.281 f.363 seems to me a suitable lectotype. The plate is annotated by Linnaeus as *Portulaca anacampseros,* cf. Schmidt 1965:102.
Distribution. South Africa: S.W.Cape, including the Cape Peninsula.
Introduction ante 1700. Commelin gives no information on the source of his plant. It was propagated by cuttings and seed. The species is also represented in the Codex of the Duchess of Beaufort 1 t.10 f.2 & t.36 f.2.
Specimen seen. Bolus 12935 (K).

Portulaca pilosa L., Sp. Pl.:445 (1753)

Atlas. No water-colour present.
Commelin. Hort. Amst. 1:9 t.5. *Portulaca curassavica angusto, longo, lucidoque folio, procumbens, floribus rubris.* Par. Bat. Prod. (Hermann 1689:367).
Dutch: Americaansche porceleyne met smalle, lange, blinkende bladeren, met nederliggende rankxkens, en rode bloemen.
Citations. *Portulaca pilosa* L. 1753:445, [ms LINN, Volckamer 1700:341, Boerhaave 1719,1:220.4], Aublet 1775:475, Gaertn. 1791:213, Willd. 1799:860, Haw. 1803:137, Stearn 1961:LI.
Sesuvium portulacastrum (L.) L., Syst. ed. 10,1759: 1058 – Huth.
Taxonomic notes. *Portulaca pilosa* L. 1753 has an annotation in the protologue indicating that Linnaeus had a specimen at hand. The specimen '2 *pilosa*' LINN 625.2 therefore is the type. I am not able to place the plate in one of the varieties in Legrand's (1962) taxonomy of the species. No specimen has been found in Herb. V.Royen (L).
Huth's identification as *Sesuvium portulacastrum* (L.) L., Syst. Nat. ed.10, 1759,2:1058 is an error. This species of *Aizoaceae* is based on *Portulaca portulacastrum* L., Sp. Pl. 1753:446. This species was also known in Holland from a plant grown by Gaspar Fagel from seed received from Curaçao. Hermann mentioned it in 1689:367 and described and illustrated it in 1698:212. Linnaeus cited Hermann but provided a new nomen specificum legitimum and added a note, so he may have had a specimen at hand. There is however no specimen in LINN and as all information in the diagnosis and note can be gleaned from Hermann's plate, it is proposed as the type.
The species occurs on tropical and subtropical shores, the type-locality is Curaçao.
Distribution. Tropical America, naturalized all over the tropics.
Introduction ante 1688. Commelin does not give any information on the origin of his plant.
Breyne and Hermann mentioned it in 1689.
In his text Commelin states that this plant must be cultivated in glass houses with stoves, so Amsterdam had such a facility.
Specimens seen. LINN 625.2; Faden 74/1013 (WAG); Britton s.n. (K); Simmonds s.n. (K).
Sesuvium portulacastrum (L.) L.: P.de Wilde 89, Curaçao (WAG); Dwyer c.s. 4692, Panama (WAG); Sterringa 12385, Suriname (WAG); Rodrigues c.s. 300, Moçambique (WAG); Morton & Sesay 703, Sierra Leone (WAG); Jeswiet 1052, Java (WAG).

Talinum fruticosum (L.) A.L.Jussieu, Gen. Pl.: 312 (1789)

Atlas. Not represented in the atlas.

Commelin. Hort. Amst. 1:7 t.4. *Portulaca americana latifolia erecta floribus albis.* Parad. Bat. Prod. (Hermann 1689:367 '*Portulaca Americana seu Curassavica* . . .').

Dutch: Breet-bladerige, regt-opstaande americaansche porceleyne, met witte bloemen.

Citations. *Portulaca paniculata* Jacq. 1760:22 – not cited in the protologue – Linn. 1762:640, [ms LINN, Sloane 1707:205 '?', Tilli 1723:138], Haw. 1803:140, Stearn 1961:II.

Talinum paniculatum (Jacq.) Gaertn. 1791:219.

Talinum crassifolium Willd. 1799:862 – not cited in the protologue – Huth.

Talinum crassifolium Willd. var. *albiflorum* DC. 1828: 357.

Talinum fruticosum (L.) Juss. 1789:312 – not cited in the protologue – Willd. 1799:864, Loudon 1830: 189.

Taxonomic notes. The plant shown in Commelin's Plate 4 represents the species currently known as *Talinum triangulare* (Jacq.) Willd. The plate indicates the triangular peduncle, which is typical for this species, only vaguely by an oblique shadowing of the peduncle. Also in other early drawings of this taxon, viz. Plumier 1757 t.150 and Jacquin 1777 t.52, the triangular peduncle is not clearly depicted.

Commelin described the colour of the flowers as white, but the form in which the species is best known has pink flowers. Jacquin (1763:148) described the flowers of *Portulaca triangularis* as yellow; he published the name *Portulaca crassicaulis* Jacq. 1777 for the form with pink flowers. The yellow-flowered form is the common one in the northern Caribbean Islands, the pink form becoming frequent towards the southeast. The forms do occur together, however, in mixed populations. Also white-flowering plants are known.

Also Hermann (1689:367) mentioned *'floribus albis'*. He renamed his plant *'Chamaecistus Americanum Portulacae folio, flore albo'* (Hermann 1698:121) and clearly described the triquetrous peduncles and diphyllous calyx. His plant was grown from seed received in 1688 'ex insula Crucis' (St Croix, Virgin Islands). Plukenet (1691 t.105 f.6) published an illustration using Hermann's phrase-name of 1689.

White-flowered plants are mentioned in several recent floras, DeCandolle (1828) already published *Talinum crassifolium* Willd. var. *albiflorum* DC. This taxon is not represented in G-DC, so that Commelin's Plate 4 is designated here as the type of var. *albiflorum* DC.

Commelin described his plant as annual, whereas *Talinum triangulare* is actually a perennial species. It can, however, be easily grown from cuttings or seed as an annual plant, as is commonly practised all over the tropics where *T. triangulare* is grown as a vegetable. The inflorescence shown in Commelin's plate is a corymboid thyrsus. This is the normal condition in opulent hothouse-grown specimens. In nature the inflorescence usually takes the shape of a simple raceme. This variability in shape of the inflorescence led Linnaeus to a profound confusion of *T. triangulare* and *T. paniculatum*, as will be discussed later. Geesink (1971) analysed the morphology of the inflorescence in *Talinum*.

Portulaca triangularis Jacq. (1760:22) is validated by the diagnosis *'Portulaca pedunculis multifloris triangularibus'*. Jacquin cited 'Plum. ic. 150 f.2' in the protologue. This reference is to Burman's edition of Plumier, 1757:142 t.150 f.2. In the apparent absence of an authentic Jacquin specimen this illustration is designated here as the lectotype. The illustration is a poor one, but it allows for the identification as *Talinum triangulare* as currently understood. The Committee for Spermatophyta of the I.A.P.T. interpreted Plumier's plate as such, a rather authoritative identification (see Taxon 20:385). Also Urban (1920:71) identified the plate as such. In Burman's edition of Plumier *'Helianthemum frutescens, Portulacae folio'* is cited (Plumier 1703:7). Burman's own diagnosis reads: *'Portulaca foliis obovatis, depressis, caule fruticoso, floribus racemosis'*.

Portulaca fruticosa L., Syst. Nat. ed.10, 1759:1045 is validated by the diagnosis *'Portulaca foliis obovatis planiusculis, pedunculis racemosis, caule fruticoso'*. The diagnostic characters are cited almost literatim from Burman's diagnosis, although the latter is not cited expressis verbis in the protologue.

A specimen *'Portulaca fruticosa'*, annotated later as *'Portulaca racemosa'*, presented by Linnaeus to Dahl, is preserved in the Linnean herbarium in Stockholm. It is a poor fragment, so that the Linnean diagnosis cannot have been based on it. I cannot identify the specimen, it is not *Talinum fruticosum*.

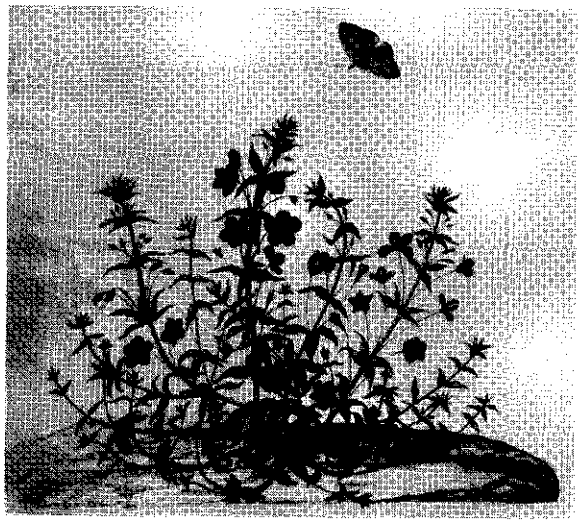
In the absence of a voucher for the diagnosis in the Linnean herbaria I designate Plumier's Plate 150 f.2 as the lectotype of *Portulaca fruticosa* L. (1759). This name and *Portulaca triangularis* Jacq. (1760) are based on the same type, but the former has one year priority. Linnaeus was extremely concise in Syst. Nat. ed.10. Essentially the species described in Species Plantarum are listed with their numbers in that work. Additional species are intercalated and provided with a letter, here: 'A' for *Portulaca fruticosa*. In the second edition of Species Plantarum Linnaeus numbered the intercalated species. The diagnosis for *Portulaca* 5 *racemosa* reads *'Portulaca foliis obovatis planiusculis, racemo simplici triquetro'*. This is Burman's diagnosis again with the addition of *'triquetro'*, adopted from Jacquin's *Portulaca triangularis* (1760). Since Jacquin is cited in the Linnean protologue as is Plumier 1703:7 and Plumier 1757 t.150 f.2, I regard this as circumstantial

evidence confirming the choice of the latter illustration as lectotype of *Portulaca fruticosa* L.
It might well be supposed that Linnaeus changed the epithet from *'fruticosa'* to *'racemosa'* because of *Portulaca paniculata* Jacq. (1760), which was also described as fruticose. Linnaeus, incorrectly, considered the racemose and the paniculate inflorescence essential characters for *P.racemosa* (≡ *P.fruticosa*) and *P.paniculata,* respectively. For this reason, Commelin's Plate 4 was cited under *P.paniculata* by Linnaeus.
Talinum crassifolium Willd., the name used by Huth for Commelin's plant, is illegitimate since *P.crassicaulis* Jacq. is cited in synonymy in the protologue. Jacquin's name is lectotypified here by Plate 52 in Hortus Botanicus Vindobonensis (1777); *Talinum crassifolium* is a homotypic synonym. Both names are heterotypic synonyms of *Portulaca fruticosa* L.
The first to combine *P.fruticosa* in *Talinum* was A.L. de Jussieu, who published *Talinum fruticosum* and *Talinum patens.* The latter name is based on *Portulaca patens* L. 1771, an illegitimate nomen novum for *P. paniculata* Jacq. Jussieu thus clearly recognised the two species confused by Linnaeus.
Summing up I propose the following synonymy (for later synonyms I refer to Von Poellnitz (1934)):
Talinum fruticosum (L.) Juss., Gen. Pl. 312. 1789.
basionym: *Portulaca fruticosa* L., Syst. Nat. ed.10, 1759:1045.
lectotype: Plumier (ed. Burman), Plantarum Americanarum fasc. 6:142 t.150 f.2. 1757.
homotypic synonyms:
Portulaca triangularis Jacq., Enum. Syst. Pl. 22. 1760.
Talinum triangulare (Jacq.) Willd. 1799:862.
Portulaca racemosa L., Sp. Pl. ed.2:640. 1762.
Talinum racemosum (L.) Rohrb. in Mart. Fl. Bras. 14,2:297. 1872.
heterotypic synonyms:
Portulaca crassicaulis Jacq., Hort. Bot. Vindob, t.52.
Talinum crassifolium Willd., Sp. Pl. 862. 1799.
lectotype: Jacquin, Hort. Bot. Vindob. t.52.1777.
Talinum paniculatum (Jacq.) Gaertn. is the name often attributed to Commelin's Plate 4. Gaertner cited the plate when publishing the combination. This misinterpretation started when Linnaeus (1762:640) referred to Commelin under *Portulaca paniculata* Jacq.
Jacquin's diagnosis of *Portulaca paniculata* in Enum. Syst. Pl.22 (1760), reads: *Portulaca floribus paniculatis.* This extremely concise diagnosis was later (1763:148) considerably enlarged by Jacquin. The paniculate inflorescence with numerous small red flowers is described. The description leaves no doubt as regards the identity of Jacquin's plant: it is the species currently known as *Talinum paniculatum.* No authentic material of this species seems to have been preserved. Jacquin twice published an illustration of his species. The first was a drawing of a cultivated plant in Vienna [t.151 in Hort. Bot. Vindob. 2(1772)], the second was his original drawing [t.136 in Select. Stirp. Amer. Picta (1780)]. This latter illustration is designated as the lectotype of *Portulaca paniculata* Jacq.
Linnaeus took up Jacquin's species in Sp. Pl. ed.2,1762: 640. He added several synonyms: Commelin's Plate 4, Sloane 1707:205, and P.Browne 1756:234. Linnaeus probably cited these references for *P.paniculata* since the accompanying descriptions mention a paniculate inflorescence. Commelin's plant is *T.fruticosum;* I cannot identify the plant described by Sloane; Browne's plant certainly was not a *Portulaca* if his description of the calyx 'perianthum pentaphyllum' is correct. Linnaeus accepted the pentaphyllous calyx as a diagnostic character for *P.paniculata* in 1762, an error that long persisted in the literature on this taxon.
Jacquin was well aware of Linnaeus' misinterpretation of his species. He politely corrected Linnaeus in 1763 by describing the calyx as 'bifidus' and adding after his diagnosis 'Caetera, ut in charactere Linnaeano'.
I suspect that Linnaeus had no clear concept of Jacquin's species. There are two specimens of it in the Linnean herbarium, LINN 625.5 and 625.6, but Linnaeus did not annotate them. In 1767 (Syst. Nat. ed. 12:328) Linnaeus used the name *Portulaca fruticosa* for his taxon with the pentaphyllous calyx. In 1771 (Mantissa altera:242) Linnaeus added to the confusion by describing *Portulaca patens* (= *P.paniculata* Jacq.), with a 'calyx diphyllus', differing 'omnino' from *P. paniculata* 'cui flores albi et Calyx pentaphyllus'. The white flowers probably are an indirect reference to Commelin.
In conclusion I consider the application of the names *Talinum fruticosum* (L.) Juss. and *T.paniculatum* (Jacq.) Gaertn. quite unambiguous if they are interpreted from the first publication of their respective basionyms. Linnaeus confused the matter seriously, but this fact need not prevent the correct use of the names. It is most inconvenient that the well-known name *Talinum triangulare* has to be replaced by *T. fruticosum.* I see no basis for rejection of the latter name.
Distribution. Tropical America.
Introduction. Commelin received his plant from America.
Specimens seen. Breteler 4552, fl. yellow (WAG); Philcox & Fereira 4463, fl. white (K); Sintenis 6835, fl. pink (K); Valeur 689, fl. white (K); Weberbauer 7629, fl. white (K); Cowan 1580, fl. yellow (P); Hahn 1319, fl. yellow (P).

PRIMULACEAE

Anagallis monelli L., Sp. Pl.:148 (1753)

Atlas. 1 t.4. *Anagallis Caerulea, foliis binis ternisve ex adverso nascentibus.* B: Pin. (Bauhin 1623:252).



Anagallis monelli. Atlas 1 t.4

Anagallis tenui Folia Monelli. Clusii (Clusius 1611, unnumbered page).
Dutch: Guijchel-heyl, met Schoon-blaauwe Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Both Bauhin and Clusius are cited in the protologue of *Anagallis monelli* L. 1753:148. This species has terete stems also shown in the water-colour.
Distribution. Mediterranean area.
Specimens seen. Balansa 521 (WAG); Bourgeau 847 (WAG).

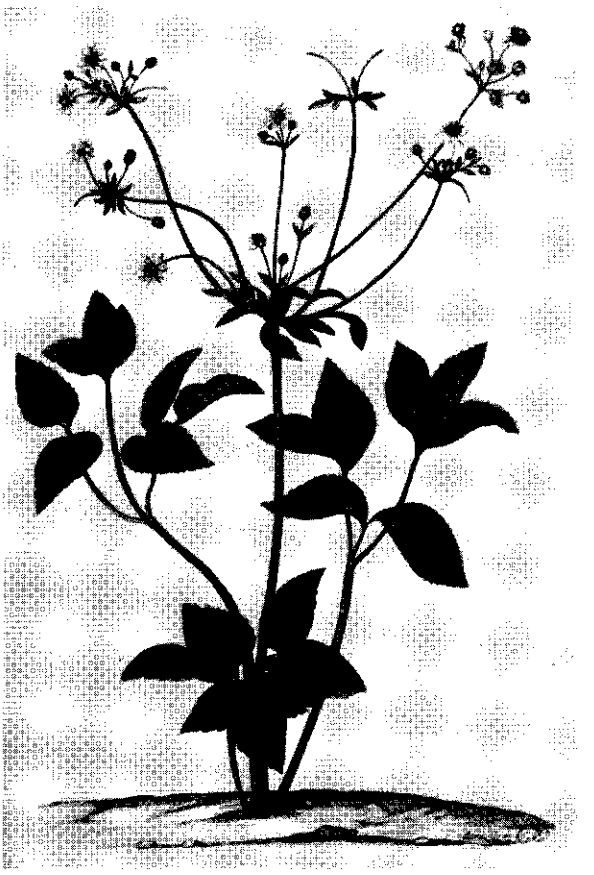
Lysimachia atropurpurea L., Sp. Pl.:147 (1753)
Atlas. 6 t.49. *Lysimachia Orientalis angustifolia flore purpureo* Tournef.: Coroll: instit: (Tournefort 1703:7).
Commelin. Rar. & Exot.:33 t.33. Idem.
Artist. Maria Moninckx (1703–1705).
Citations. *Lysimachia atropurpurea* L. 1753:147 '93 t.33', [Hort. Cliff.:51.2, Hort. Ups.:37.1, V.Royen: 415, ms LINN], Lam. 1792:570, Willd. 1797:817, Huth.
Taxonomic notes. As there is a new nomen specificum legitimum in Sp. Pl. for this species, LINN 207.5 '3 *atropurpurea*', is proposed as the type.
No specimen was found in herb. Tournefort Coroll. (P).
Distribution. S.W.Asia.
Introduction ante 1705. Commelin did not state the source of his plant. It was probably sent by Gundelsheimer and/or Tournefort around 1703. This attractive species is rare in cultivation at present.
Specimens seen. H.S.C. 51.2 (BM); LINN 207.5, type; Wijnands 724 and 861, culta (WAG); Noe 237 (WAG); Heldreich s.n. (WAG); Balansa 294 (WAG); Orphanides 410 (WAG); Tournefort s.n. (P-Tournef. 680).

Lysimachia atropurpurea. Atlas 6 t.49

PROTEACEAE

Leucadendron argenteum (L.) R.Br., Transact. Linn. Soc. 10:52 (1810) [Pl.18]
Atlas. 3 t.25. *Argyrodendron Africana foliis sericeis & argenteis.*
Leucadendros Africana, Arbor tota argentea sericea, foliis integris. Pluckenetii Phytographiae Tabula CC. (Plukenet 1692 t.200).
Commelin. Hort. Amst. 2:51 t.26. *Argyrodendros africana foliis sericis et argenteis.*
Artist. Jan Moninckx (1700).
Citations. *Protea argentea* L. 1753:94, [Hort. Cliff.: 29.1, ms LINN, Ray 1704:9, Boerhaave 1719,2:195], Burm.f. 1768 P.F.C.:4, Willd. 1797:529.
Leucadendron argenteum (L.) R.Br. 1810:52, Huth, Williams 1972:132.
Taxonomic notes. Commelin's young plant, probably 2-3 years old, may have been a male specimen (I.Williams, private communication). The infrutescence was sent from the Cape. The diagnosis of *Protea argentea* in Sp. Pl. is taken from Hort. Cliff., the specimen H.S.C. 29.1 is the type (Williams 1972:134).
Distribution. South Africa: Cape Province, map 24 in Williams 1972:151.

Introduction. Breyne had the species illustrated in 1678:49.
Commelin had several plants, because seeds were sent almost annually from the Cape.
The largest plant was donated by Willem Adriaan van der Stel when 'schepen' of Amsterdam, before he became Governor of the Cape (1699). As regards the identity of Commelin's other Proteas, one can only speculate, other *Leucadendron* species known about 1700 could include:
L.coniferum (L.) Meisn. [Hort. Cliff.:29.2, Van Royen 1740:184.2];
L.xanthoconus (O.Kuntze) K.Schum. [Petiver 1695:22, Hermann 1689:372, Boerhaave 1719,2:t.197 & t.200, Van Royen 1740:185.10 and 9];
L.salignum Berg. [Breyne 1678:9, Plukenet 1692:229 f.6, Hermann 1689:372, Boerhaave 1719,2:t.203];
L.floridum R.Br. [Plukenet 1692 t.229 f.4, Tournefort 1700:467, Boerhaave 1719,2:204, Van Royen 1740: 185.8];
L.levisanus (L.) Berg. [Petiver 1695:56, Plukenet 1700 t.343 f.47, Boerhaave 1719,2:t.202, Burman 1738 t.100 f.2];
L.pubescens R.Br. [Boerhaave 1719,2:t.199 as to cone and fruit];
L.rubrum Burm.f. [Boerhaave 1719,2:201 excl. fruit, Burm. 1737:20]. These references are based on Williams (1972).
Commelin intended to publish his other *Proteaceae* in a third volume, that was never published.
L.argenteum is in cultivation.
Specimens seen. H.S.C. 29-1, type (BM); Werdermann et Oberdieck 757 (WAG); Lewis Grant 2322 (WAG); Drège s.n. (S).



Knowltonia vesicatoria. Atlas 5 t.1

RANUNCULACEAE

Knowltonia vesicatoria (L.f.) Sims, Curt. Bot. Mag. 20 t.775 (1804)

Atlas. 5 t.1. *Ranunculus Aethiopicus foliis rigidis, Floribus ex luteo virescentibus.*
Dutch: Moorelands hanevoet met styve bladeren, en geelgroene bloemen.
Commelin. Hort. Amst. 1:1 t.1. Idem.
Artist. Maria Moninckx (1688-1690).
Citations. *Adonis capensis* L. 1753:548, [ms LINN, Boerhaave 1719,2:62, Burm. 1738:146], Bergius 1767: 149 'bona', Burm.f. 1768 P.F.C.:16.
Knowltonia capensis (L.) Huth – Stearn 1961:L.
Knowltonia rigida Salisb. 1696:372, Huth.
Knowltonia vesicatoria (L.f.) Sims – Hutchinson 1946: 559-60 with reproduction of the plate, Rasmussen 1979:4-7, 27.
Anamenia coriacea Ventenat 1803 t.22.
Adonis coriacea (Vent.) Poir. 1810:146.
Taxonomic notes. The plate does not represent *Adonis capensis* L. if this name is typified by LINN 714.6 '4 *capensis*' as discussed amply by Rasmussen l.c. It has a better match in LINN 714.8, the type of *Adonis vesicatoria* L.f. 1782:272.
Knowltonia rigida Salisb. is a superfluous name for *K. capensis.*
Anamenia coriacea Vent. is a synonym of *L.versicatoria,* typified by Jussieu 10574 by Rasmussen (l.c.). The identification was kindly confirmed by Dr Hanne Rasmussen-Larsen.
Distribution. South Africa: Cape Province, see Rasmussen 1979:42 (map 5).
Introduction 1687. Commelin received the plant from the Cape in 1687, sent by Simon van der Stel. The species was described by Lobelius (1655) as *Ranunculus perelegans* D. Franqueville, *foliis aculeatis* (Rasmussen l.c.).
Specimens seen. LINN 714.8; Acocks 19626 (K); Fries c.s. 1479 (S); Thunb. s.n. (S).

RHAMNACEAE

Ceanothus americanus L., Sp. Pl.:195 (1753)

Atlas. 2 t.21. *Euonymus Novi-Belgii, Corni Foeminae foliis.*

Ceanothus americanus. Atlas 2 t.21

Dutch: Nieuw-Nederlands Papenhout, met Cornoelje-Wijfkens Bladeren.
Commelin. Hort. Amst. 1:167 t.86. Idem.
Artist. Jan Moninckx (1689-1690).
Citations. *Ceanothus americanus* L. 1753:195, [Hort. Cliff.:73.5, Hort. Ups.:51, Act. Ups. 1741:77, V.Royen 435.4, ms LINN, Ray 1704:69, Gronovius 1762:33], Miller 1768, Gaertn. 1791,2:110, Willd. 1797:1114, Huth.
Taxonomic notes. The nomen specificum legitimum in Sp. Pl. for *Ceanothus americanus* differs from the phrase-names Linnaeus used in earlier works. '2 *americanus*', received from Kalm, is therefore proposed here as lectotype (LINN 264.1). An isotype is in H, see Kukkonen & Viljamaa 1973:316.
Distribution. E.North America, from Quebec to Florida and Texas.
Introduction ca.1686. The plant was grown from seed given by the Rev. Henricus Selijns, a minister of the faith who lived in America for some time.
The plant flowered and fruited after four years.
At present, this species is commonly cultivated.
Specimens seen. '2 *americanus* K', lectotype (LINN 264.1); V.Royen sr. (L 91355-85, 908190-822 & -829); Macoun 287 (K); Moldenke 1293 (K); herb. Gronovius (BM); Marie-Victorin c.s. 46382 (WAG).

Colubrina arborescens (Mill.) Sarg., Trees & Shrubs 2:167 (1911)
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:175 t.90. *Arbor baccifera indica, foliis majoribus splendentibus, flore pentapetalo.* Dutch: Indiaansche besie-dragende boom, met grote blinkende bladeren, en vijfbladerige bloemen.
Citations. *Rhamnus colubrinus* Jacq., Enum. Select. Pl. 1760:16, Linn. 1762:280, [ms LINN], Jacq. 1776: 28, Willd. 1797:1096.
Ceanothus colubrinus (Jacq.) Lam. 1793:90 – Huth.
Colubrina arborescens (Mill.) Sarg. 1911:168, Johnston 1971:28.
Taxonomic notes. *Ceanothus arborescens* Mill. is typified by P.Miller, culta Chelsea Garden, grown from seed sent by Catesby from Providence, Bahamas (BM), designated by Johnston (l.c.).
Commelin's plate is the type of *Rhamnus colubrinus* Jacq. and of *Colubrina ferruginosa* Brogn. 1827.
Distribution. Florida to Honduras, West Indies.
Introduction 1686. Commelin's plant was grown from seed received in 1686. The seed was from a mixed lot, no origin is given. I know of no earlier introduction.
I do not know this species in cultivation in Botanical Gardens presently.
Specimens seen. LINN 262.15; Fosberg 54083 (K); Bijhouwer 543 (WAG); Leemans 17 (WAG); Le Gallo 271 (U); Wagner 4918 (U).

Noltea africana (L.) Harvey & Sonder, Fl. Cap. 1:478 (1860)
Atlas. 5 t.49. *Alaternoides Africana Lauri serratae Folio.*
Commelin. Prael. Bot.: 61 t.11. Idem and *'Ricini Africani salicis folio flore viridi* Witsen Codex'.
Artist. Maria Moninckx (1686-1705).
Citations. *Ceanothus africanus* L. 1753:196, [Hort. Cliff.:73.6, ms LINN, Boerhaave 1719,2:214.3], Burm.f. 1768 P.F.C.:6, Miller 1768, Willd. 1797:1115, Ait.f. 1811:62.
Taxonomic notes. *C(e)anothus africanus* L. has a new nomen specificum legitimum in Sp. Pl.; *'stipulis subrotundis'* cannot be taken from Hort. Cliff.:73.6 (no specimen is available in H.S.C.) or Van Royen. LINN 264.5 '3 *africanus*', a Clifford specimen, is proposed as the lectotype. It agrees with Commelin's plate.
It has also been suggested to me that the plate represents *Hartogia capensis* L.f. The close crenation of the leaves all along the margin in *Noltea* and not the wider crenation along the upper half in *Hartogia* (Bos 277 WAG) made me decide upon *Noltea africana.*

Phylica buxifolia. Atlas 5 t.50

Noltea africana is the type of the genus *Noltea* Reichenbach.

Introduction. Commelin had seeds from the Cape, no year is given, but it arrived frequently ('singulis ferme annis').

Specimens seen. LINN 264.5, lectotype; Bos 309 (WAG, K); Bayliss 6334 (WAG); Cooper 39 (K); Pappe s.n. (K).

Phylica buxifolia L., Sp. Pl.:195 (1753)

Atlas. 5 t.50. *Alaternoides Africana chamaemespili Folio rigidiore & minore, floribus albicantibus.*

Commelin. Prael. Bot.:62 t.12. Idem.

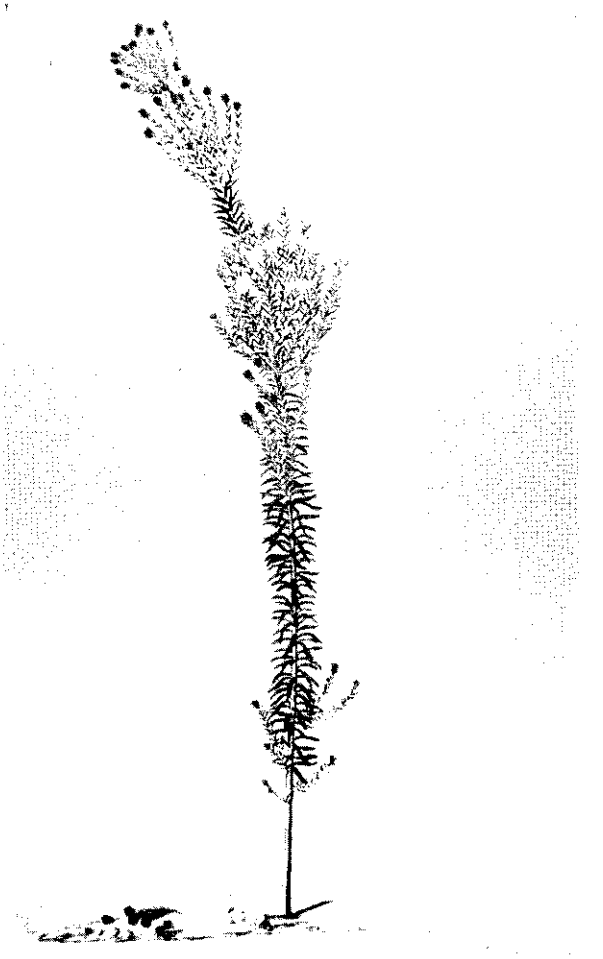
Artist. Jan Moninckx (1686-1702).

Citations. *Phylica cordata* L. 1762:283, [ms LINN], Burm.f. 1768 P.F.C.:6, Salisb. 1796:140, Willd. 1797: 1111, Poir. in Lam. 1804:291, Ait.f. 1811:21, Sweet 1818:44, Loudon 1830:89, Kraus 1893:116, Huth.

Taxonomic notes. Pillans 1942:32 reduced *Phylica cordata* L. to the synonymy of *Phylica buxifolia* L. The name *Phylica buxifolia* L. is typified by LINN 263.10 '*buxifolia* 3'.

For *Phylica cordata* L. no type is available according to Pillans (l.c.). I think Commelin's plate can serve as lectotype.

Distribution. South Africa: Cape Province.



Phylica ericoides. Atlas 3 t.1

Introduction ca.1700. No record of this species prior to Commelin's plate is known. Commelin writes that seed was sent almost annually to Holland from 'Africa' (the Cape).

Specimens seen. LINN 263.10, lectotype; Burchell 8237 (K); Schlechter 7830 (K); Coppejans 792 (WAG); Werdermann et Oberdieck 425 (WAG).

Phylica ericoides L., Sp. Pl.:195 (1753)

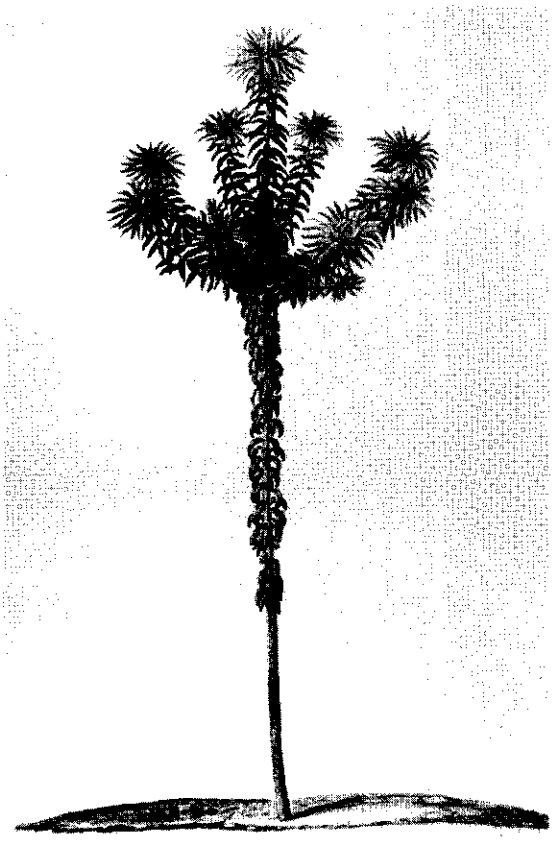
Atlas. 3 t.1. *Alaternoides Africana ericae foliis, Floribus albicantibus & muscosis.*

Commelin. Hort. Amst. 2:1 t.1. Idem.

Artist. Not signed (1699-1700).

Citations. *Phylica ericoides* L. 1753:195, [Hort. Cliff.: 70.1, Van Royen:199, ms LINN, Boerhaave 1719,2: 214.1], Bergius 1767:49, Burm.f. 1768 P.F.C.:6, Miller 1768, Willd. 1797:1108, Poiret in Lam. 1804:287, Sonder 1860:499, Kraus 1893:116, Huth, Pillans 1942:85.

Taxonomic notes. The name *Phylica ericoides* L. is

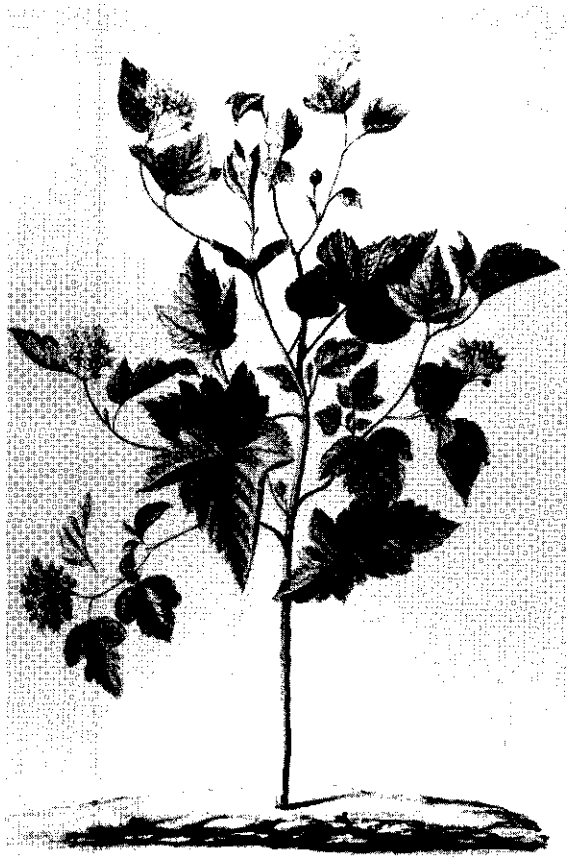


Phylica plumosa var. *squarrosa*. Atlas 6 t.1

typified by LINN 263.1 '1 *ericoides*', as there is a new nomen specificum legitimum in Species Plantarum for it.
The genus *Alaternoides* Adanson, Fam. Pl. 2:304. 1763 is based on this plate.
Distribution. South Africa: Cape Province.
Introduction 1697. Commelin received seeds in 1697 through Huydecoper, from Africa. It was sown in 1698. No earlier record is known to me.
Specimens seen. H.S.C. 70.1 (BM); '1 *ericoides*', lectotype LINN 263.1; Bayliss 6801 (WAG); Wijnands 900 (WAG).

Phylica plumosa L. var. **squarrosa** (Vent.) Sonder, Fl. Cap. 1:487 (1860)
Atlas. 6 t.1. *Alaternoides Africana Rosmarini latiore & pilosiori folio.*
Commelin. Prael. Bot.:63 t.13. Idem, and *Ricinus Africanus tomentosus flore rubro Codex Witsenii. Chamaelaea Africana tricoccos & tetracoccos taxifolio, fructu nigro, summis ramulis plumulis sive caesarie coronato.* (Plukenet 1700 t.342 f.3).
Artist. Jan Moninckx (1686-1702) .
Citations. *Phylica plumosa* L. 1753:195 – not cited in the protologue – Linn. 1762:283, [ms LINN, Burman 1738:117], Gaertn. 1788:115, Willd. 1797:1109, Poir. in Lam. 1804:290, Huth.
Phylica plumosa L. var. *squarrosa* (Vent.) Sond. 1860: 487 – Pillans 1942:83.
Phylica pubescens Wendl. ex. Willd. 1809:252 – Kraus 1893:116.
Phylica commelinii Sprengel, Ges. Naturfr. Berl. Mag. 1814,8:31 t.8 f.6, Sweet 1827.
Taxonomic notes. *Phylica plumosa* L. is based on Van Royen:199 in the first place. No specimen is available in the Van Royen herbarium. The species is represented in the Linnean herbarium by the central specimen on the sheet LINN 263.5; the specimen to the right is var. *squarrosa.*
Phylica squarrosa Ventenat, Malm. 1804:57 has a description only, there is no illustration. A specimen might be present at G.
The type of *Phylica commelinii* Sprengel has probably been destroyed at B (Prof. Dr. P.Hiepko, private communication); I propose Sprengel's illustration t.8 f.6 as the lectotype. De Candolle (1825:36) upheld *P.commelinii* but noted 'An satis a priore [*P.squarrosa*] differt ?' In my opinion this question should be answered in the negative.
Distribution. South Africa: Cape Province.
Introduction ante 1700. Commelin received seeds as *'Ricini rorismarini folio* montis Attaquae'. Attaquas Kloof is situated south of Oudtshoorn. Olof Bergh's expedition in 1699 passed this Kloof and Jan Hartog, who joined the expedition to collect plants, could well have collected the seeds received by Commelin (cf. Karsten 1951:104). Plukenet 1700 t.342 f.3 provided the first illustration of this taxon.
Specimens seen. LINN 263.5 ex Herb. Cliff., right hand specimen; Bos 262 (WAG); Burchell 8539 (K); Salter 1018 (K); Zeyher 1212 (K).

Phylica stipularis L., Mant. Alt.:208 (1771)
Atlas. 8 t.17. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).
Taxonomic notes. This identification is tentative. Only a few diagnostic characters are available, but stipules are shown. Also *Passerina vulgaris* (Meisn.) Thoday has been suggested to me, but the pentamerous flowers exclude that species.
Phylica stipularis is represented in the Linnean herbarium, LINN 263.7 *'stipularis'* probably is the type, it is from the Tulbagh list of circa 1769 (Savage 1945: 40).
Distribution. South Africa: Cape Province.
Introduction ante 1698. Linnaeus referred to Burman's Plate 43 f.2 1738, Pillans (1942:123) cited Breyne 1698 t.9 for the species.
Specimens seen. LINN 263.7; Goldblatt 1547 (WAG); Bos 286 (WAG); Wijnands 901 (WAG).
Icones. Mason pl.63 f.2 (1972).



Physocarpus opulifolius. Atlas 2 t.22

ROSACEAE

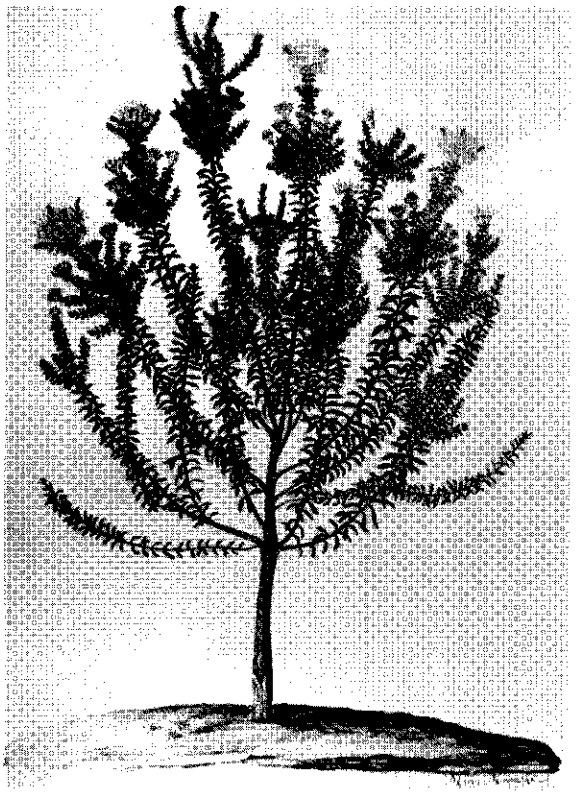
Physocarpus opulifolius (L.) Maxim., Act. Hort. Petrop. 6:220 (1879)
Atlas. 2 t.22. *Euonymus Virginiana Ribesii folio capsulis eleganter Bullatis.*
Dutch: Papenhout van Virginie, met Aalbesienbladeren, en cierlijk opgeblase Zaad-huijskens.
Commelin. Hort. Amst. 1:169 t.87. Idem.
Artist. Jan Moninckx (1691).
Citations. *Spiraea opulifolia* L. 1753:489, [Hort. Cliff.: 190.3, ms LINN, Boerhaave 1719,2:238.2, Gronovius 1762:77], Huth.
Taxonomic notes. Linnaeus provided a new nomen specificum legitimum for *Spiraea opulifolia* in Sp. Pl.; LINN 651.12 '6 *opulifolia*', received from Kalm, is proposed as lectotype. H.S.C. 190.3 (BM) is a paratype; no Gronovius-collection is found in BM that vouches for Linnaeus' citation 'Gron. virg. 55'.
Distribution. N.America, Quebec to Virginia.
Introduction. Commelin received his plant from Bishop Henry Compton of London. It flowered and fruited in 1691.
Wein (1930:162) gave 1683 as year of introduction.
Specimens seen. LINN 651.12, lectotype & 651.13; H.S.C. 190.3 (BM); Bijhouwer 300 (WAG); Roy 4333 (WAG); Ruisch 1427, culta (WAG).

RUBIACEAE

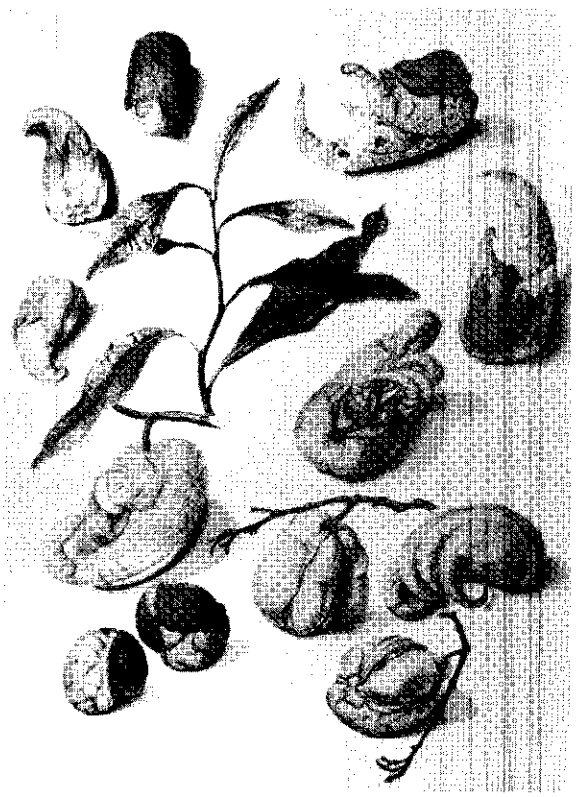
Mitracarpus hirtus (L.) DC., Prodr. 4:572 (1830)
Atlas. 8 t.13. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. The nomenclature of this species is intricate, *M. villosus* (Sw.) DC. is an alternative name. The most recent discussion on the subject provided Tjaden in Taxon 30:301-02 (1981). I accept *Spermacoce hirta* L. 1762 as the nomenclatural basis of De Candolle's *Mitracarpus hirtus* as I can see no exclusion in his statement 'et forte L.'. The holotype, designated here, is '*Spermacoce* 3 Br' LINN 125.8.
Dr E.Robbrecht kindly provided the identification of this water-colour.
Distribution. Tropical America, presently a pantropical weed.
Introduction. Maria Moninckx' water-colour is the earliest record of this species. Sloane's *'Pulegium fruticosum erectum, verticillis densissimis'* (1696:64) was cited for the species by Swartz, but Verdcourt (Kew Bull. 1975,30:319) showed it to be *Spermacoce verticillata* L. Most likely Commelin had the plant from the West Indies, the type-locality is Jamaica.
Specimens seen. LINN 125.8, holotype; Geerling & Bokdam 1266 (WAG); Leeuwenberg 5812 & 6424 (WAG); W.de Wilde c.s. 4201 (WAG). All the collections in WAG are from Africa, collected as *M. scaber* Zucc.

RUTACEAE

Agathosma serpyllacea (Licht. ex Roem. & Schult.) Bartling & Wendland, Beiträge 1:153 (1824)
Atlas. 6 t.18. *Spiraea Africana odorata, floribus suave rubentibus.*
Commelin. Rar. & Exot.:2 t.2. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Diosma rubra* L. 1753:198, [Hort. Cliff.: 70.1, 72.3, ms LINN], Bergius 1767:62, Miller 1768, Willd. 1797:1134, Sweet 1818:45, Kraus 1893:116. *Diosma oppositifolia* L. var. *rubra* (L.) Huth. *Agathosma serpyllacea* (Licht. ex Roem. & Schult.) Bartling & Wendland 1824:153 – Williams 1974:275.
Taxonomic notes. Williams 1974:275 showed LINN 270.4 '*rubra* 3' to be the type of *Diosma rubra* L. Since this sheet bears a specimen of *Diosma hirsuta* L. and one of *Coleonema album* (Thunb.) Bartl. & H.L. Wendl., Williams rejected the name under Art. 70 of the Code.
Later Williams (1981:99) narrowed his typification to



Agathosma serpyllacea. Atlas 6 t.18



Citrus medica 'Sarcodactyla'. Atlas 8 t.70

the right hand specimen, i.e. *Diosma hirsuta* L. *Diosma rubra* L. is therefore a synonym of *D.hirsuta* L. The epithet 'rubra' is taken from Commelin, it represents the third species mentioned in the protologue of *D. rubra* L.
Dr I.Williams, who confirmed the identification after examining Commelin's original, wrote to me 'One can even see the fruits with their horns which is something that the engraver missed in preparing his plate'.
The species is commonly cited as *Agathosma serpyllacea* Lichtenstein ex Roem. & Schult., Syst. Veg. ed. Nova 5:447 (1819-20). Here Roem. & Schultes published *Bucco serpyllacea* and cited *Agathosma serpyllacea* Licht., Spicil. Fl. Cap. MS as a synonym. Bartling & Wendland validated the name. Lichtenstein's type probably was destroyed at B (Prof.P.Hiepko, private communication).
Distribution. South Africa.
Introduction ante 1705. Seeds of this plant were received from the Cape. Plukenet 1696 t.347 f.4 probably is the same species.
Specimens seen. Goldblatt 2321 & 2170 (WAG); Acocks 15493 (K); Walgate 276 (K).

Citrus medica L., Sp. Pl.:782 (1753)
Atlas. 8 t.69. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Citrus medica L. 'Sarcodactyla'
Atlas. 8 t.70. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Citrus nobilis Lour., Fl. Cochinch.:466 (1790)
Atlas. 8 t.9. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).

Note. The three water-colours of *Citrus* fruits probably reflect Jan Commelin's early interest in *Citrus* cultivation, which is shown by his book Nederlantze Hesperides (1676).

Diosma hirsuta L., Sp. Pl.:198 (1753)
Atlas. 6 t.19. *Spiraea Africana odorata foliis pilosis.*
Commelin. Rar. & Exot.:3 t.3. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Diosma hirsuta* L. 1753:198, [Hort. Cliff.: 71.1, V.Royen 1740:434, ms LINN, Boerhaave 1719, 2:238.4, Tilli 1723:161], Bergius 1767:65, Burm.f. 1768 P.F.C.:6, Miller 1768, Willd. 1797:1134, Thunb.

1797:1, Sweet 1818:45, Loudon 1830:85, Kraus 1893: 116, Williams 1982:351.
Diosma oppositifolia L. var. *hirsuta* (L.) Huth.
Diosma pallida Salisb. 1796:142.
Taxonomic notes. The nomen specificum legitimum is taken from Hort. Cliff. H.S.C. 71.3, right hand specimen, is the lectotype. LINN 270.3 '2 *hirsuta*' ex herb. Cliff. is an isotype.
Diosma pallida Salisb. is a superfluous name for *D. hirsuta* L.
Distribution. South Africa: Cape, see Williams 1982: 357 for a map.
Introduction ante 1702. Commelin had seeds from the Cape, no year is given. He cites the Witsen Codex for the flowering period September and the use made of it by the Hottentots as an odorant. Plukenet (1691 t.279 f.5 and 1696 t.347) published earlier illustrations of *D.hirsuta.*
Specimens seen. H,S.C. 71.3, lectotype (BM); LINN 270.3; Drège 7130 (K).

Diosma oppositifolia L., Sp. Pl.:198 (1753) [Pl.46]

Atlas. 6 t.17. *Spiraea Africana foliis cruciatim positis.*
Commelin. Rar. & Exot.:1 t.1. Idem.
Artist. Jan Moninckx (1686-1705).
Citations. *Diosma oppositifolia* L. 1753:198, [Hort. Cliff.:71.2, V.Royen:435.2, ms LINN], Burm.f. 1768 P.F.C.:6, Willd. 1797:1133, Ait.f. 1811:29, Sweet 1818:45, Loudon 1830:85, Kraus 1893:116, Huth, Williams 1974:276, 1982:366.
Diosma acicularis Salisb. 1796:142.
Taxonomic notes. Williams 1974:275-276, discussed the name *Diosma oppositifolia* L. in detail. His conclusion is that this name can only be typified by Commelin's plate as the specimens of it in the Linaean Herbarium are not annotated as such and the cited plate of Seba represents *Diosma hirsuta* L. *Diosma oppositifolia* L. was generally known as *Diosma succulenta* Bergius, a later synonym. DC.1824:716 discussed the plate under *D.succulenta.*
Diosma acicularis Salisb. is a superfluous name for *D. oppositifolia* L.
Distribution. S.W.Cape, see Williams 1982:369 for a map.
Introduction ante 1702. Commelin received seed from the Cape, no year is given.
Specimens seen. Burchell 8361 (K); Stauffer 5024 (K); Coppejans 500 (WAG); Goldblatt 3700 (WAG).

Ruta graveolens L., Sp. Pl.:383 (1753)

Atlas. 8 t.49. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. 'Balkan peninsula and Krym; perhaps elsewhere in Mediterranean region; widely naturalized from gardens in S. & SC. Europe' (Flora Europaea 2: 227, 1968).
Introduction. *Ruta graveolens* was a common plant in herb gardens in Roman times already.

SAPINDACEAE

Melicoccus bijugatus Jacq., Enum. Syst. Pl.:19 (1760)

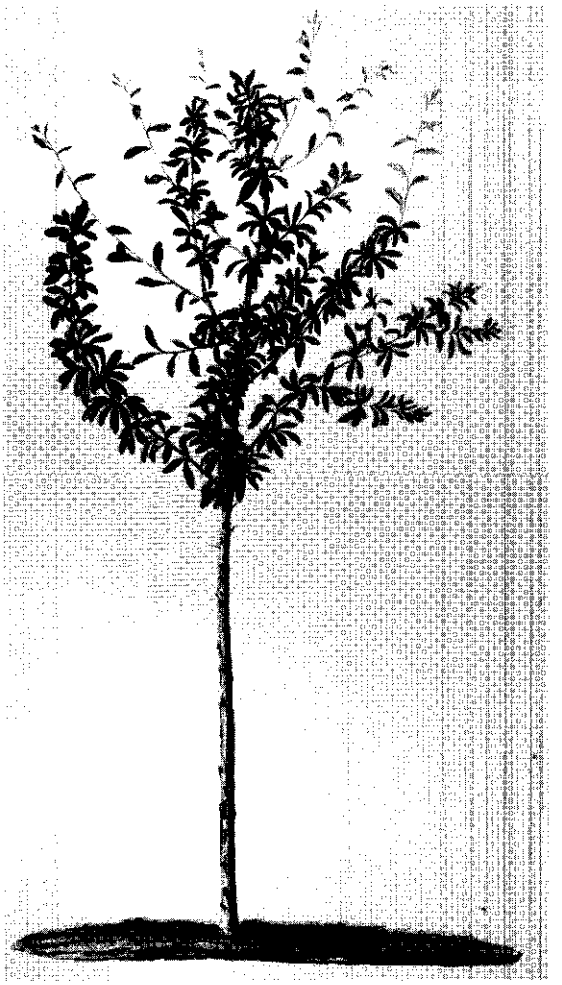
Atlas. Not represented in the atlas.
Commelin. Hort. Amst. 1:183 t.94. *Nux Americana foliis alatis bifidis* Cat. Hort. Beaum. (Kiggelaer 1690: 31) seu Knippa Par. Bat. Prod. (Hermann 1689:344). Dutch: Americaansche noteboom, met gespleten en vleugel-wyse bladeren.
Citations. *Sapindus saponaria* L. 1753:367, [Hort. Cliff.:152, Mat. Med.:187.532, V.Royen:464.1, Ray 1704 app.52], Burm.f. 1768 Fl. Ind.:91, Willd. 1799: 468, Sweet 1818:88, DC. 1824:67, Loudon 1830:159, Salm-Dyck 1834:244, Huth (in corrigenda).
Melicoccus bijugatus Jacq. 1760:19 – Jacq. 1763:108 t.72, Linn. 1763:495, Lam. 1792:368, Willd. 1799: 330, Huth (as *Melica bijuga,* in corrigenda: *Melicocca bijuga*), Radlkofer in Engler 1933:823.
Quassia amara L. 1762:553 – Linn. 1763:1679, Blom 1763 in Am. ac. 6:423, Richter 1835:369.
Taxonomic notes. Linnaeus obviously was rather confused about the identity of this plate; his ms annotation is *'Melicocca?'.* Its identification is by no means easy. The seedling shown has a winged rhachis as is normal for *Melicoccus* when young, but older plants loose this character. In *Sapindus* the winged rhachis is retained in full-grown trees. The fruit shown in the plate has lost its outer layer and the gelatinous part of the drupe. It is elongated as in *Melicoccus,* not globose as in *Sapindus.* I have not seen specimens of *Melicoccus*-seedlings, but the shape of the seed, Radlkofer's expert opinion and the vernacular name Knippelhout, decided my interpretation of this plate.
Commelin's vernacular names 'Knippa' and 'Knippelhout' are very likely the same as 'Ginep' and 'Guinep' given for *Melicoccus bijugatus* by Adams 1972:440.
Since Commelin's plate has been interpreted as belonging to three genera in two families by the describing authors, it is unfit as a type for any of the names. For *Sapindus saponaria* a specimen in the Clifford herbarium might be selected (Radlkofer apparently has seen one, I did not look for it). No specimen qualifies for typification in LINN.
Melicoccus bijugatus can be typified by Plate 72 in Jacquin 1763. The name often used for this species is *Melicocca bijugata* L., also Radlkofer did so. Jacquin's name is however older and is validly published. Linnaeus cited Jacquin.
The first valid name for this species is *Sapindus melicoccus* L. in the Flora Jamaicensis of 1759, a dissertation of C.G.Sandmark. The name appeared in a list, but '210' is printed after the name, so that it is validly published by direct reference to P.Browne's Natural His-

tory of Jamaica 1756:210. Browne's description validates Sandmark's name. As type I propose the specimen LINN 488.1, which bears the number 210. It is, however, not marked 'Br' (which indicates that a specimen belonged to Browne's herbarium).
Quassia amara L. was published in Sp. Pl. ed.2:553. The 'description' consists merely of the sign ħ, and a collection of C.Dahlberg in Suriname is cited.
For those who consider this a nomen nudum (I do not) a full description is provided in Blom's dissertation of 1763 'Lignum Quassiae' (Am. ac. 6:421-423). Three specimens are present in LINN 545, but none of these is annotated as Dahlberg's.
Distribution. Tropical America.
Introduction ante 1689. Commelin received seeds from Bonaire; Van Beaumont arranged the shipment. Paul Hermann grew the species in Leiden. Patrick Browne records that the plant was introduced in Jamaica from Suriname.

SAPOTACEAE

Argania spinosa (L.) Skeels, Bull. Bur. Pl. Intr. no.233 (1911)

Atlas. 2 t.19. *Lycio similis frutex Indicus Spinosus, Buxi folio.* Breijn. Prod. 2 (Breyne 1689:77).
Dutch: Indiaans doornachtig licium-gelykende heester met palm-bladeren.
Commelin. Hort. Amst. 1:161 t.83. Idem, some orthographic variants.
Artist. Jan Moninckx (1686-1690).
Citations. *Sideroxylon spinosum* L. 1753:193 – not cited in the protologue –, Linn. 1771:341, [Hort. Cliff.:69.2], Burm.f. 1768 Fl. Ind.:59, Lam.1783:246, Persoon 1797:242.
Elaeodendron argam Retz. 1791:26 – Sweet 1818:43.
Argania sideroxylon Roem. & Schult. 1819,4:502, Sweet 1827:269.
Aspalathus ebenus L. 1759:1158 – not cited in the protologue –, Linn. 1774:538 'an', [ms LINN '?'], Persoon 1797:685 'an'.
Flacourtia sepiaria Roxb. 1795:48 – Willd. 1797:1091, Willd. 1806:833, Huth.
Taxonomic notes. *Sideroxylon spinosum* L. is based on Hort. Cliff.:69. The specimen H.S.C. 69.2 is proposed here as the lectotype of the name. It represents the plant from Morocco known as 'argan', a member of the *Sapotaceae.*
The correct name for this species is *Argania spinosa; Elaeodendron argam* is a synonym.
LINN 261.8 is a sterile specimen much like H.S.C. 69.2. As it is a specimen from Clifford's herbarium, it is probably an isotype.
Willdenow (l.c.) identified Commelin's plate as *Flacourtia sepiaria* Roxb. The correct name for this taxon is *F.indica* (Burm.f.) Merril. Caroumoelii, Reede 5:77



Argania spinosa. Atlas 2 t.19

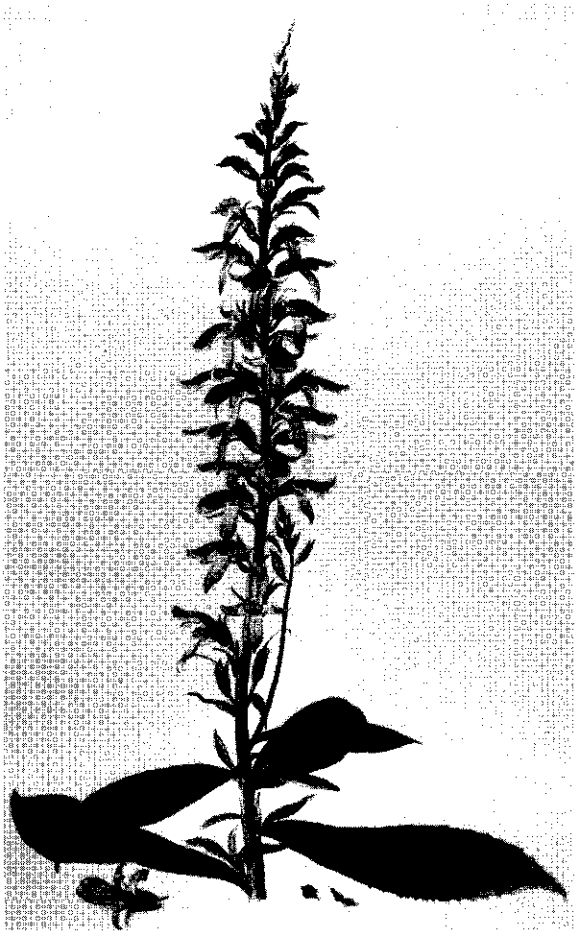
t.39, a paratype of *Sideroxylon spinosum* L., represents this species.
The other paratype, Plukenet 1691 t.89 f.1 '*Ebenus jamaicensis* . . .', belongs to *Aspalathus ebenus* L., currently *Brya ebenus* (L.) DC., a papilionaceous species from Cuba and Jamaica. The type of this name probably is LINN 893.44.
Commelin's plate is hard to identify. The description does not help much either, a note on white latex would have been welcome. Comparison with specimens of *Flacourtia indica* did not satisfy me. *Flacourtia* leaves are petiolate and broader, and the spines stronger. *Brya ebenus* also gives no satisfactory match. The best fit is *Argania spinosa* after all.
Distribution. Morocco, where edible oil is produced from it.
Introduction ante 1689. Commelin gives no origin of his plant except 'Indicus' in the name. Linnaeus had as habitat 'Malabaria', based on Reede. Obviously the habitat was not known in the period. Another species

from the area cultivated in Amsterdam is *Euphorbia officinarum.*
The species is rare in cultivation presently.
Specimens seen. H.S.C. 69.2, lectotype (BM); LINN 261.8, isotype?; Bramwell c.s. 206 (K); Gattefossé 810 (K); J. & P.de Wilde & Dorgelo 1790 (WAG); De Wit s.n., culta (WAG).

Pouteria species
Atlas. 8 t.36. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Taxonomic notes. The drawing almost certainly shows a member of the *Sapotaceae,* most likely an American *Pouteria.*

SCROPHULARIACEAE

Capraria biflora L., Sp. Pl.:628 (1753)
Atlas. 2 t.10. *Gratiolae affinis Frutescens Americana, Foliis Agerati seu veronicae Erecti majoris* Breijnii Prod. 2.54 (Breyne 1689:54).
Capraria corassavica Herm. Parad.: Batav: Prodr.:319 (Hermann 1689:319) Tsera-Parua Hort. Mal. Tom. X 105 (Reede 1690:105 t.53).
Commelin. Hort. Amst. 1:79 t.40. Idem, added: *Cabritta vulgo dicta* (Hermann 1689:319). The reference to Reede is omitted here.
Dutch: Curassaus Cabritten-Kruid.
Artist. Jan Moninckx (1686-1690).
Citations. *Capraria biflora* L. 1753:628, [Hort. Cliff.: 320.1, ms LINN, Boerhaave 1719,2:265], Willd. 1800: 323, Huth.
Taxonomic notes. The nomen specificum legitimum for *Capraria biflora* L. is taken from Hort. Cliff.:320 and Roy. Ludgb.:301. The specimen in H.S.C. 320.1 does not allow for the observation *'corollis quinquefidis'.* The specimen in Herb. V.Royen (L 912348-50) is better and I propose it as lectotype.
The synonymy of *Capraria biflora* L. is (through Boerhaave cited in Hort. Cliff.) mixed with that of *Scoparia dulcis* L. *Scoparia dulcis* is an annual glabrous plant with opposite or verticillate leaves; its white flowers are tetramerous and rotate. *Capraria biflora* is a herbaceous or suffrutescent, villous to almost glabrous plant with alternate leaves, whose white flowers are tetra- or pentamerous and campanulate.
Linnaeus separated these species in Hort. Cliff.: *Capraria foliis ternis, corrollis quadripartitis (Scoparia) Capraria foliis alternis, corollis quinquifidis (Capraria).*
Tsjeru-parua Reede (1690:105) was cited as a synonym in the atlas. Commelin annotated Reede's plate as being the same as Kabrittenkruyt. Reede's plant is *Sida acuta* Burm.f.
Distribution. Tropical and subtropical America.
Introduction ante 1688. Breyne 1689:54, whose name

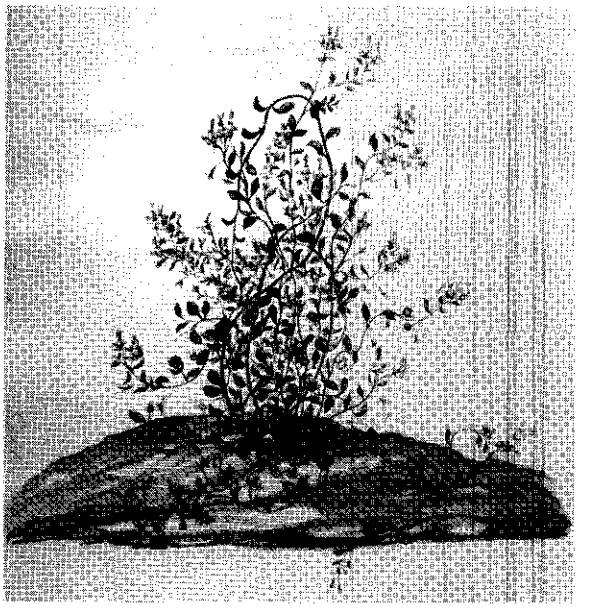


Isoplexis canariensis. Atlas 3 t.51

Commelin uses, had seen the plant in Amsterdam and in Beaumont's garden.
Hermann (1689:319) grew the species in Leiden, and published an illustration of it (1698 t.110).
Plukenet 1691 t.98 f.4 shows a plant that is probably the same: *'Lysimachiae purpureae affinis Americana procumbens Anonidis vernae frutescentis foliis singulari glabro'.*
Commelin narrates the story that a box with dried leaves he considered as a tea substitute was given to him in 1690.
Nowadays it is still called 'West Indian tea' (Gooding, Loveless & Proctor 1965:384).
Specimens seen. H.S.C. 320.1 (BM); Van Royen s.n. (L 912348-73), lectotype; LINN 785.1; Groenendijk 28 (WAG); P.de Wilde 70 (WAG); Breteler 4353 (WAG); Fahlberg s.n. (SBT).

Isoplexis canariensis (L.) Lindl. ex Loud., Encycl. Plants:528 (1829)
Atlas. 3 t.51. *Digitalis Acanthoides Canariensis frutescens Flore aureo.*

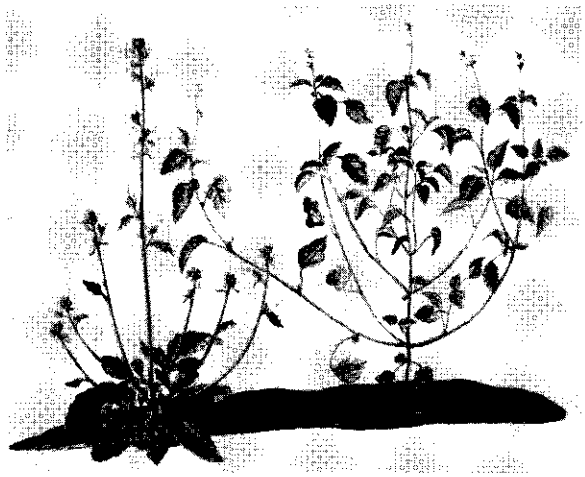
Commelin. Hort. Amst. 2:105 t.53. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Digitalis canariensis* L. 1753:622, [Hort. Cliff.:318.2, ms LINN, Boerhaave 1719,1:229.9], Miller 1768, Willd. 1800:288.
Isoplexis canariensis (L.) Loud. 1829:528, Loudon 1830:251, G.Don 1838:506, Huth.
Callianassa canariensis (L.) Webb & Berth. 1845:144.
Taxonomic notes. Linnaeus had a new nomen legitimum specificum for *Digitalis canariensis,* therefore I propose '*Gesneria* 4 *canariensis*' LINN 775.10 as the type.
Distribution. Canary Islands: Tenerife, extinct on Palma and Gomera.
Introduction ante 1692. Commelin does not give a year of introduction. He says that the plant was sent to Europe under the Canarian name Matera, this is not a Spanish name. Probably it is Italian. Plukenet has the species in 1694 t.325 f.2, this plate is cited by Commelin. J.H.Herolt made a water-colour of *Digitalis canariensis* in 1697 for Agnes Block (see V.d.Graft 1943: 138).
Specimens seen. '*Gesneria* 4 *canariensis*', lectotype, LINN 775.10; H.S.C. 318 (BM); Dinn 224 (WAG); Wijnands 604, culta (WAG).



Linaria reflexa. Atlas 1 t.3

Linaria genistifolia (L.) Miller ssp. **confertiflora** (Boissier) P.H.Davis, Notes R.B.G. Edinb. 36:6 (1978) [Pl.56]
Atlas. 6 t.48. *Linaria orientalis lilii persici foliis, florum spica densissima & pyramidata.*
Commelin. Rar. & Exot.:32 t.32. Idem, and Tourn: Coroll: inst.9 (Tournefort 1703:9).
Artist. Jan Moninckx (1703-1705).
Citations. No interpretation of this plant is known to me.
Taxonomic notes. Tournefort's name, used by Commelin, is vouched by Tournefort 'no.29 p.9' (P). This specimen was designated as the type of *Antirrhinum pyramidatum* Vent. in Lam., Enc. 1797,4:360 by Davis (1978:668). The correct name for this species is now *Linaria pyramidata* (Vent.) Sprengel. Commelin's Plate 48 does not represent this species, although his plant was from Tournefort's expedition. The best match is with *Linaria genistifolia* ssp. *confertiflora.* I have not seen the syntypes of this taxon (see Davis 1978:659), but Balansa 684 (WAG); cited by Davis, is a good match. The flowers are smaller and the calyx lobes are narrower in the specimen than in the plate. Tournefort's specimen has no ripe fruits, thus is a study of the essential seed characters impossible. A reappraisal of the name *Antirrhinum pyramidatum* Vent. (not Lam. as Davis has it) seems indicated, the more so since Davis' typification must be rejected. Ventenat cited for his species 'ex adumbratione Aubriet, & in herb. D.de Juss.', and not Tournefort's specimen. The 'Adumbratio' refers to a drawing by Aubriet, preserved in the Central Museum Library in Paris, which I did not see. The specimen in herb. Jussieu (no.6133) is from the herb. D.d'Isnard, most likely raised from Tournefort's seed as was Commelin's plant. A lectotype should be selected from these two elements, as Dr H.Heine kindly pointed out to me. I do not feel competent to solve this problem at this moment, and therefore follow Davis' nomenclature.
Distribution. Inner and S.Anatolia.
Introduction. Commelin received seeds in 1703 from Gundelsheimer, who accompanied Tournefort on his expedition to the Orient. The species was first described in 1853 as *Linaria monochroma* Boiss. & Heldr.

Linaria reflexa (L.) Desf., Fl. Atl. 2:42 (1798)
Atlas. 1 t.3. *Linaria Lusitanica procumbens, Polygoni Folio, Flore luteo pallido.*
Dutch: Wilt vlas-kruijdt, van Portugaal, met bladeren van Varcens-gras, en Bleeck-geele Blom.
Commelin. Hort. Amst. 1:13 t.7. *Linaria lusitanica procumbens, polygoni folio, flore pallido coeruleo, rictu luteo* Cat. Hort. Med. Amst. (Commelin 1689).
Dutch: Portugaals wilt vlaskruid met nederliggende Steelen, bleek-blauwe bloemen, en geele opgesperde mondekens.
Artist. Jan Moninckx (1686-1690).
Citations. *Linaria reflexa* (L.) Desf. 1798:42 – Huth.
Taxonomic notes. I accept Huth's identification as *Linaria reflexa,* although the fruits are not ripe enough to show the reflexed pedicels and the species does not occur in Portugal as implied by Commelin. The identification is tentative as the most important characters in *Linaria* taxonomy, those of the seeds, are not shown in the plate.

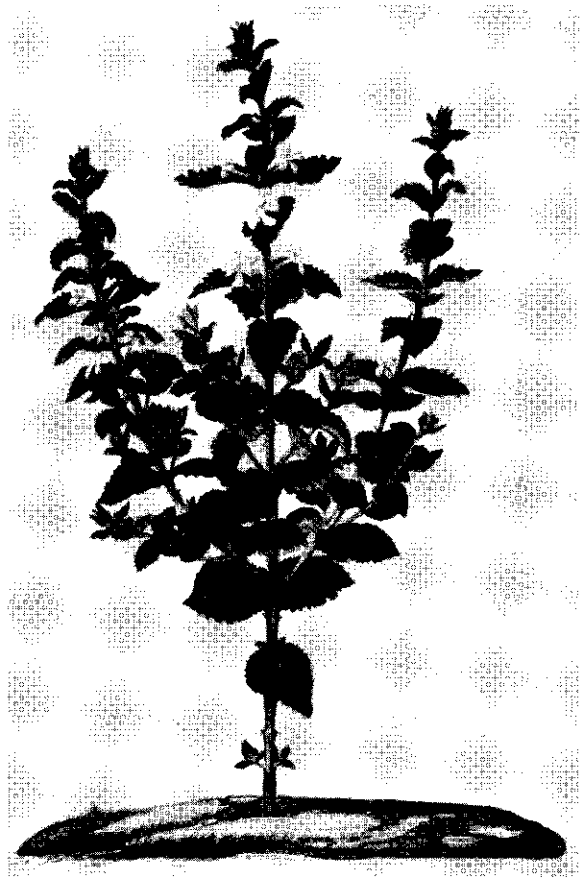


Manulea cheiranthus, Leidesia procumbens. Atlas 3 t.40

Commelin's phrase is very much like the one used by Ray 1686:755.15, cited by Linnaeus in the protologue of *Antirrhinum reflexum,* Syst. Nat. ed.10, 1759:1112. The type of this name is probably LINN 767.54 'Algir', a specimen collected by Brander that came available to Linnaeus in 1756. The specimen is not cited in the protologue. If the plant really came from Portugal the most likely candidate is *L.pedunculata.* Specimens of this latter species hardly match the plate.
Distribution. C.Mediterranean region.
Introduction ante 1690. The plant germinated from seed introduced with soil of plants received from Portugal. It flowered only once, no year is given.
Specimens seen. LINN 767.54, lectotype; Heldreich s.n. anno 1840 (WAG); Huet du Pavillon s.n. anno 1854 (WAG); Jamin 191 (WAG).

Manulea cheiranthus (L.) L., Mantissa Pl.:88 (1767)

Atlas. 3 t.40, left. *Cheiranthos Africana, Flore luteo.*
Commelin. Hort. Amst. 2:83 t.42. Idem, but *'Cheiranthus'.*
Artist. Jan Moninckx (1697).
Citations. *Lobelia cheiranthus* L. 1753:933, [ms LINN], Burm.f. 1768 P.F.C.:25 ('29').
Nemia cheiranthus (L.) Bergius 1767:160 'bona'.
Manulea cheiranthus (L.) L. 1767:88 – Willd. 1800: 327, Ait.f. 1812:47, Sweet 1818:142.
Taxonomic notes. *Lobelia cheiranthus* L. is based on Commelin's Plate 42, which is the type. *Lobelia cheiranthus* is the type of *Manulea* L., a genus conserved against *Nemia* Bergius which has some months priority. Linnaeus took the epithet from Commelin, who described it as a new genus.
Distribution. South Africa: Cape Province.
Introduction 1697. Commelin received the plant from a Mr Nicolaas Oortmans in 1697. As it is an annual



Oftia africana. Atlas 6 t.22

plant and Commelin did not know the seeds, he must have had a plant and the drawing must date from 1697. No earlier record is known.
Specimens seen. LINN 787.1 *'Manulea cheiranthus'*, a comparable specimen in S-Linn; Bolus 2795 (K); Lewis Grant 3416 (WAG); Esterhuysen 18838, 19078 (BOL); Grubb s.n. (SBT); Stokoe 6484 (BOL).

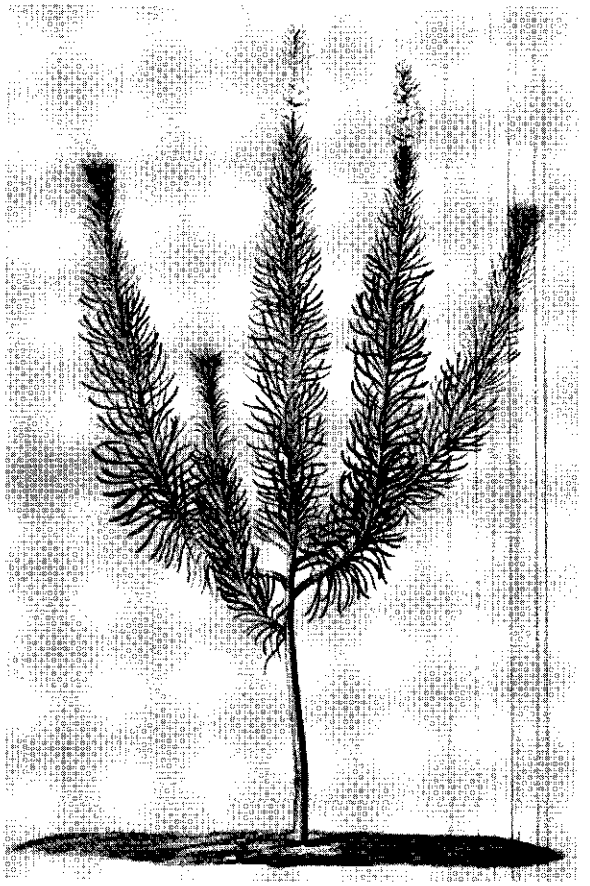
Oftia africana (L.) Bocq., Adansonia 2:11 (1861)

Atlas. 6 t.22. *Jasminum africanum, ilicis folio, flore solitario ex foliorum alis proveniente, albo.*
Commelin. Rar. & Exot.: 6 t.6. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Lantana africana* L. 1753:628, [Hort. Cliff.: 320.2, V.Royen:290.3, ms LINN, Boerhaave 1719,2: 216.6], Burm.f. P.F.C.:17, Miller 1768.
Spielmannia africana (L.) Willd. 1800:321, Ait.f. 1812: 45, Kraus 1893:117.
Spielmannia jasminum Medikus 1775:196, Huth.
Oftia Adanson 1763:199.
Oftia africana (L.) Bocq. 1861:5, 12, Dahlgren & Rao 1971:451.
Taxonomic notes. The nomen specificum legitimum

for *Lantana africana* in Sp. Pl. is cited from Hort. Cliff. The corresponding specimen H.S.C. 320.3 is available for lectotypification.
Since Commelin's Plate 6 is the type of the genus *Oftia* Adanson (l.c.), I propose it as the lectotype of *Lantana africana* L.
On the authority of Dahlgren & Rao (1971), I treat *Oftia* as a member of the *Scrophulariaceae*, and not of the *Myoporaceae*.
Distribution. South Africa: Cape – Little Namaqualand.
Introduction ante 1705. Commelin did not specify the source of his plant. He cites the Witsen Codex for its habitat at the Cape; the species is represented in the florilegium in the Africana Library at Johannesburg. Nowadays the species is rarely cultivated.
Specimens seen. H.S.C. 320.3 (BM); Van Royen in segregated collection in H.S.C. (BM); LINN 783.8 & 9; Bayliss 5277 (WAG); Bos 122 & 367 (WAG); Orchard 293 (WAG); Pillans 7322 (BOL); Wijnands 902, Karbonkelberg (WAG).

SELAGINACEAE

Hebenstretia dentata L., Sp. Pl.:629 (1753)
Atlas. 5 t.36. *Valerianella Africana, foliis angustis, flore macula rubicante notato.*
Commelin. Hort. Amst. 2:217 t.109. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Hebenstretia dentata* L. 1753:629, [Hort. Cliff.:497, ms LINN], Bergius 1767:153 'vix bona', Burm.f. 1768 P.F.C.:17, Willd. 1800:330, Choisy 1848: 4, Rolfe 1883:343, Huth.
Taxonomic notes. The nomen specificum legitimum for *H.dentata* in Sp. Pl. is cited from Hort. Cliff.:326 and Van Royen:300. The specimen H.S.C. 326 is a suitable lectotype in my opinion.
Roessler (1979:45) designated this specimen as the holotype. I do not consider it a holotype, a specimen in Van Royen's herbarium being of equal standing, but I agree with Roessler that it is a better choice than Hedberg's (1957:167) typification by LINN 788.2, a specimen not annotated with the number '1' of the species in Sp. Pl.
Rolfe (l.c.) considered the species to be founded on Commelin and Burman 1738:114 t.42 f.2.
Distribution. South Africa: Cape.
Roessler (l.c.) confined the distribution of the annual *H.dentata* to the Cape. The Afromontane species discussed by Hedberg under this name is *H.angolensis* Rolfe.
Introduction ante 1700. Commelin gives no details on the source of his plant. He must have had it from the Cape.
Specimens seen. H.S.C. 326 (BM); Coppejans 1139 (U); Esterhuysen 5387, 6237 (BOL); Lanjouw 213 (U); Thunberg 'ex horto Leidense' (SBT).



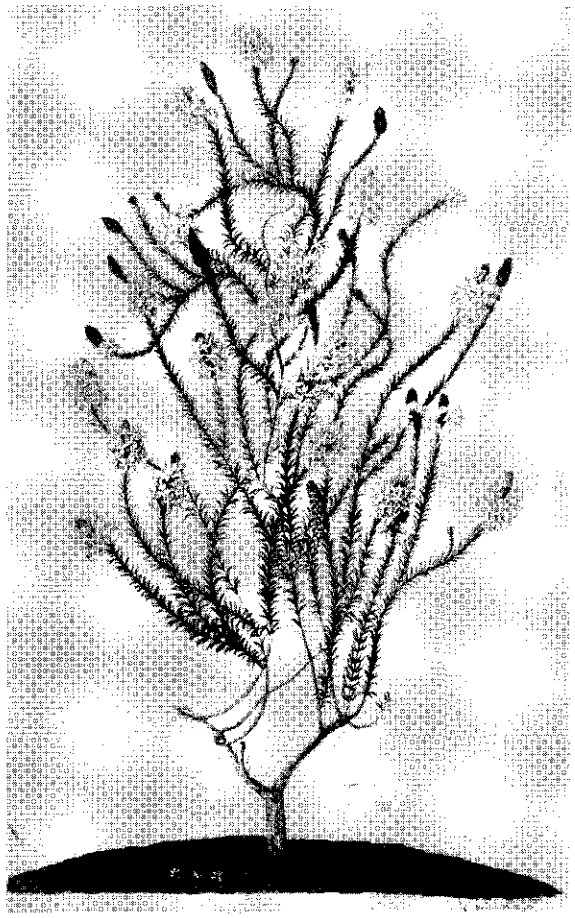
Microdon cylindricum. Atlas 5 t.37

Microdon cylindricum E.Meyer, Comm. Pl. Afr. Austr.: 253 (1838)
Atlas. 5 t.37. *Valerianella africana fruticans, foliis longis et angustissimis.*
Commelin. Hort. Amst. 2:219 t.110. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Selago pinastra* L. 1763:876, Burm.f. 1768 P.F.C.: 17.
Stilbe pinastra (L.) Bergius 1767:30 – not cited in the protologue – Linn. 1771:420, Willd. 1806:1116, Huth.
Protea racemosa L. 1771:187, not cited in the protologue but in Hort. Cliff.:496.4, which is cited for *Protea racemosa;* Linnaeus cited Commelin with doubt 'facies plantae omnino'.
Taxonomic notes. *Protea racemosa* L. is now *Spatalla racemosa* (L.) Druce.
The type of *Selago pinastra* L. is probably LINN 1234.1. Commelin's Plate 110 does not match this specimen; it does not fit in the genus *Stilbe*. The best match I found is with *Microdon cylindricum* E.Mey.
Distribution. South Africa: Cape.
Introduction ante 1700. Commelin did not specify the source of his plant.

Specimens seen. *Stilbe pinastra:* LINN 1234.1; *'Stilbe pinastri'* S-Linn.; Acock 1261 (S); Schlechter 7225 (S). *Microdon cylindricum:* Acock 1267 (S); Bolus 13634 (BOL); Esterhuysen 9529 & 19904 (BOL) & 23113 (S); Sidey 1881 (S); Taylor 8052 (PRE).

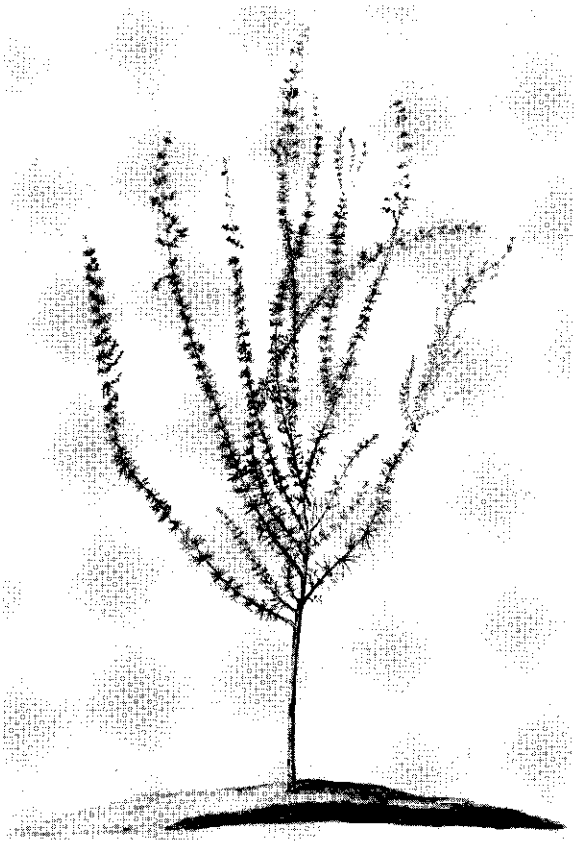
Selago corymbosa L., Sp. Pl.:629 (1753)
Atlas. 3 t.38. *Camphorata Africana umbellata frutescens.* Hermanni (Hermann 1689 app.).
Commelin. Hort. Amst. 2:79 t.40. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Selago corymbosa* L. 1753:629, [Hort. Cliff.: 321.1, V.Royen:300.1, ms LINN, Ray 1704:130, Boerhaave 1719,1:124.7; Tilli 1723:29, Fabricius 1763:48], Bergius 1767:156, Burm.f. 1768 P.F.C.:17, Miller 1768, Willd. 1800:181, Ait.f. 1811:431, Sweet 1818:136, Loudon 1830:246, Salm-Dyck 1834:252, Choisy in DC. 1848:10, Huth, Rolfe in Fl. Cap. 1912,5:154. *Selago polystachya* L., Mant. Alt. 1771:250 'an?'.
Taxonomic notes. There is a new nomen specificum legitimum for *S.corymbosa* in Sp. Pl. *'Selago corymbo multiplici'*, so that LINN 786.1 may be considered as the type. The new diagnosis could be regarded as a rephrasing to bring it in line with *'Selago spicis imbricatis'* and *'Selago racemo simplici'*, the other two species in the genus.
Choisy (l.c.) excludes Commelin's plate from *S.corymbosa* L. var. *β polystachya* (L.) Choisy. The type of *S. polystachya* is probably LINN 786.5.
Distribution. South Africa.
Introduction ante 1689. Commelin gave no details on the source of his plant, but he stated that the species was known in the gardens of Holland, so he may have had it from another garden. Hermann had the plant in 1689, Morison in 1699.
Specimens seen. H.S.C. 321 (BM); LINN 786.1, lectotype; Ekeberg s.n. (SBT); Bos 71 (WAG, PRE); Coppejans 383 (WAG); Bayliss 6906 (K); Sutherland s.n. (K); Galpin 6353 (PRE); Wijnands 953 (WAG).

Selago glutinosa E.Meyer, Comm. Pl. Afr. Austr. :255 (1838)
Atlas. 4 t.8. *Frutex africanus ericaefolio glutinosus, Flore spicato albo* Domini Pancras.
Commelin. Hort. Amst. 2:119 t.60. Idem.
Artist. Jan Moninckx (1698-1700).
Citations. *Eranthemum parviflorum* Bergius 1767:2, [ms LINN].
Eranthemum parvifolium L. 1771:171, Willd. 1797:52, Persoon 1797:58.
Agathelpis parvifolia (L.) Choisy 1824:96, Huth.
Dischisma ciliatum (Berg.) Choisy 1824:94 – Choisy in DC. 1848:6.
Taxonomic notes. Commelin's Plate 60 is a syntype of *Eranthemum parviflorum* Bergius. The four stamina per flower in Commelin's plant are not in agreement with the diagnosis of Bergius who mentions two stamina.



Selago glutinosa. Atlas 4 t.8

Rolfe (1883:345) did not see an original Bergius specimen at Berlin, the type is however extant in SBT. It is not conspecific with Commelin's plate.
Eranthemum parvifolium L. is an illegitimate name for *E.parviflorum* Berg., the correct name of which is *Agathelpis parviflora* (Berg.) Hutch.
Choisy cited Commelin's plate when he made the combination *Agathelpis parvifolia*, but excluded the plate from this species in De Candolle's Prodromus.
Sheet 788.8 in LINN is annotated 'Comm 2 119 t 60' (not 112 t 50 as Savage transcribed it). It was identified as *Hebenstretia capitata* Bergius by Linnaeus filius, now *Microdon capitatum* (Berg.) Levyns. Rolfe (1883:349) did not accept this identification of Commelin's plate. Choisy's interpretation of Plate 60 as *Dischisma ciliatum* is incorrect; the specimens seen of this species do not match the plate.
Commelin did not refer his plant to a genus as long as the seeds were not known. He used the non-committal 'Frutex'. I find it hard to identify the plant, but the general habit of the plant and Commelin's note that it



Selago thunbergii. Atlas 5 t.38

is very sticky are in agreement with *Selago glutinosa* E.Mey.
Distribution. South Africa: S.W.Cape.
Introduction 1698-1700. Commelin received his plant from Gerbrand Pancras.
Specimens seen. *Agathelpis parviflora:* Grubb s.n., type (SBT); Galpin 8695 (PRE); Schlechter 9250 (PRE).
Selago glutinosa: Acocks 14871 & 16459 (PRE); Leistner 456 (PRE).
Dischisma ciliatum: Lewis Grant 4677 and 4707 (WAG); Schlieben and Ellis 12338 (WAG).

Selago thunbergii Choisy in DC., Prod. 12:9 (1848)
Atlas. 5 t.38. *Valerianella Africana fruticans, foliis ericae.*
Commelin. Hort. Amst. 2:221 t.111. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Selago dubia* L. 1753:629 – not cited in the protologue – Linn. 1763:878 '?', [ms LINN].
Selago polystachia L. 1771:250 'an', [ms LINN], Persoon 1797:605 'an', Willd. 1800:182 '?'.
Eranthemum angustifolium (L.) Willd. 1797:51.
Agathelpis angustifolia (L.) Choisy 1824:95 '?', Huth.
Taxonomic notes. *Selago dubia* L. was known to Linnaeus from the literature only. The lectotype, designated here, is *Thymelaea foliis angustissimis linearibus, flosculis spicatis* Burman 1738:130 t.47 f.3. Hutchinson (1946:127) transferred the epithet *dubia* to *Agathelpis* but omitted the citation of the basionym: *Selago dubia* L., Sp. Pl. 1753:629. The combination is validated here as *Agathelpis dubia* (L.) Hutch. ex Wijnands. It is the correct name for *A.angustifolia* (L.) Choisy.
Selago polystachya L. can be typified by LINN 786.5, see the discussion on *Selago corymbosa* L., Commelin 1701 t.40.
Commelin's Plate 111 does not represent *Agathelpis dubia*, I identify it as *Selago thunbergii* Choisy.
Distribution. South Africa: Cape.
Introduction. Commelin did not specify the source of his plant.
Specimens seen. Bayliss 5813 (WAG); Buller s.n. (NBG-49108); Compton 7317 (NBG).

Selago species
Atlas. 8 t.21. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).

SOLANACEAE

Datura metel L. 'Cornucopiae'
Atlas. 1 t.11. *Solanum Aegyptiacum, Flore Pleno* B: Pin. (Bauhin 1623:168).
Stramonia Aegyptiaca Foetida, Flore pleno, extrinsecus albente, punctis Purpureis aspero. Datura Aegyptiaca. Veslingi (Alpinus 1640).
Dutch: Datura, met Bonte dubbelde Blom.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Citations. This water-colour was discussed by Wijnands (1981:8-10).
Taxonomic notes. *Datura metel* L. var. *fastuosa* (L.) Danert is the name currently used for the double-flowered forms of *D.metel.* However, *Datura fastuosa* L., Syst. Nat. ed.10,1759:932, is a synonym of *D. metel* L. 1753:179 (Baytop 1978:452).
Bailey & Bailey (1976:365) named the 'double' forms *Datura metel* 'Cornucopiae'.
Distribution. *Datura metel* is a species of the palaeotropics. The 'double' forms were commonly known in the 17th century.
Specimen seen. Belder 671, culta (WAG).

Datura metel L. 'Cornucopiae'
Atlas. 8 t.42. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1707).
Citations. This water-colour was discussed by Wijnands (1981:8-10).
Taxonomic notes. The white 'double' form of *D.metel* was described by Bernhardi (1833) as *D.hummatu* var. *muricata.*

Datura metel 'Cornucopiae'. Atlas 1 t.11

Solanum guineense. Atlas 4 t.47

D.hummatu is a superfluous name for *D.metel* L. (non Ucria nec Bernhardi nec Dunal = *D.inoxia* Mill.). Var. *muricata* was based by Bernhardi on *'Stramonium fructu spinoso, rotundo, flore albo, pleno'* Tournefort (1700:118) and on Linnaeus (1738:55).
The water-colour represents the plant described by Tournefort, I know of no pre-linnean published illustration or authentic specimen.
All double-flowered forms of *D.metel* L. are at present named cv. Cornucopiae (Bailey & Bailey 1976:365).
Introduction ante 1689. Breyne (1689:100) recorded a white double *Datura* from the collection of Agnes Block.
Moninckx's water-colour is about contemporary. The same cultivar is probably represented in the Codex of the Duchess of Beaufort 1 t.65 f.1.
Specimen seen. Belder 672, culta (WAG).

Solanum guineense L., Sp. Pl.:184 (1753)

Atlas. 4 t.47. *Solanum lignosum africanum sempervirens laurinis foliis.*
Commelin. Hort. Amst. 2:191 t.96. Idem.

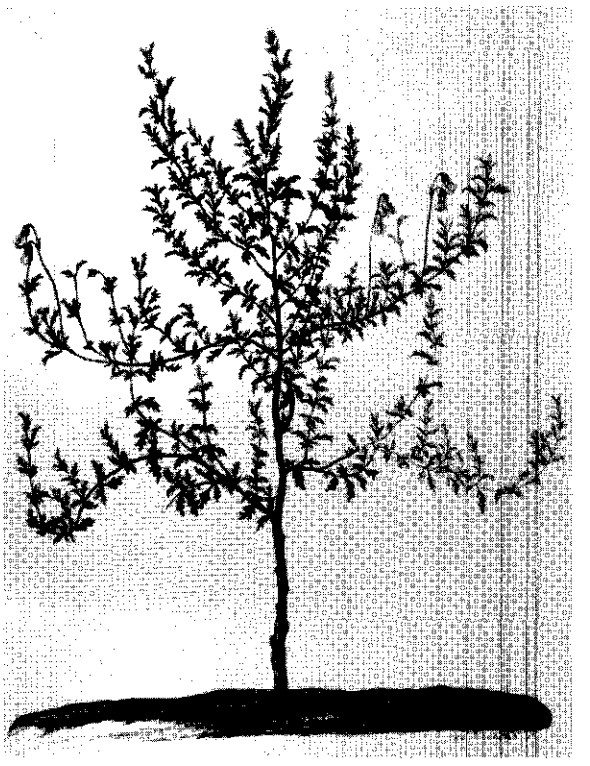
Artist. Jan Moninckx (1686-1700).
Citations. *Solanum guineense* **L.** 1753:184 – not cited in the protologue – [Boerhaave 1719,2:67.15], Heine 1960:245.
Solanum laurinum Burm.f. 1768 P.F.C.:5, Bitter 1920: 407.
Solanum sempervirens Miller 1768 no.25.
Atropa solanacea L. 1771:205, [ms LINN], Persoon 1797:231, Willd. 1799:1018.
Solanum aggregatum Jacq. 1790:124, 1791 t.323, 1796,2:10 – not cited in the protologue –, Lam. 1797:283, Dunal 1813:146, Huth.
Taxonomic notes. Linnaeus provided an original nomen specificum legitimum for *Solanum guineense* in Sp. Pl. Two specimens are available in **LINN**. No.246.5 was sent by Tulbagh after 1753, so it cannot be the type; LINN 246.4, a specimen from the Clifford herbarium, is proposed here as the lectotype, see also Heine (l.c.).
Solanum sempervirens Mill., *S.aggregatum* Jacq. and *Atropa solanacea* L. are superfluous nomina nova based on the same type.
Solanum laurinum Burm.f. (non Dunal in DC. 1852)

is represented by four specimens in G, one of which I selected as the lectotype. This specimen is annotated as *'Solanum monomotapense arborescens'* and with Commelin's phrase-name.
Solanum guineense (L.) Miller 1768 is another taxon which belongs to the *Solanum nigrum*-complex. Its correct name is *S.nigrum* var. *guineense* L. or, at the species level, *S.scabrum* Mill. (cf. Edmonds 1979).
Distribution. South Africa: W.Cape.
Introduction ante 1700. Commelin did not specify the source of his plant.
Specimens seen. LINN 246.4 and 246.5; *'2 guineense'* deleted and changed to *'solanacea'* (S-Linn); Acock 403 (S); Boucher 3871 (STE); Taylor 7314 (STE); Thunberg s.n. (S).

STERCULIACEAE

Hermannia althaeifolia L., Sp. Pl.:673 (1753)
Atlas. 4 t.27. *Ketmia africana frutescens, foliis mollibus & incanis, Flore spirali Sulphureo.*
Commelin. Hort. Amst. 2:157 t.79. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Hermannia althaeifolia* L. 1753:673, [Hort. Cliff.:342.5, V.Royen:347, ms LINN, Boerhaave 1719, 1:273.1], Burm.f. 1768 P.F.C.:18, Willd. 1800:589, Kraus 1893:116, Huth.
Taxonomic notes. *Hermannia althaeifolia* is based on Hort. Cliff.:342 and V.Royen:347. A descriptive note is, however, added in Sp. Pl., indicating that Linnaeus had a specimen at hand when he wrote his entry. LINN 854.1 '1 *althaeifolia*' which agrees with the description, would seem to me, therefore, the type. Verdoorn 1980: 29 designated H.S.C. 342.5 as the type, however, for no obvious reason. The leafy stipules shown in Moninckx's water-colour are characteristic of *H.althaeifolia.*
Distribution. South Africa: S.W.Cape.
Introduction ante 1700. Commelin does not state the source of his plant. It was grown from cuttings and seed as was *H.hyssopifolia,* see below.
Specimens seen. H.S.C. 342.5, lectotype (BM); LINN 854.1; Ellis & Schlieben 12380 and 12368 (WAG); Edwards 186 (WAG); Burmeister 'ex horto Leidense' (SBT).

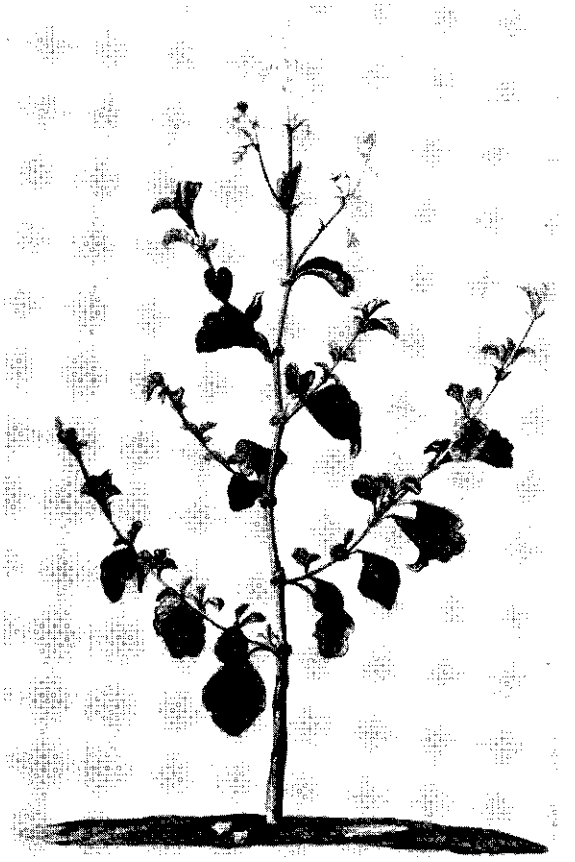
Hermannia grossularifolia L., Sp. Pl.:673 (1753)
Atlas. 6 t.23. *Ketmia Africana vesicaria, uvae crispae foliis, flore spirali sulphureo.*
Commelin. Rar. & Exot.:7 t.7. Idem.
Artist. Jan Moninckx (1700-1705).
Citations. *Hermannia grossularifolia* L. 1753:673 [V. Royen:347, Boerhaave 1719,1:273.3], Bergius 1767: 167, Burm.f. 1768 P.F.C.:18, Ait.f. 1811:196, 1812: 145, De Winter 1974:263.
Hermannia pinnata L. 1753:674 – not cited in the protologue – Linn. 1763:943.



Hermannia grossularifolia. Atlas 6 t.23

Mahernia pinnata (L.) L. Syst. Nat. ed. 12, 1767:227, Willd. 1797:1565, Huth.
Mahernia verticillata L., Mant.I:59, 1767 – Lam. 1792: 676 '?'.
Taxonomic notes. De Winter unravelled the complex typification of the above-cited names. His conclusions are: *H.grossularifolia* with, as type, LINN 854.14 (he referred Commelin's plate to this taxon), *H. pinnata* type H.S.C. 342.7, *M.verticillata* with, as type, LINN 854.17. *M.verticillata* and *H.pinnata* are conspecific, according to De Winter.
Distribution. South Africa: Cape Province.
Introduction (1700-1705). Commelin gave no information regarding the source of his plant. He does not mention the plant in the discussion of all species of *'Ketmia'* at his disposal in 1701, so that it probably arrived after 1700.
Specimens seen. LINN 854.14, lectotype; Oliver 4717 (WAG).

Hermannia hyssopifolia L., Sp. Pl.:674 (1753)
Atlas. 4 t.26. *Ketmia Africana Vesicaria fruticans & erecta alni foliis latioribus & majoribus, Flore spirali Sulphureo.*
Commelin. Hort. Amst. 2:155 t.78. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Hermannia alnifolia* L. 1753:674, [Hort.



Hermannia hyssopifolia. Atlas 4 t.26

Cliff.:342.2, V.Royen:34.7, ms LINN, Boerhaave 1719,1:273.2], Bergius 1767:166 'mala', Burm.f. 1768 P.F.C.:18, Willd. 1800:593, Huth.

Taxonomic notes. *Hermannia alnifolia* is based on Hort. Cliff.:342 and V.Royen:347. The specimen H.S.C. 342.4 was designated as lectotype by Verdoorn (1980: 44).

The source of Linnaeus' epithet *'alnifolia'* is Commelin's phrase-name. However, Commelin's plate cannot be reconciled with the lectotype of *H.alnifolia* as designated by Verdoorn (l.c.). The plate is in better agreement with specimens of *H.hyssopifolia* L., which name is typified by a specimen in H.S.C. as designated by Verdoorn (1980:35).

I owe much to Dr I.C.Verdoorn for helpful discussions and correspondence on the identity of this and other species of *Hermannia.*

Distribution. South Africa: S.W.Cape.

Introduction ante 1700. Commelin does not state the source of his plant. The first illustration of this species grown in Europe was published by Volckamer (1700 t.24).

Specimens seen. For *H.alnifolia:* H.S.C. 342.2, lectotype (BM); LINN 854.5 ex Hort. Cliff., isotype; Hanekom 2142 (WAG); Thompson 1757 (WAG); Bayliss 5932 (WAG); Burmeister ex horto leidense (SBT). For *H.hyssopifolia:* Bayliss 5931 (WAG); Ellis & Schlieben 12393 (WAG); Goldblatt 2663 (WAG); Oliver 4558 (WAG); Thunberg s.n. (SBT).

Hermannia cf. **hyssopifolia** L., Sp. Pl.:674 (1753)

Atlas. 4 t.29. *Ketmia Africana Vesicaria fruticans & erecta alni foliis angustioribus, Flore spirali Sulphureo.*

Commelin. Hort. Amst. 2:155. Idem; this kind is mentioned in the text but no illustration is provided.

Artist. Jan Moninckx (1686-1700).

Taxonomic notes. I have not been able to identify Moninckx' drawing. It might represent the species shown in t.78 of Hort. Amst. 2, which most likely is *H.hyssopifolia* L.

Hermannia species

Atlas. 4 t.28. *Ketmia Africana Vesicaria fruticans humifusa, alni foliis minimis Flore spirali Sulphureo.*

Commelin. Hort. Amst.2:155. Idem; this kind is mentioned in the text but no illustration is provided.

Artist. Not signed (1686-1700).

Pentapetes phoenicea L., Sp. Pl.:698 (1753)

Atlas. 1 t.19. *Blattaria Ceylanica, Flore amplo miniato*

Cat: Hort: Med: Amstelod: (Commelin 1689:53).

Dutch: Motte-Kruijt van Ceylon, met groote, schoone, roode Blom.

Commelin. Hort. Amst. 1:11 t.6. *Blattaria ceylanica flore amplo coccineo.*

Dutch: Ceylons Mottekruyd, met groote en schaarlakeverwige bloemen.

Artist. Jan Moninckx (1686).

Citations. *Pentapetes phoenicea* L. 1753:698, [ms LINN, Ray 1704:523, Burm. 1737:47], Burm.f. 1768 Fl. Ind.:144, Willd. 1800:727, Huth.

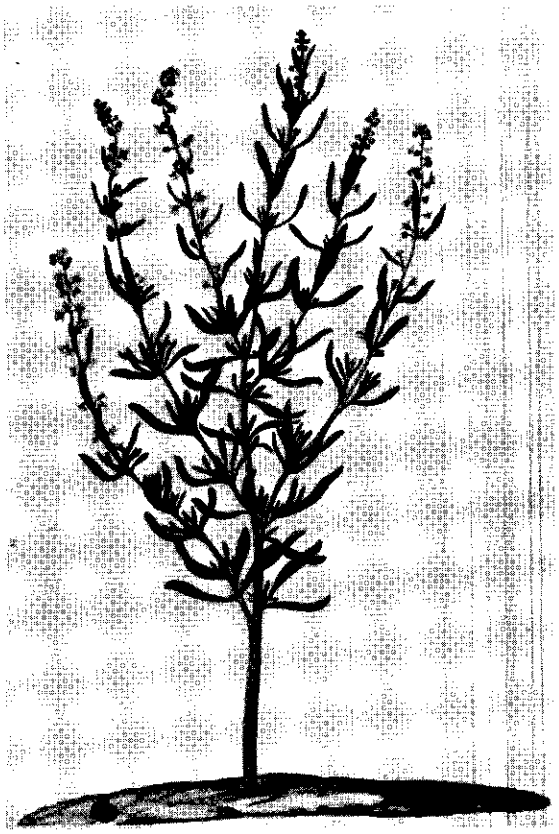
Taxonomic notes. Linnaeus provided a new nomen specificum legitimum for *Pentapetes phoenicea* in Sp. Pl. and added a descriptive note. The specimen LINN 860.1 *'phoeniceus* 1' is proposed as lectotype, although not all of the information in the description can have been derived from this specimen.

Distribution. S.Asia.

Introduction 1685. Plukenet 1694 t.255 f.3 published the first illustration of this species. It was in cultivation in Amsterdam earlier. Commelin had seed from a merchant navy captain (= master) in 1685 as 'Rode Ceylonische Klokjes' (red ceylonese bells). The seed was sown in 1686, the plant flowered and fruited in the same year. Kiggelaer and Ruysch cited Breyne's name for the plant *'Alcea indica, lucido hastato folio, flore Blattariae phoeniceo'.* Also Hermann had the plant (1689:318).

Specimens seen. LINN 860.1, lectotype; Backer 36228 (U); Van der Laan 425, culta (WAG).

Pentapetes phoenicea. Atlas 1 t.19



Tetragonia frutescens. Atlas 5 t.30

TAXODIACEAE

Taxodium distichum (L.) L.C.M.Rich., Ann. Mus. Hist. Nat. (Paris) 16:298 (1810)
Atlas. 5 t.11. *Cupressus Virginiana, foliis Acaciae deciduis* Raji Hist. Plant. (Ray 1688:1408).
Commelin. Hort. Amst. 1:113 t.59. Idem.
Dutch: Virginiaansche cypresse-boom, met Acacie bladeren, die des winters afvallen.
Artist. Maria Moninckx (1686-1690).
Citations. *Cupressus disticha* L. 1753:1003, [Hort. Cliff.:449.2, Van Royen:88.1; Hort. Ups.:289.2; ms LINN; Boerhaave 1719,2:181; Gronovius 1762:154], Miller 1768.
Taxodium distichum (L.) L.C.M.Rich. – Huth, Kraus 1893:120.
Taxonomic notes. Linnaeus based his species on Hort. Cliff. 449.2. As lectotype I propose the sheet marked '3' in H.S.C. 449.2, LINN 1137.2 is an isotype. In the General Herbarium in BM a collection of Gronovius is present.
Distribution. S.E.-N.America.
Introduction 1588. Commelin received his plant from Bishop Henry Compton of London. The tree survived about 200 years. Stomps (1932:401) described its death in 1898. Plukenet 1691:t.85 f.6 and Hermann 1687:207 knew the plant. Breyne (1689:59) saw the plant in Amsterdam in 1688. According to Wein (1931:149) *Taxodium distichum* was first cultivated in England in 1640. However, Ewan (1971:29) attributed the introduction to Hariot in 1588.
Specimens seen. H.S.C. 449.2 '3', lectotype (BM); LINN 1137.2, isolectotype; Gronovius s.n. (BM); Springer s.n., culta (WAG); Baenitz s.n., culta (WAG).

TETRAGONIACEAE

Tetragonia fruticosa L., Sp. Pl.:480 (1753)
Atlas. 5 t.30. *Tetragonocarpos Africana fruticans, foliis longis et angustis.*
Commelin. Hort. Amst. 2:205 t.103. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Tetragonia fruticosa* L. 1753:480, [Hort. Cliff.: 188.1, Hort. Ups.:126.1, Van Royen: 250.1, ms LINN, Boerhaave 1719,2:262, Tilli 1723:161], Burm.f. 1768 P.F.C.:14, Miller 1768, Gaertn. 1791: 204, Haw. 1803:120, Huth.
Taxonomic notes. Adamson 1955:113 designated LINN 648.1 '1 *fruticosa*' as type of *Tetragonia fruticosa.* Although Linnaeus based his species in the first place on

Tetragonia herbacea. Atlas 5 t.29

Van Royen 250.1, represented by rich material of the younger Van Royen in L, and a good specimen is available in H.S.C. 188.1, Adamson's choice must stand. Commelin based his genus *Tetragonocarpus* on this plant.
Distribution. South Africa: Cape Province.
Introduction ante 1701. No data on the origin of this plant are provided, except 'Africana'.
Specimens seen. Bos 249 (WAG); Compton 9330 (NBG); Lam & Meeuse 4257 (L); Van Royen s.n. (L 912.356-36 and -59); Wijnands 903 (WAG).

Tetragonia herbacea L., Sp. Pl.:480 (1753) [Pl.38]
Atlas. 5 t.29. *Tetragonocarpos Africana, radice magna crassa et carnosa.*
Commelin. Hort. Amst. 2:203 t.102. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Tetragonia herbacea* L. 1753:480, [V.Royen: 250.2, ms LINN, Burman 1738:8], Burm.f. 1768 P.F.C.:14, Miller 1768, Haw. 1803:122, Ait.f. 1811: 211, Loudon 1830:203, Huth, Adamson 1955:140.
Taxonomic notes. Linnaeus based his nomen specificum legitimum entirely on Van Royen. No specimens are available in Van Royen's herbarium. Adamson (l.c.) designated Commelin's plate as type.
Adamson states that Linnaeus seems not to have seen specimens of this species, no material being present in LINN or H.S.C.
Distribution. South Africa: Cape Province including the Cape.
Introduction ante 1701. No data on the origin of the plant are provided except 'Africana'.
Specimens seen. Compton 10911 (NBG); Wilms 3227 (L).

Grewia occidentalis. Atlas 2 t.20

THYMELAEACEAE

Struthiola species
Atlas. 9 t.2. [On separate piece of paper] *Struthia* Wach. H. Ultr. 70 (Wachendorf 1747:70).
Artist. J.M.Cok (1749).

TILIACEAE

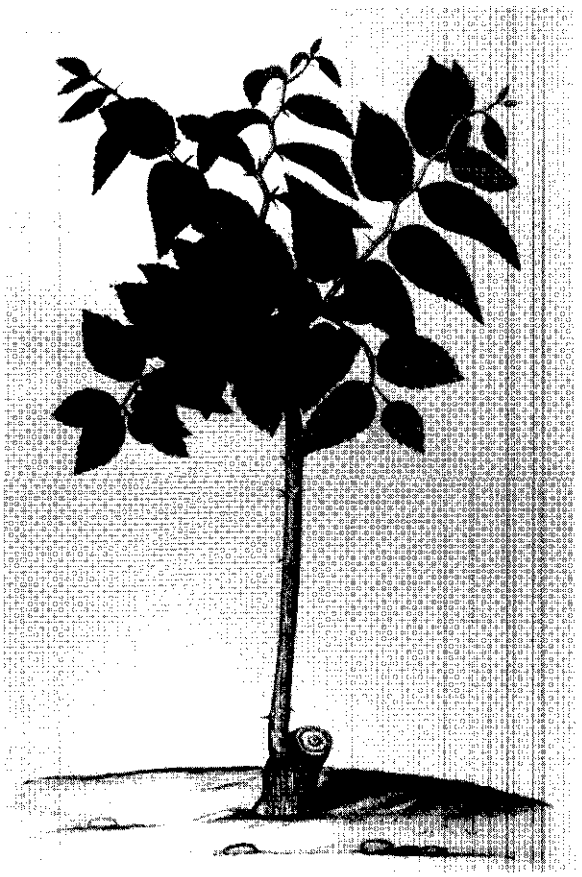
Grewia occidentalis L., Sp. Pl.:964 (1753)
Atlas. 2 t.20. *Ulmi facie arbuscula Aethiopica Ramulis alatis, Floribus Purpurascentibus.* Cat: Hort: Beaumont. (Kiggelaer 1690:42).
Dutch: Moorelands Olms-wijs Boomtje, met gevleugelde takxkens, en paersche Bloemen.
Commelin. Hort. Amst. 1:165 t.85. Idem.
Artist. Jan Moninckx (1690).
Citations. *Grewia occidentalis* L. 1753:964, [Hort. Cliff.:154 and 433.1, Fl. Zeyl. no. 154, Hort. Ups.:

279.1, ms LINN, Ray 1704 app.13, Boerhaave 1719,2: 259], Burm.f. 1768 P.F.C.:30 ('26'), Miller 1768, Huth.
Taxonomic notes. Linnaeus had two species in *Grewia* in Sp. Pl. In Hort. Cliff. he separated them on the shape of the petals, in Sp. Pl. on the shape of the leaves. LINN 1076.1, therefore, is proposed here as lectotype of *Grewia occidentalis* L. This species is the lectotype of the genus *Grewia* L.
Distribution. Southern Africa.
Linnaeus had as habitat 'Aethiopia, Curaçao'. The basis for 'Curaçao' is not in the synonyms cited. It is based on Hermann (1689) or on Boerhaave (l.c.), who tentatively identified *Guidonia* Plumier with Commelin's plate.
Introduction ante 1690. Commelin received his plant from Simon van Beaumont.
Specimens seen. '1 *occidentalis*', lectotype (LINN 1076.1); H.S.C. 433.1 (BM); Bayliss 5567 (WAG); Bos 1575, culta (WAG); Bruce 455 (K); Strey 11189 (WAG); Hutchinson 1313 (K).

TROPAEOLACEAE

Tropaeolum majus L., Sp. Pl.:345 et errata (1753)

Atlas. 1 t.2. *Viola affinis umbilicata (seu peltato). Folia scandens sapore nasturtii.* Breynii Prod. secundo (Breyne 1689).
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1690).
Taxonomic notes. Linnaeus provided a nomen specificum legitimum in Species Plantarum that differs from the phrase-name in Hortus Cliffortianus. In 1738 the leaves were described in the phrase-name whereas in 1753 the diagnostic characters are derived from the flowers. On the advice of Dr Bengt Sparre, the present monographer of *Tropaeolum*, the specimen 143.1 in the Clifford herbarium is selected as lectotype. It has flowers and is in agreement with the diagnosis.
Distribution. Peru, disjunct near the coast around Lima and around Arica (Dr B.Sparre, personal communication).
Introduction 1684. Hermann 1687:628 t.629 provided the first illustration of this species. This may have been the reason for Commelin not to publish his water-colour. Hermann credited Beverningk for the introduction of the species in 1684. Hermann knew two colour-forms 'nunc *cinnabarina* nunc *coccinea*'; Commelin's water-colour shows the latter. Buchenau (1893:186-187, 207) gave a survey of the early literature on *Tropaeolum majus.*
The species was already in cultivation at the Cape during Van Riebeeck's commandership, fide Karsten 1951:58. *Tropaeolum majus* could well have reached Holland from the Cape.
Specimens seen. LINN 481.2; H.S.C. 143.1, lectotype (BM); Sparre H36, Hawaii (S); Ekman 10017, Haiti (S).



Celtis iguanaea. Atlas 5 t.19

ULMACEAE

Celtis iguanaea (Jacq.) Sarg., Silva N.Amer. 7 64 (1895)

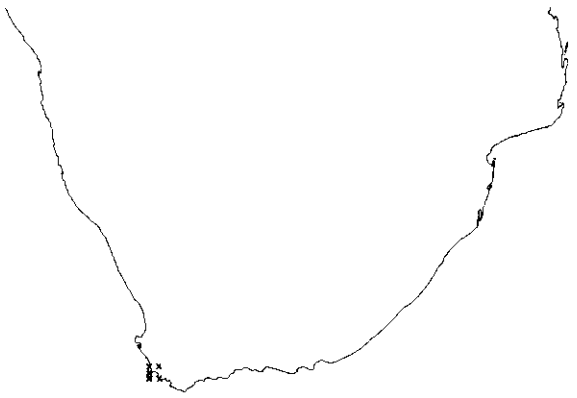
Atlas. 5 t.19. *Jujube americana spinosa, Loti arbore foliis et facie, fructu rotundo, parvo, dulci.* Cat. Hort. Beaum. (Kiggelaer 1690:26).
Commelin. Hort. Amst. 1:141 t.73. Idem.
Artist. Maria Moninckx (1686-1690).
Citations. *Rhamnus iguanaeus* Jacq., Enum. Syst. 1760: 16, Linn.1762:282, [Hort. Cliff.:70.4, ms LINN, Boerhaave 1719,2:245.2].
Celtis rhamnoides Willd. 1806:998.
Celtis aculeata Sw. 1788:53 – Huth.
Taxonomic notes. As far as I know no authentic specimen or illustration is available for the typification of *Rhamnus iguaneus* Jacq.; thus I propose Commelin's Plate 73 here as the lectotype.
Distribution. West Indies, continental tropical America.
Introduction ante 1690. Commelin grew his plant from seed. As distribution he gives Curaçao and neighbouring islands.
I do not know the species to be in cultivation at present.
Specimens seen. Proctor 35378 (U); Stoffers 208 (U).

Trema micranthum (L.) Blume, Mus. Bot. Lugd.-Bat. 2:58 (1856)
Cordia dentata Poiret, Encycl. Méth. (Bot.) 7: 48 (1806)
Varronia alba Jacquin, Enum. Syst. Pl. 14 (1760)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:155 t.80. *Mespilus americana alni vel coryli foliis, fructu mucaginoso albo.*
Calabura alba Par. Bat. Prod. (Hermann 1689:319).
Dutch: Americaansche mespelboom met haselaars of elsebooms bladeren, en witte slijmerige vrugten.
Citations. *Muntingia calabura* L. 1753:509, [Hort. Cliff.:205, ms LINN (deleted), Commelin in Merian 1705 t.53].
Varronia alba Jacq. 1760:14, [ms LINN], Linn. 1762: 276, Willd. 1797:1081, Loudon 1830:70.
Varronia calyptrata DC. 1845:469 – Huth.
Cordia alba (Jacq.) Roem. & Schult. 1819:466.
Taxonomic notes. Commelin's *Mespilus americana* was cited by Linnaeus in the protologue of *Muntingia calabura.* This name can be typified by a specimen in the Clifford herbarium (BM). A specimen in the Linnean herbarium, LINN 672.1 '1 *calabura*' is also available. Linnaeus realised that Commelin's plate does not represent this latter species, so that he deleted his earlier identification in his copy of Commelin and cited the plate for *Varronia alba* in the second edition of Species Plantarum.
Varronia alba Jacq. was implicitly typified by Commelin's plate by Johnston (1940:347-349), no other element being available. Jacquin's name was recombined as *Cordia alba* (Jacq.) Roem. & Schult., Syst. Veg. ed. nova 1819,4:466. This name is used in some floras, other ones give *Cordia dentata* Poiret for the same taxon.
Commelin described in his phrase-name and text white flowers in a branched inflorescence and white, very sticky fruits. He drew this information from Dutch residents of Curaçao. If the plant described indeed came from this island, as also suggested by Commelin's editors Kiggelaer and Ruysch, it could very well be *Cordia dentata* Poir.; I cannot find a better identification. Commelin's identification of his plant with Merian's t.53 (1705) does not help as the latter plate cannot be identified (see Stearn 1982:533).
Commelin's illustrations shows a sterile plant. He had no personal knowledge of its flowers and fruits. The shape of the leaves does not match that of *Cordia dentata* Poir. at all. I agree with Johnston (l.c.) that it does not represent this species and identify it tentatively as *Trema micranthum* (L.) Blume, because it matches some specimens of that species quite well.
Trema micranthum is based on *Rhamnus micranthus* L., Syst. Nat. ed. 10, 1759:937. As lectotype of this name, I propose Table 12 in P.Browne's Civil and natural history of Jamaica (1756), as no specimen of this taxon marked 'Br' is present in the Linnean herbarium. In Pugillus Jamaic. Pl. (Nov. 1759) Plum. ic. 206 f.1 is cited for *Rhamnus micranthus.* In Sp. Pl. ed.2, 1762:280, both Browne's and Plumier's plate are referred to.
The protologue of *Varronia alba* reads '*alba* 7 (*Varronia*) *floribus cymosis.* ħ. Commel. Amst. t.80.' Jacquin cited Commelin's plate only, so it would seem as if *Varronia alba* can be safely filed under *Rhamnus micranthus* L. In my opinion, however, also Commelin's text must be taken into account because *'alba'* probably refers to Commelin's *'fructu mucaginoso albo'* and Jacquin's *'floribus cymosis'* cannot be based on the plate. Jacquin's text of the Enumeratio is very concise. All literature references to Commelin and other authors in this treatise, are in such an abbreviated style. Jacquin cited Commelin's phrase-name and page number in 1763 also.
Varronia alba Jacq. is thus lectotypified with two discordant elements. It is a nomen confusum that should be rejected. A formal proposal for rejection will be submitted.
Distribution. *Trema micranthum* (L.) Blume: Florida, Mexico – Argentina, West Indies (not Curaçao!).
Introduction. Commelin's plant probably came via Curaçao.
Specimens seen. Borsboom 12020 (WAG); Breteler 3448 (WAG); De Bruijn 1302 (WAG).

UMBELLIFERAE

Peucedanum gummiferum (L.) Wijnands, *comb. nov.* [Pl.23]
Atlas. 4 t.6. *Ferula Africana galbanifera frutescens Mirrhidis foliis.*
Commelin. Hort. Amst. 2:115 t.58. Idem.
Artist. Jan Moninckx (1686-1700).
Citations. *Bubon gummiferum* L. 1753:254, [ms LINN, V.Royen:100.4, Ray 1704:252, Boerhaave 1719,1: 65.9, Tilli 1723:60, Commelin 1724:73], Burm.f. 1768 P.F.C.:7, Miller 1768 no.4, Houttuyn 1777:131-132, Lam. 1783:499, Willd. 1797:1440, Ait.f. 1811:147, Sweet 1818:58, DC. 1830:185, Ecklon & Zeyher 1837:353, Huth.
Libanotis gummifera (L.) Crantz, Cl. umbell. emend. 1767:108.
Selinum gummiferum (L.) Spreng. in Roem. & Schult. 1820:564.
Glia gummifera (L.) Sonder, Fl. Cap. 1862,2:548.
Taxonomic notes. Linnaeus based *Bubon gummiferum* on Van Royen's Prodromus:100 no.4 and on Commelin's Plate 58. No specimen vouching for the entry in the Prodromus has been found in L-Van Royen. The species is not represented in the Linnean herbaria. Commelin's plate is the only other element in the Linnean protologue, it was annotated by Linnaeus as *Bubon gummiferum* in his personal copy of Commelin, and it was cited by Van Royen for his species. Comme-

Map 4. Distribution of *Peucedanum gummiferum* (L.) Wijnands.



Map 5. Distribution of *Annesorhiza inebrians* (Thunb.) Wijnands.

lin's Plate 58 is designated here as the lectotype of *Bubon gummiferum* L.

The iconotype has consistently been misinterpreted as to represent the species known as *Glia* or *Annesorhiza gummifera.*

Commelin described his plant as different from the ones shown by Plukenet 1691 t.12 f.3 and Hermann 1698 t.163. These illustrations are syntypes of *Bubon galbanum* L. (= *Peucedanum galbanum* (L.) Benth. & Hook.), the type species of *Bubon* L. The plant is described as 7 feet tall, *Annesorhiza gummifera* auct. is a much smaller plant (4 feet fide Adamson & Salter 1950:624). The latter species is strongly heterophyllous, Commelin's plant is not. Moreover, it does not match specimens annotated as *Glia* or *Annesorhiza gummifera* in herbaria.

Commelin's Plate 58 does match satisfactorily specimens of *Peucedanum tenuifolium* Thunberg.

I therefore propose:

Peucedanum gummiferum (L.) Wijnands, *comb. nov.*,
basionym: *Bubon gummiferum* L., Sp. Pl.,1753:254,
lectotype: Commelin, Hort. Amst. 2:115 t.58,

heterotypic synonyms:

Peucedanum tenuifolium Thunb., Prod. Pl. Cap. 1794:50,
lectotype: Thunberg s.n., Mosterd Hoek Cap. b. spei (UPS-Thunb. 7094);
Seseli uliginosum (Eckl. & Zeyh.) Hiroe, Umbelliferae of World:1127 (1979).

As the correct name for the species commonly but incorrectly named *Glia gummifera* (L.) Sond. or *Annesorhiza gummifera* (L.) Jackson I propose:

Annesorhiza inebrians (Thunb.) Wijnands, *comb. nov.*,
basionym: *Oenanthe inebrians* Thunb., Prod. Pl. Cap. 1794:49,
type: Thunberg s.n., e Cap. b. spei (UPS-Thunb. 6926),

heterotypic synonym:

Oenanthe capensis Houttuyn, Nat. Hist. 1777,2,8: 140, not *Annesorhiza capensis* Cham. & Schlecht. 1826,
type: Houttuyn 1777 t.45 f.2.

Houttuyn based his species probably on a Thunberg collection, he co-sponsored Thunberg's expedition. The iconotype of *Oenanthe capensis* may well have been made after a duplicate of the type of *Oenanthe inebrians* (cf. Merrill 1938:297, 310, 357-358).

Houttyn's specimens were bought by Delessert (see Lasègue 1845:66), so that they will have been moved to the herbarium in Geneva. No specimen of *O. capensis* has been found in G that can be recognized as Houttyn's.

Hiroe (1979:675) included *Glia* in *Annesorhiza.* If *A. inebrians* is considered to differ from *Annesorhiza* at generic level, the name *Glia* is not available as it is a synonym of *Seseli* L., according to the Rules as given by the International Botanical Congress in Sidney (Greuter 1981:905). *Ruthea* Bolle 1862 is a later homonym of *Ruthea* Opatowski 1836 (Fungi).

Distribution. South Africa: Cape.

Introduction ante 1700. Commelin did not specify the source of his plant.

Specimens seen. *Peucedanum gummiferum:* Esterhuysen 4219, 16244, 20580, 21092 (BOL); Armer s.n. (NBG); Compton 3929, 10442, 10554 and 10650 (NBG); Kerfoot 5548 (STE); Kruger 1007 (STE); Levyns 696 (STE); Manson 194 (STE); N.B.G.expedition 67/73 (NBG); Rourke 748 (NBG).

Annesorhiza inebrians: herb. Buse (L 908.255-482); Bond 200 (NBG); Boucher 1470 (STE); Compton 712 and 8086 (NBG); Kerfoot 5826 (STE); Kruger 76 (STE); McKinnon s.n. (STE); Taylor 5671, 5826 and 6648 (STE); Thode 6234 (STE).

Not identified.

Atlas. 8 t.31. No name.

Commelin. Not published by Commelin.

Artist. Jan Moninckx (1686-1706).

VERBENACEAE

Lantana camara L., Sp. Pl.:627 (1753) [Pl.7]
Atlas. 2 t.17. *Viburnum Americanum, Urticae foliis, lamii odore, Floribus miniatis.*
Camara Tinga. Pison:
Dutch: Americaansche Viorne, met brandende Netelen bladeren, doove-Netelen reuck, en Meni-verwige Bloemen.
Commelin. Hort. Amst. 1:151 t.78. Idem.
Artist. Jan Moninckx (1686-1690).
Citations. *Lantana camara* L. 1753:627, [Hort. Cliff.: 319.1 (cited in Sp. Pl. as '349'), ms LINN].
Lantana mista L. Syst. Nat. ed. 12, 1767:417, Persoon 1797:602, Willd. 1800:315, Schauer 1847:600, Huth.
Taxonomic notes. *Lantana camara* L. has a new nomen specificum legitimum in Sp. Pl. LINN 783.4 probably is the type. As the new element in the diagnosis is 'caule inerme', also Plukenet 1696 t.114 f.4 might be important for the Linnean concept as it is 'non spinosum'.
In herb. Van Royen several specimens are present: L 908266, 91330-203, -214. All are annotated by A.van Royen. L 91330-201, probably part of herb. Van Royen is annotated 'A.D.Catesby 1732', I suppose this is Mark Catesby, the author of The Natural History of Carolina, Florida and the Bahama Islands, 1731-47. The Clifford herbarium contains several sheets vouching for entry 319.1, two of them are annotated 'floribus miniatis' as in Commelin's name.
Lantana mista L. seems to be based on Dillen 1732 t.56 f.64, cf. Schmidt 1965:80.
Distribution. Tropical America.
Introduction 1687. Commelin raised his plants from seed given by Simon van Beaumont, who received it from Curaçao. Kiggelaer (1690:41) recorded the plant from the Hortus Beaumontianus and cited for it Hermann 1687:698 and Breyne 1689:103. Breyne saw the plant in the collections of Beverningk, Amsterdam, Leiden and De Flines in 1688. Hermann included the plant in the appendix, he probably received it in 1687.

Stachytarpheta boldinghii Moldenke, Phytologia 1:471 (1940) [Pl.39]
Atlas. 5 t.39. *Verbena Americana Veronicae Foliis, Flore Coccineo spincato* (Breyne 1689:103).
Commelin. Hort. Amst. 2:223 t.112. Idem, and *Verbena Orubica Teucrii folio, Primulae Veris flore, siliquis, & Seminibus longissimis* (Hermann 1689:383).
Artist. Jan Moninckx (1699-1700).
Citations. Pre-Linnean: Ray 1704:286, Vaillant 1718: 48.
Stachytarpheta orubica (L.) Vahl, Enum. 1804,1:208 – Huth.
Taxonomic notes. Boldingh (1913:345) has the red-flowered *Stachytarpheta* of Aruba as *S.sanguinea* Mart. & Schau, i.e. Martius ex Schauer in DC. Prodr. Syst. Nat. 1847,11:564. This taxon was described from Brazil, Bahia and based on collections of Martius and of Blanchet 3120. A drawing of it is published in Flora Brasiliensis 1851,9 t.34. Moldenke defined the plant of Aruba and Bonaire as a different species, *S.boldinghii.* Type: Boldingh 6352 (NY).
Huth identified the plate as *S.orubica* (L.) Vahl. The epithet *orubica* suggests a relation with '*Verbena orubica* . . .' Hermann 1689:383, cited by Commelin, and the origin of Commelin's plant, Aruba.
Verbena orubica L., Sp. Pl. 1753:18 'habitat in Oruba insula . . .' has its epithet and distribution based on Hermann's information which is cited by Linnaeus through Plukenet 1692 t.327 f.7 and 1696:382. Plukenet 1692 t.228 f.4 is not linked to Plukenet 1696:382 as implied by Linnaeus, the figure is of 'item (i.e. *Verbena*) *Teucrii foliis Frutex Curassavicus*'.
Commelin equated Hermann's name with '*Verbena Americana Veronica Foliis Flore coccineo spicato*' of Breyne. Hermann's plant cannot be identified with certainty with Breyne's, but as both plants are probably from Aruba and as Commelin equates both with his plant from the same Island, I consider it likely that all three elements represent *S.boldinghii.* Therefore the epithet '*orubica*' that now legally adorns the blue-flowered species from Venezuela and Colombia historically belongs to the red-flowering one from Aruba and Bonaire. The other species recorded from the West Indies (not Aruba) by Boldingh (l.c.) is *S.jamaicensis* (L.) Vahl.
Verbena orubica L. has a new nomen legitimum specificum in Sp. Pl. There is no specimen of it in LINN. The diagnosis can however be extracted from the entry in Hort. Cliff.:10.1, a type might be selected in H.S.C. The only new element in Sp. Pl. is Ehret's drawing t.5 f.1 (1748).
S.boldinghii might eventually turn out to belong to *S. mutabilis* (Jacq.) Vahl, the other red-flowered species in the Antilles.
Distribution. Aruba and Bonaire (Moldenke 1971:113).
Introduction ante 1688. Commelin received his plant from Daniel des Marets in 1698 together with several others, also not West Indian ones. The habitat is said to be Aruba. Hermann and Breyne published the species in 1689. Breyne had it as a herbarium specimen from Simon van Beaumont and seeds from Kiggelaer as '*Verbena* ex Insula Arauba'
Specimen seen. *S.mutabilis* (good match): Camacho Durán 103 (WAG).

VITACEAE

? Rhoicissus capensis (Burm.) Planch. in DC., Monogr. Pl.:463 (1887)
Atlas. 8 t.29. No name.
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Distribution. South Africa: Cape.

Zamia pumila. Atlas 5 t.10

ZAMIACEAE

Zamia pumila L., Sp. Pl. ed.2:1659 (1763)
Atlas. 5 t.10. *Palma Prunifera Humilis non Spinosa Insulae Hispaniolae, Fructui Jujubino similis, ossiculo triangulo.*
Commelin. Hort. Amst. 1:111 t.58. Idem.
Dutch: Leege, doornloose, pruymdragende dadel-boom, uyt het eyland Hispaniola, met drie-kantige steenen, welkers vrugten die van de jujube niet qualyk en gelyken.
Artist. Maria Moninckx (1690-1706).
Citations. *Zamia pumila* L. 1763:1659, [ms LINN], Kraus 1893:120, Eckenwalder 1980:715.
Zamia debilis L.f. in Ait. 1789,3:478, Ait.f. 1813:410, Willd. 1806:847, Poiret 1817:519, Sweet 1818:218, A.DC. in DC. 1868:543, Huth, Smith 1961:417.
Zamia media Jacq. var. *commeliniana* Schuster in Engler, Pflanzenreich 1932 IV,1:156.
Zamia integrifolia L.f. in Ait. 1789,3:478 – Poiret 1808:833.
Taxonomic notes. Linnaeus based this species on plants described by Commelin, Ehret, Miller and Plukenet. Commelin's Plate 58 represents a species from the West Indian islands, the other three references apply to a species from Mexico, i.e. *Z.furfuracea* L.f. in Ait. (Smith l.c.).
Schuster (l.c.) excluded all synonyms except Commelin from *Z.pumila* L., and as such lectotypified the name. Eckenwalder (l.c.) made the same choice.
Distribution. West Indian islands, Florida; see Eckenwalder 1980:711 for a map.
Introduction 1690. Fruits and seeds of the plant were brought by the surgeon Batenburg from Hispaniola in 1690. Hermann (1698 t.210) published an illustration of a *Zamia* from Fagel's collection.
Specimens seen. Heldring-Talma s.n. (U); Kinloch 9767 (U); Bijhouwer 90 (WAG).

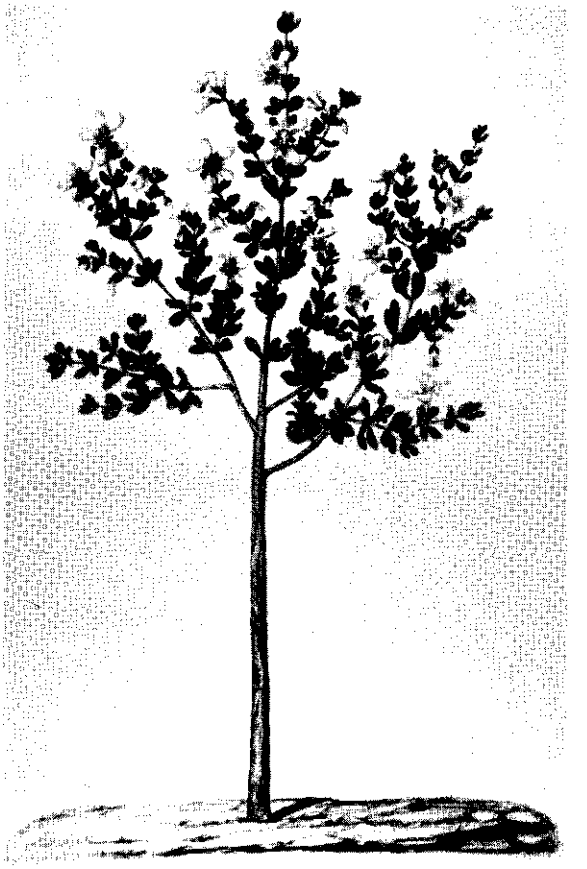
ZINGIBERACEAE

Kaempferia rotunda L., Sp. Pl.:3 (1753) [Pl.60]
Atlas. 8 t.15. No name. [*Zedoaria rotunda* Commelin 1689:371].
Commelin. Not published by Commelin.
Artist. Jan Moninckx (1686-1706).
Note. This water-colour is matched with Reede 11 t.9 'Malan-kua'. Commelin mentioned in his annotations in Reede that he grew this species and excavated the roots.
Distribution. S.Asia. Hermann knew the plant from Ceylon.

ZYGOPHYLLACEAE

Guajacum sanctum L., Sp. Pl.:382 (1753)
Atlas. No water-colour present.
Commelin. Hort. Amst. 1:171 t.88. *Guaiacum americanum lentisci folio.*
Dutch: Amerikaans pokhout, met bladeren van de Mastic-boom.
Citations. *Guajacum sanctum* L. 1753:382 – not cited in the protologue – Linn. 1762:547, [ms LINN], Willd. 1799:538, Huth.
Taxonomic notes. Linnaeus based *Guajacum sanctum* on Van Royen:208. No specimen was found in Van Royen's herbarium. There is a specimen marked with the number 2 of the species in Sp. Pl. in LINN 532.2, this specimen is proposed here as the lectotype of *Guajacum sanctum* L. The change in the nomen specificum legitimum from Van Royen's phrase-name is not significant, it merely brings it in line with the nomina of the other two species of *Guajacum* in Sp. Pl.
Distribution. From Florida to the Lesser Antilles, on the islands and the mainland of Central America. Linnaeus' habitat 'in Americas insula S.Johannis de Porto Ricco' is derived from Bauhin 1623:448.
Introduction ante 1690. Commelin's plant was grown from seed, received from 'America'. It grew in the Hortus for some years. Plukenet 1692 t.94 f.4 shows a *Guajacum* that differs from Commelin's. Whether

Tribulus cistoides. Atlas 1 t.38



Zygophyllum sessilifolium. Atlas 6 t.26

Fagel's plant mentioned by Plukenet is Commelin's or Plukenet's kind cannot be established.
Specimens seen. LINN 532.2; Gaumer 669 (S); Sintenis 4820 (K); Small & Small 6989 (S); Wilson 7235 (K).

Tribulus cistoides L., Sp. Pl.:387 (1753)

Atlas. 1 t.38. *Tribulus terrestris americanus, chamaecisti flore, fructu spinoso maximo.* Breyn. Prod. 2 (Breyne 1689:103).
Dutch: Steeckende Hard-nooten, van America, met groote Bloem.
Commelin. Hort. Amst. 1:63 t.32. Idem.
Dutch: Americaansche eert-angels, met bloemen van klene cistus, en seer groote doornige vruchten.
Artist. Jan Moninckx (1689).
Citations. *Tribulus cistoides* L. 1753:387 – not cited in the protologue – [ms LINN, Ray 1704:649], Huth.
Taxonomic notes. There is a new nomen specificum legitimum for *Tribulus cistoides.* The specimen LINN 547.5 is marked '4', the number of the species in Species Plantarum but also 'Br' is written on it, indicating that it is a specimen from Patrick Browne, not available to Linnaeus before 1758. The epithet *'cistoides'* has been added by Solander, fide Savage 1945:74. Also '4' might be Solander's. There is a specimen in Herb. V.Royen L 908.270-464 but it is annotated by the younger V.Royen and therefore does not qualify; it is sterile. From the remaining syntypes Hermann 1698:236 t.236 is proposed as the lectotype. Commelin's plate is a better representation of the species. Although Linnaeus knew Commelin's plate and annotated it *'Tribulus cistoides'*, I prefer not to designate it as lectotype.
After discussion with Dr El Hadidi I think it better to keep *T. cistoides* as a good species and not treat it as *T. terrestris* L. var. *cistoides* (L.) Oliver.
Distribution. Tropical America and the S.W.Pacific, mostly a plant of the coastal strand.
Introduction ante 1688. Commelin gives no information on the origin. He mentions, however, he had ripe seeds in 1689, a remarkable fact since they ripened rarely. Therefore he probably had the species already for some years. Plukenet 1691 t.67 f.4 had a plant from a Dutch Garden. Hermann (1689:382) had *Tribulus terrestris major Curassavicus.* Breyne (1689:103) saw the plant in Amsterdam and Beverningk's garden.
Specimens seen. Valeur 621 (K); Ekman 7074 (K); Breteler 4398 (WAG).

Zygophyllum sessilifolium L., Sp. Pl.:385 (1753)

Atlas. 6 t.26. *Fabago Africana arborescens, flore sulphureo, fructu rotundo.*

Commelin. Rar. & Exot.:10 t.10. Idem.
Artist. Maria Moninckx (1686-1705).
Citations. *Zygophyllum sessilifolium* L. 1753:385, [Hort. Cliff.:160.2, V.Royen:460.2, ms LINN, Tilli 1723:59, Burman 1738:6, Boerhaave 1719,1:319.2], Miller 1768, Lam. 1788:442, Willd. 1799:563, Huth. *Zygophyllum commelinii* Eckl. & Zeyh. 1834:97.
Taxonomic notes. *Zygophyllum sessilifolium* has a new nomen specificum legitimum in Sp. Pl. The specimens in LINN 544.5 and S-Linn 168.3 are almost certainly post-1753. However, there is a specimen in H.S.C.160.2 that could typify the name.
Z. commelinii is a synonym of *Z. sessilifolium*, the type is 'in dunis arenosis prope Rietvalley et Saldanhabay' Ecklon & Zeyher (not present in S, PRE, BOL, NBG).
Distribution. South Africa.
Introduction. Commelin did not specify the origin of his plant. He cited the Witsen Codex for its habitat at the Cape.
Specimens seen. LINN 544.5; Lewis Grant 2454 (WAG); Gillet 4167 (K); Salter 4654 (K); Werdermann & Oberdieck 379 (WAG); Thunberg s.n. (UPS-Thunb. 10133); Oliver 5103 (PRE).

Not identified as to family

Atlas. 5 t.20. *Prunus Javanica Atriplicis Foliis* [Kiggelaer 1690].
Commelin. Hort. Amst. 1:143 t.74. Idem, and 'Kakoesa Javanensibus'.
Dutch: Javaansche pruyme-boom, met melde-balderen.
Artist. Maria Moninckx (ca.1690).
Citations. No interpretation of this plate is known to me.
Taxonomic notes. I have not been able to identify Commelin's plant. Petiver (1699:37) tentatively identified it with *Elemnifera Curassavica arbor* Hermann (1689: 332), pictured by Plukenet t.173 f.5.
Prunus javanicus hortul. is cited as a synonym of *Sideroxylon lycioides* L., but Commelin's plate does not represent the latter species.
Introduction. The plant was raised from seed, received from Java in 1686 (possibly sent by Cleyer).

Atlas. 8 t.71. No name.
Commelin. Not published by Commelin.
Artist. Not signed (1686-1706).

Atlas. 8 t.25. No name.
Commelin. Not published by Commelin.
Artist. Maria Moninckx (1686-1706).
Note. The water-colour shows an ericoid shrub from the Cape. It could belong to the *Rutaceae*.

APPENDIX A

The library of the Hortus Medicus, an index to the literature as cited by the Commelins

The literature cited by the Commelins and referred to in the Moninckx Atlas gives a fair representation of contemporary and earlier books on botany. The Hortus Medicus being an institution independent of the Athenaeum Illustre, it had its separate library. This was incorporated in the library of the University of Amsterdam in 1877, when the Athenaeum Illustre was raised to the status of a University. Previously in each province of the Netherlands, there could only be one University, Leiden of old being the one for the province of Holland.

The first rector magnificus of the University of Amsterdam was the director of the Hortus Botanicus, C.A.J.A.Oudemans. At an earlier date, part of the Hortus library had been deposited in the municipal library of Amsterdam, but it was later incorporated in the library of the University.

From five manuscript lists, two of which are undated and the other ones date from 1834, 1845 and 1855, respectively, and a printed catalogue of the municipal library of 1861, a reconstruction of the contents of the Hortus library in the days of the Commelins has been attempted (Sprenger 1978).

The books of the library of the Hortus Medicus are all bound in white chalf with the imprint 'Hortus Medicus Amstelodamensis' in gold. Such copies were found in the library of the University of Amsterdam for all titles in this index, except the last three. The following catalogue represents the books available in the institutional library up to 1706. Of course, the Commelins had their personal libraries and the library of the Athenaeum Illustre was also available, certainly to Caspar whose mother's father Johannes Heydanus was its librarian.

Pr. stands for G.A.Pritzel, *Thesaurus Literaturae Botanicae* ed. nova 1872-1877, Leipzig.

Aldini, T. 1625. Exactissima descriptio rariorum quarundam plantarum quae continentur Romae in Horto Farnesiano. Romae. Pr.1590 (Castelli).

Alpinus, P. 1629 (the first edition is of 1627). De plantis exoticis libri duo. Venetiis. Pr.112.

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APPENDIX B

Biographical notes on persons connected with the books and plants of the Commelins

Aerssen: Cornelis van Aerssen van Sommelsdijk 1637-1688
Van Aerssen was governor of Surinam (1683-1688). He did much to develop agriculture and horticulture in Surinam, in co-operation with the Hortus Medicus in Amsterdam. He regularly sent seeds and living plants from there, also some he obtained from Barbados, to Amsterdam and Daniel des Marets. *Abelmoschus esculentus* was sent by him as 'okkoro' (Hort. Amst. I t. 19). Commelin did not acknowledge Van Aerssen for this or any other plant.
See Brinkman 1980, Oudschans Dentz 1938.

Bas, Theodorus (Dirck) 1640-1709
City councillor of Amsterdam 1681-1709, Burgomaster 1696-1708. Director of the VOC from 1704. No botanical interest of Bas is known.
Listed in the dedication of Hort. Amst. I (1697), Praeludia (1703), Pl. rar. et exot. (1706).
See Elias 1905:595.

Batenburg fl.1690
Ship's surgeon who visited Hispaniola.
Acknowledged for: *Zamia pumila* 1690.

Beaumont, Simon van 5.10.1640 (baptised) - 8.2.1726
Secretary of the States of Holland and West-Friesland from 1673. Owned a rich botanical collection at The Hague. A catalogue of this garden was published by Kiggelaer in 1690, an unpublished appendix to this catalogue is in the Bodlean Library at Oxford, MS 37 I-IV, and in the British Library MS Sloane 3338 fol.44. Linnaeus praised Van Beaumont's collection in Hortus Cliffortianus (1738); see Kuijlen 1977, Dek 1974. Specimens from his garden are in herb. Sloane, see Dandy 1958:90.
Van Beaumont sent his gardener to the West Indies to collect plants, see the text on *Plumeria rubra* from Porto Rico.
Acknowledged for: *Agave rigida, A.vera-cruz, Aloe succotrina, Dracaena fragrans, Euphorbia officinarum, Grewia occidentalis, Melicoccus bijugatus, Pedilanthus tithymaloides, Phyllanthus epiphyllanthus, Plumeria rubra, Sansevieria hyacinthoides.*

Bentinck, Willem (Earl of Portland from 1689) 1649-1709
Mention is made of a Bentinck-Codex in the texts on *Aloe succotrina, Kalanchoe ceratophylla* and *Pedilanthus tithymaloides.* Bentinck owned a garden 'Zorgvliet' at The Hague. The Bentinck-Codex does not necessarily represent plants grown in his own garden. Plukenet published plates from the Codex; its present location, if it is still extant, is not known to me. Specimens from Bentinck's garden are in Herb. Sloane (BM); see Dandy 1958:90.

Beverningk, Hieronymus van 1614-1690
Dutch diplomat and amateur-botanist. He was curator of the University of Leiden from 1673 onward, and took a special

Hieronymus van Beverningk 1614-1690. Courtesy Iconographisch Bureau The Hague.

interest in the Hortus Botanicus. Beverningk owned a substantial botanical collection at his estate 'Lokhorst' or 'Oud-Teilingen' near Warmond. He probably owned the first substantial collection of Cape plants. Willem ten Rhyne sent him plants from the Cape.
See Gunn & Codd 1981.

Bleyswyk, François van fl.1706-1744
Engraver at Leiden and Amsterdam. Artist of the 1716 title-page of the second edition of Praeludia botanica and Plantae rariores et exoticae.
See Benezit 1966.

Block, Agnes (Domina de Flines) 1629-1704
Owned the estate 'Vijverhof' near Loenen. Sister-in-law of Philips de Flines (1640-1700), who owned 'Spaern-Hout', Haarlem.
See Van de Graft 1943, Poelhekke 1963, Schulz 1977.
Acknowledged for: *Euphorbia neriifolia.*

Breyne, Jacob 1637-1697
Breyne was a merchant and botanist in Danzig. He visited Holland several times and published on the plants that he observed in the Dutch collections. Breyne (1689) reported on several plants he had noted in the Hortus Medicus in 1688.
In 1683 Huydecoper sent copies of drawings from the Cape to Breyne which were published by Johann Philipp Breyne in 1739.
See Gunn & Du Plessis 1978, Kuijlen 1982.

Claudius, Hendrik ca.1655-1697
Apothecary and botanical artist who worked for Andreas Cleyer in Batavia and for Simon van der Stel at the Cape. Claudius is generally credited for the drawings made during Van der Stel's journey to the Copper Mountains in 1685. It is possible, but not at all certain, that Claudius did the drawings in the Codex Witsenii that Commelin used to complete his illustrations of *Aloe plicatilis, Haworthia margaritifera, H.marginata* and *H.retusa.*
See Gunn & Codd 1981.

Cleyer, Andreas ?-1697 or 1698
The German Cleyer travelled to Java, China and Japan in the service of the VOC. He was requested by Huydecoper to collect plants for the Hortus Medicus. Cleyer also sent plants through his assistant Georg Meister. Hendrik Claudius, the supposed artist of Simon van der Stel's Namaqualand drawings, had been sent from Batavia to the Cape by Cleyer.
See De Wit 1949, Karsten 1951, Rijksarchief Utrecht Familiearchief Huydecoper, letter of 28.11.1685 from Huydecoper to Cleyer (copy).
Acknowledged for: *Cassia javanica* 1688, *Cinnamomum camphora* 1687, *Parkia javanica* 1688, *Pterocarpus indicus.*

Clifford, George 1685-1760
Commissaris Hortus Medicus from 1751 onward. Mentioned on the title-pages of the Moninckx Atlas vols.5, 6, 7 and 8. Owned the estate 'Hartekamp' at Heemstede, which housed a superb botanical collection described by Linnaeus (1738). The Hortus purchased plants from his collection at the auction in 1761 (memoriael).
See Elias 1905:882.

Cok, Jan Matthias. See I.4.

Collen, Ferdinand van, Heer van Gunterstein en Tienhoven 1681-1764
Commissaris Hortus Medicus from 1749. Owned the estate 'Gunterstein' at Breukelen. Mentioned on the title-pages of the Moninckx Atlas vols.5, 6, 7 and 8.
See Elias 1905:806.

Commelin, Caspar. See I.3.

Commelin, Jan. See I.2.

Compton, Henry 1632-1713
Bishop of London. Owned a rich botanical collection in London at Fulham Palace. The Compton Codex, donated to Compton in Amsterdam in 1691, consisted of drawings made for Simon van der Stel's journal in 1685. The codex, or a copy of it, is preserved in the British Museum, bibl. Sloane no.5286. Plukenet and Petiver published drawings from it.
The plants sent by Compton to the Hortus Medicus were probably collected by John Banister in Virginia 1678-1692.
See Dandy 1958:84, Ewan 1969:31.
Acknowledged for: *Aralia spinosa, Euonymus americana, Physocarpus opulifolius, Taxodium distichum, Yucca aloifolia* var. *draconis.*

Coopman, Floris fl. ca.1700
Acknowledged for: *Plumeria rubra.*

Cornelisz, Herman. See I.1.

Corver, Joan 1628-1716
Burgomaster of Amsterdam 1681-1715. Director of the VOC from 1688 onward. Owned the estate 'Beeckesteyn', Velsen; see Elias 1903:521.
Listed in the dedication of Hort. Amst. I (1697), Hort Amst. II (1701) and Pl. rar. et exot. (1706).

Cupani, Francesco 1657-1711
See the text on *Lathyrus odoratus.*

De Flines. See Agnes Block.

Gerritsz, Hendrik. See I.1.

Graafland, Joan 1659-1733
Burgomaster of Amsterdam in 1705; see Elias 1903:525.
Listed in the dedication of Pl. rar. et exot. (1706).

Gundelsheimer, Andreas. See Tournefort.

Hartog, Jan ca.1663-1722
Gardener and collector at the Cape from 1691, subordinated to Oldenland whom he succeeded in 1697 as a master gardener. It is very likely that Hartog took part in the collection and cultivation of plants that were sent to Amsterdam by Simon and Willem Adriaan van der Stel.
See Gunn & Codd 1981.

Haze de Georgio, Jeronimus de 1651-1725
Burgomaster of Amsterdam 1695-1717. Director of the WIC

from 1696 and of the VOC from 1708 onward; see Elias 1905: 599.
Listed in the dedication of Pl. rar. et exot. (1706).

Hermann, Paul 1646-1695
The German Hermann, born at Halle, sailed for Ceylon in 1671 as medical officer in the service of the VOC. He returned to Leiden in 1680 as successor to Arnold Syen as professor of botany. Hermann sent specimens and seeds to Jan Commelin from Ceylon. He collected at the Cape as well.
See Commelin 1701:169, Gunn & Codd 1981.

Herolt, Johanna Helena. See I.4.

Hotton, Petrus 18.6.1648 Amsterdam - 10.1.1709 Amsterdam
Petrus Hotton was born in Amsterdam as the son of Godefroy Hotton (1596-1656). He immatriculated in the University of Leiden as student in medicine in 1665. Hotton took his doctor's degree in 1672. In the same year, Hotton installed himself as a medical practitioner in Amsterdam. During 1679 and 1680 he temporarily filled the place of Paul Hermann in Leiden as professor of botany; Hermann was in Ceylon during that time. After Jan Commelin's death in January 1692 Hotton was appointed Horti Medici botanicus. He declined to the invitation to succeed professor Albertus Muntingh in Groningen who died early in 1684. After the death of Hermann in 1695, Hotton returned to Leiden as his successor on February 28. On May 9 he accepted the chair with an oration *Sermo academicus quo rei herbariae historia et fata adumbrantur*, published by Abraham Elzevier (reprinted in Usteri 1790: 195-244). Hotton seems to have been a capable botanist, interested in taxonomy. His botanical system was never published (Boerhaave 1719 *Historia brevis* and *Hottonia*). Hotton was in contact with contemporary botanists such as Tournefort (see Jussieu 1719) and Tilli (1723). He was a member of the Royal Society of London and of the Leopoldina (No.246 'Cratevas').
At the auction of Hotton's library in 1709 well over 4000 volumes were listed in the catalogue *Bibliotheca Hottoniana*, Lugduni Batavorum – Johan van der Linden 27 May – 4 June 1709. A posthumous publication of Hotton might be *Thesaurus phytologicus*, Nürnberg – Johann Leonard Buggel und Johann Andreas Geiss, 1738 XII + 958. It is not clear to me whether Hotton was responsible for the entire volume or only for the indices.
See Veendorp & Baas Becking 1938, Raven 1942:291, Gibbs 1958:49, Clokie 1964, Andreas 1976:97, De Ridder 1981.

Hudde, Joannes 1628-1704
Burgomaster of Amsterdam 1672-1703. Director of the VOC from 1679 onward. Known as a mathematician; see Elias 1903: 528. Listed in the dedication of Hort. Amst. I (1697), Hort. Amst. II (1701), and Praeludia botanica (1703).
Hudde was a very influential man in Amsterdam. Huydecoper called him 'our patron' in a letter to Commelin (Rijksarchief Utrecht, Familie-archief Huydecoper, letter of 17.2.1684, copy).
Acknowledged for: *Agave vivipara* 1700.

Huydecoper, Joan, Ridder, Heer van Maarseveen en Neerdijk 1625-1704
Burgomaster of Amsterdam 1673-1693. Director of the VOC from 1666 onward. Commissaris van de Nieuwe Plantage and Hortus Medicus from 1683. Owned the estate 'Goudesteijn', Maarssen; see Elias 1903:518.
Listed in the dedication of Hort. Amst. II (1701) and Praeludia botanica (1703), mentioned on the title-pages of the Moninckx Atlas vols. 1, 2, 3 and 4. In 1683 Huydecoper was nominated Commissaris of the Hortus Medicus, as was Jan Commelin. Huydecoper was very active in the acquisition of plants for the Hortus, mainly by using his influence as director of the VOC. Huydecoper's herbarium is in herb. Sloane (BM) as the herb. 'Meerseveen'; see Dandy 1958:162.
Acknowledged for: *Castalis nudicaulis, Diospyros glabra, Oxalis incarnata, Pelargonium lobatum, Phylica ericoides, Polygala myrtifolia.*

Coat of arms of Joan Huydecoper in Atlas volume 1.

Jong, Johannes de fl. ca.1690
De Jong is acknowledged for a plant, '*Caesalpinia sappan*', sent to him from Japan.

Kiggelaer, Frans baptised 4.12.1648 (Haarlem) - buried 22.12.1722 (The Hague)
Kiggelaer was an apothecary who entered the service of Frans van Sevenhuysen, an apothecary in The Hague, in 1668 and stayed with him for two and a half years. Later he became an

independent apothecary and held high positions in the Apothecaries' Guild. Van Sevenhuysen had a botanical collection; his garden was adjacent to that of Simon van Beaumont who bought and added Van Sevenhuysen's in 1697. Kiggelaer had another position, viz. as a clerk at the secretary of the States of Holland, where Simon van Beaumont held the office of Secretary.
Kiggelaer published a catalogue of Van Beaumont's garden in 1690. With Frederik Ruysch he edited Jan Commelin's first volume of *Hortus medicus Amstelodamensis* (1697). His last botanical publication is an edition of Munting's *Aardgewassen* (1696): *A.Munting's phytographia curiosa* (1702).
An auction catalogue of Kiggelaer's library and also auction catalogues of his natural history cabinets are preserved in the British Library (SC.353(5)). His herbarium was bought by Hans Sloane (now Herb. Sloane vols.214-227, BM).
See Karsten 1951, Dandy 1958, Kuijlen 1977. Drs J.Kuijlen supplied valuable, unpublished information on Kiggelaer.

Kruyper, H.G. See I.1.

Lamotius, Isaac Johannes fl.1685
Chief of Mauritius, a possession of the VOC, from 1676. Huydecoper instructed him to collect plants. Also botanical drawings were made, but the artist was drowned together with his drawings. Paint-brushes and paint were sent by the Hortus to Lamotius to equip a new painter, but I know of no drawings in existence as a result of this action.
See Huydecoper's letter to Lamotius d.d.7.12.1685 in Familie Archief Huydecoper, Rijksarchief Utrecht (copy), entry of 3.1.1686 in 'Memoriael'
Acknowledged for: *Momordica charantia* 1686, see Commelin's note in Reede's *Hortus Malabaricus* vol.8:17 t.9 (1688).

Marets, Daniel des fl. 1635-1714
Intendant of Stadtholder Willem's estates and gardens from 1685 onward, director of Willem's library from 1689, chief controller of his household in The Netherlands from 1692 onwards (Harris ed. 1974:83). Des Marets may well have been an important link between botanical collections in Holland and England.
Acknowledged for: *Stachytarpheta boldinghii* 1698, *Astroloba spiralis* 1702, *Yucca aloifolia* 1702.
Specimens originating from Des Marets are in Herb. Sloane, see Dandy 1958:124, Nieuw Nederlandsch Biografisch Woordenboek vol.2 (1912), col.870-871.

Meister, Georg fl. 1675-1692
Meister worked in Java for Andreas Cleyer in the service of the VOC from 1677 onward. On his way home in 1688 he took back from the Cape a.o. nine chests of trees and plants for the Hortus Medicus.
See Gunn & Codd 1981, De Wit 1949, Breyne 1689, Meister 1692 'Der orientalisch-indianische Kunst- und lust-gärtner', Allgemeine Deutsche Biographie, vol.21 (1885) p.254.

Moninckx, Jan. See I.4.

Moninckx, Maria. See I.4.

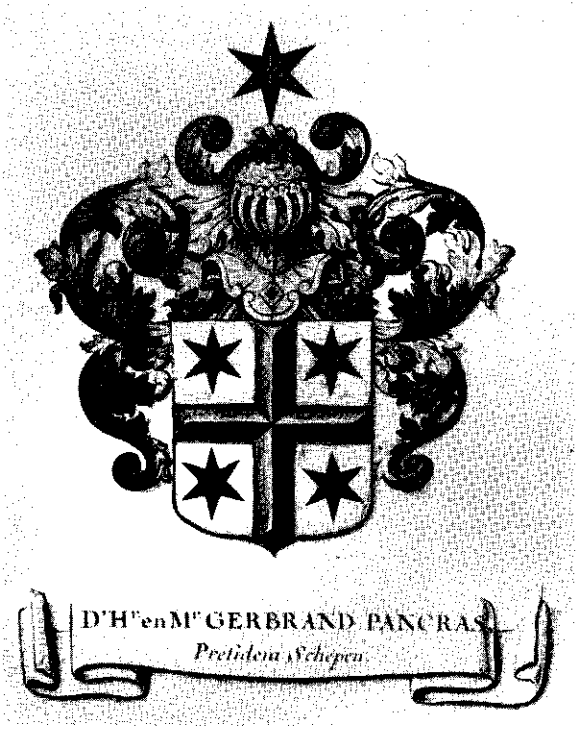
Munter, Theodorus (Dirck) 1648-1701
Burgomaster of Amsterdam 1698-1700. Owned the estate 'Westerbroeck', Velsen, and later 'Meervliet', Velsen. See Elias 1905:625.
Listed in the dedication of Hort. Amst. II (1701).

Nassy, Samuel fl. 1700
Commelin (in Merian 1705 t.4) credited 'Nassi' for an *Arum* described in the Praeludia (1703). I suppose *Caladium bicolor* is intended, as described in Pl. rariores et exoticae (1706).
'Nassi' probably stands for Samuel Nassy, a member of an important Jewish family in Surinam. Samuel Nassy was a merchant in Amsterdam in 1700 (Nassy 1788,2:126, see also Oudschans Dentz 1938).

Nunes d'Acosta, Jeronimo fl. 1690
Portuguese Ambassador ('resident van de Coninck van Portugal'), as appears from Algemeen Rijksarchief, VOC inv. no.243, Notulen van de Kamer van Amsterdam 1688-1692, vergadering van 18 december 1690. I owe this reference to Drs J.Heniger.
Acknowledged for: *Eugenia uniflora* and 'many other plants'.

Oldenland, Hendrik Bernhard ca.1663-1697
Oldenland was of Danish birth, born in Lübeck. In Leiden, he studied botany during 1684-1687, with Paul Hermann. Oldenland arrived at the Cape on 25 June 1688. He was, at the instigation of the Lords XVII from 15 August 1691, employed as master gardener in the Company's garden by Simon van der Stel. Probably Oldenland and Hartog did the work for the numerous plants from the Cape that the Van der Stels were credited for.
The phrase-names used by the Commelins for Cape plants are often identical to those assigned by Oldenland. It is rather puzzling that the Commelins did not acknowledge Oldenland where others, such as Hermann (1698), Tournefort (1700) and Petiver (1709), did so.
Van der Stel was in need of a botanist, as appears from a letter (copy) from Huydecoper to Van der Stel (December 1686), in which Huydecoper wrote that he would look for a botanist and an artist. As it seems Van der Stel had to wait some five years before his botanist was in function.
See Karsten 1951, Gunn & Codd 1981. I owe the precise data on Oldenland to Drs J.Heniger.

Oortmans, Nicolaas Baptised 30.7.1651, fl. 1697-1714
Probably this is Neijcolaes Oortmanes, son of Adam Oortmanes and Peiternelle de Lacourt. No other Nicolaas Oortmans is found in the baptismal registers in Amsterdam between 1650 and 1680. It appears from his will that Oortmans was born in Amsterdam. He was a lawyer and solicitor, who settled at the Cape where he married Johanna Rosendaal, who was born at the Cape. Oortmans was a 'free burger', not under contract with the VOC. In 1699, he obtained permission from W.A.van der Stel to hunt game near the Steenberg. Oortmans was a member of the burger-council in 1702 and 1705-1707, during the last period together with Hendrik Donker, who had married M.H.van Otteren, Hendrik Oldenland's widow. Kolbe (Dutch edition vol.2 p.367) has it that Oortmans was 'burgermeester' (burgomaster), but this is incorrect. From 1708 onward, Oortmans was a member of the council for matrimonial affairs, from which office he was relieved at his request in 1712. In 1704 he was allotted two estates, 'Ongegunt' in the Tijgerbergen and 'Oortmans Post' on the Mosselbankrivier. He acquired a third piece of land in 1711 'aan de Starrenberg'. Oortmans had



Coat of arms of Gerbrand Pancras in Atlas volume 3.

his will drawn up in 1713; no mention is made of a botanical collection (South African Archives, Resoluties van de Politieke Raad d.d. 30.12.1701, 23.12.1702, 24.12.1704, 18.12.1706, 31.12.1707, 31.12.1708, 13.12.1712, 7.8.1714; Oude Wildeschutboeken d.d. 22.11.1699; Grondbrieve d.d. 26.9.1704, 16.1.1711; Testamenten 1709-1715 no.71).
Acknowledged for: *Helichrysum crassifolium* (Commelin may have confused his records in this case) in 1697, and *Manulea cheiranthus.*

Pancras, Gerbrand 1658-1716
Burgomaster of Amsterdam 1702-1714. Director of the VOC from 1704. Commissaris Hortus Medicus from 1698; see Elias 1905:686.
Listed in the dedication of Hort. Amst. I (1697), Hort. Amst. II (1701), Praeludia (1703) and Pl. rariores et exoticae (1706), mentioned on the title-pages of the Moninckx Atlas vols.3 and 4.
His cousin Gerbrand Pancras (1658-1721) was nominated Commissaris of the Hortus Medicus in 1716. See Elias 1905:627.
Acknowledged for: *Agapanthus africanus* 1698, *Bystropogon canariense, Castalis nudicaulis* var. *graminifolia, Chrysocoma coma-aurea, Myrica quercifolia, Selago glutinosa, Senecio elegans.*

Pijl, Laurentius ? - 1705?
Governor of Ceylon 1681-1692.
See W.Wijnaendts van Resandt 1944: De Gezaghebbers der Oost-Indische Compagnie op hare Buiten-Comptoiren in Azië (Amsterdam-Liebaert), p.63.
Acknowledged for: *Euphorbia nivulia, Euphorbia tirucalli, Nerium indicum, Pancratium zeylanicum.*

Reede: Hendrik Adriaan van Reede tot Drakenstein 1636-1691
Reede held several high posts in the VOC, mainly in Malabar on the SW coast of India. The Hortus Malabaricus (1678-1693) proves his abilities as organiser and stimulator of botanical research. After some difficulties with Admiral van Goens, Reede returned to Holland in 1678. In 1684 he left again for a tour of inspection to the Cape, Ceylon and India. He died at sea in 1691 and was buried at Suratte.
See Fournier 1980.
Acknowledged for: *Euphorbia antiquorum, Ficus benghalensis,* 1686, *Hibiscus cannabinus* 1688.

Rendorp, Pieter van, Heer van Marquette 1.1.1703-8.12.1760
Commissaris Hortus Medicus from 1749, see Elias 1905:778.
Mentioned on the title-pages of the Moninckx Atlas vols.5, 6, 7 and 8.

Rhyne, Willem ten 1647-1700
Ten Rhyne was a doctor in the service of the VOC from 1673. He visited the Cape, Java and Japan and made botanical collections. There is no proof that any of these plants reached the Hortus Medicus, but the possibility cannot be excluded altogether.
See Gunn & Codd 1981, De Wit 1949.

Röver, Gerard 1643-1711
Merchant and ship-owner, insurer and banker. After the death of Pieter Hulft (1643-1694) he lived at 'Huis te Velsen', where Hulft had a collection of exotic plants. Hulft was 'Commissaris van de Nieuwe Plantage' – the Hortus Medicus was situated there – from 1682 onward. See Elias 1903:533.
Acknowledged for: *Hura crepitans* 1699.

Ruysch, Frederik 1638-1731
Ruysch is mainly known for his work in human anatomy (he described the valves in lymphatic ducts) and his anatomical cabinet, sold in 1717 for *f* 30,000 to Czar Peter. Ruysch was nominated professor of botany at the Hortus Medicus on 24.3.1685. Ruysch taught the botany of indigenous plants, exotic botany being the field of the Commelins, Hotton and Burman. The first volume of *Hortus Amstelodamensis* (1697) was edited by Frederik Ruysch and Frans Kiggelaer. See Theissen 1932.
Specimens originating from Ruysch are in herb. Sloane, see Dandy 1958:197. The main herbarium of Ruysch was sold to Czar Peter, it is preserved in Leningrad.

Scott, Jacob 1647-1708
City councillor 1690-1708, alderman 1693. Director of the WIC from 1688. Owned the estate 'Harteveld', Maarssen; see Elias 1905:623. Commelin referred to him as 'Jacob Schott, Schepen en Raad van Amsterdam'.
Acknowledged for: *Abelmoschus esculentus* 1696.

Selijns, Henricus 1636-1701
Clergyman of the Dutch Reformed Church in New Amsterdam (1660-1664), Waverveen (1664-1682) and New York (1682-1701).

See Van Booma 1979, Vugs 1970:171.
Acknowledged for: *Ceanothus americanus.*

Sherard, William 1659-1728
Sherard was a lawyer and botanist who had close connections with the botanists in Leiden, especially with Paul Hermann. He was the consul of the British Levant Company in Smyrna from 1703 to 1716. From there, he sent *Polygonum orientale* to Commelin.
See Heniger 1971.

Sluyter, Pieter 1675-after 1713
Made the engravings for Praeludia botanica (1703) and Plantae rariores et exoticae (1706). He worked also for Maria Sibylla Merian (1705).

Snippendael, Johannes. See I.1, and Gimpel 1921.

Starrenburg, Jan fl. 1700-1707
Starrenburg was a VOC official who was stationed at the Cape for some years until 1707. He is known to have sent material to Petiver in London, but he may have been involved in the plants sent to Caspar Commelin by W.A.van der Stel.
See Gunn & Codd 1981.

Stel, Simon van der 1639-1712
Simon van der Stel was nominated as Commander and later Governor of the Cape Colony in 1679. He passed his childhood in Batavia, but settled in Holland in 1660. Simon had a general preparatory training in Holland and availed himself of a thorough training in horticulture. Jan Commelin must have known him personally as the contract in which Van der Stel arranged the administration of his properties in Holland was signed as a witness by Commelin.
Once at the Cape, Van der Stel strongly advanced horticulture and botany in the Colony, by the development of the Company's garden and the appointment of Oldenland, Claudius and Hartog. Consignments of seeds, bulbs and plants were sent to the Hortus medicus annually, and to other gardens as well. Water-colours were occasionally sent to Huydecoper.
See Karsten 1951, Gunn & Codd 1981.
Simon is credited for the introduction of *Clutia pulchella, Cybistetes longifolia, Knowltonia vesicatoria, Noltea africana, Myrsine africana, Oxalis purpurea, Rhus tomentosa, Trachyandra divaricata, Zantedeschia aethiopica.*

Stel, Willem Adriaan van der 1664-1733
Willem Adriaan succeeded his father Simon as Governor of the Cape in 1699. He continued sending a rich flow of botanical material to Amsterdam and elsewhere. In the literature, Willem Adriaan is often sketched as a man who parasitised on the achievements of others, notably on Oldenland and Hartog. This judgement is probably influenced by his failure as a governor, which led to his recall in 1707. However, Willem Adriaan's interest in botany seems to have been genuine, as he forwarded several plants to Commelin from his private collection at his estate 'Duyn en Vaert', Heemstede before he left for the Cape. When he went ashore in St-Jago in 1699 on his way to the Cape, he sent *Lotus jacobaeus* to Commelin, when no Hartog was around to do the actual collecting.
See Karsten 1951, Gunn & Codd 1981.
Acknowledged for, before 1699: *Aloe glauca, Athanasia capitata, Leucodendron argenteum, Othonna frutescens;* from 1699 onward: *Aloe africana, A.brevifolia, A.brevifolia* var. *depressa, A.commixta, A.ferox, A.humilis, Crassula perfoliata, Haworthia venosa, Kleinia ficoides, Lotus jacobaeus, Pelargonium zonale.*

Tournefort, Joseph Pitton de 1656-1708
Gundelsheimer, Andreas 1668-1715
Tournefort was a botanist at the Jardin du Roi in Paris, who was in close contact with the botanists in Holland (Hermann, Commelin, Hotton). Tournefort left in March 1700 for an expedition to the 'Levant' in the company of the German doctor Andreas Gundelsheimer and the artist Claude Aubriet (1665-1742). Actually the expedition was not confined to the Levant, but went via Crete to Constantinople, along the shores of the Black Sea to Tiflis and Erzurum, and overland via Ankara and Bursa to Smyrna. In June 1702 Tournefort was back in France. Tournefort (1717) mentioned that he sent seeds to his friends in Holland.
In *Plantae rariores et exoticae* (1706), ten species from the Orient are included. In the text on page 29, Commelin credited Tournefort and Gundelsheimer for sending the seeds of these species. It is not clear when the seeds were sent, i.e. if they came directly from the Orient or later from Paris or Berlin, where Gundelsheimer had been appointed in 1703 '*Borussiae Majestatis Regiae Consiliarius & Archiater*' (Commelin 1706). The seeds may have been received between 1700 and 1705, when the last plates for the book were produced. No mention is made of any material sent by Tournefort in *Praeludia Botanica* (1703). This suggests that the seeds were received after 1702, but the *Praeludia* are devoted mostly to succulents. Gundelsheimer is credited for the seeds of *Linaria genistifolia* ssp. *confertiflora*, received in 1703. I think it is best to accept this year for the introduction of all of Tournefort's plants, although Tournefort sent material to Petiver and Sloane direct from the Orient (cf. Dandy 1958:220). Also Commelin's texts on pp.31 and 33 indicate that the plants were sown in 1703 at the latest. A species received from Tournefort and Gundelsheimer and later also from Sherard in Smyrna is *Polygonum orientale* (t.43). Another species from Turkey in the Atlas 2 t.32 is *Origanum sipyleum.* This species was already in cultivation before Tournefort's expedition.
See G.Becker et al., Tournefort (Muséum National d'Histoire Naturelle, Paris 1957).
Acknowledged for: *Teucrium orientale, Wiedemannia multifida, Lavandula canariensis* (from the Canary Islands, not the Orient), *Lallemantia canescens, Dracocephalum thymiflorum, Scutellaria orientalis, Paracaryum cristatum, Linaria genistifolia* ssp. *confertiflora, Lysimachia atropurpurea, Papaver orientale, Centaurea glastifolia, Polygonum orientale* (probably introduced in Turkey).

Trip, Louis 1653-1707
Commissaris of Amsterdam 1689. Owned the estate 'Hout- en Duynzicht', Haarlem. The Trip-family was very important in Amsterdam's economy and government, see Elias 1905:550 and Klein 1965.
Acknowledged for: *Athanasia pubescens* 1699-1700.

Valckenier, Cornelis 1640-1700
Burgomaster of Amsterdam 1696-1699. Owned the estate 'Valk- en Heining', Loenersloot, see Elias 1905:584. Listed in the dedication of Hort. Amst. I (1697).

Coat of arms of François de Vroede in Atlas volume 3.

Valckenier, Pieter Ranst 1661-1704
Alderman of Amsterdam in 1695, director of the VOC from 1693, see Elias 1903:479.
Acknowledged for: *Drimia capensis, Haworthia margaritifera* 1698.

Vicq, Franciscus de 1649-1707
Burgomaster of Amsterdam 1697-1706. Director of the WIC from 1674. Curator of the Athenaeum Illustre 1698, see Elias 1905:588. Listed in the dedication of Hort. Amst. II (1701) and Plantae rariores et exoticae (1706).

Vlieger, Jan de. See I.1.

Vos, Cornelis. See I.1.

Vries, Joan de 1633-1708
City Councillor of Amsterdam 1680-1708. Director of the VOC from 1681, see Elias 1905:590. Listed in the dedication of Plantae rariores et exoticae (1706).

Vroede, François de 1641-1706
Burgomaster of Amsterdam 1701-1704. Commissaris Hortus Medicus from 1692, see Elias 1905:606. Listed in the dedication of Hort. Amst. II (1701), Praeludia (1703) and Plantae rariores et exoticae (1706). Mentioned on the title-pages of the Moninckx Atlas vols.3 and 4.
Acknowledged for: *Euphorbia balsamifera* 1699.

Witsen, Nicolaes 1641-1717
Burgomaster of Amsterdam 1682-1705. Director of the VOC from 1693. Owned the estate 'Tijdverdrijf', Egmond aan den Hoef, see Elias 1903:544.
Listed in the dedication of Hort. Amst. I (1697), Praeludia (1703) and Plantae rariores et exoticae (1706).
Witsen was a central figure in scientific circles. He was an authority on geography, but owned also collections in other fields. One of them is the often discussed Witsen-Codex, containing a.o. a collection of botanical drawings done for him at the Cape. The set of copies of drawings from Simon van der Stel's journal on Namaqualand (1685), preserved in the South African Museum at Cape Town, is annotated as Witsen's in his own hand and probably is a part of the Witsen-Codex.
Commelin referred to the Witsen-Codex several times. In many cases, data on the habitat of Cape plants are cited from this source: e.g. *Cotyledon orbiculata* var. *spuria, Diosma hirsuta, Euphorbia clava, Felicia fruticosa, Lobostemon fruticosum, Noltea africana, Oftia africana, Phylica plumosa* var. *squarrosa, Stapelia hirsuta* and *Zygophyllum sessilifolium.* In other cases, Commelin took the inflorescence in his published plate from a drawing in the Witsen-Codex, when his own plant had not produced flowers: *Aloe plicatilis, Haworthia margaritifera, Haworthia marginata* and *Haworthia retusa.*
The data and drawings borrowed by Commelin from the Codex are not found in the Florilegium of the South African Museum. There is a set of drawings in the Africana Museum Library at Johannesburg that does contain the data, be it not verbatim, and also the drawings copied by Commelin. The inflorescence of *Aloe plicatilis* is copied fairly exactly, but the *Haworthias* are stylised. In my opinion, this set of drawings might well be part of the Witsen-Codex. It may also be a copy of that Codex or the Codex and the Johannesburg Florilegium may have been copied from the same source.
Acknowledged for: *Haemanthus coccineus* 1698.
See Kennedy 1967, Macnae & Davidson 1969, Gunn & Codd 1981.

APPENDIX C

Key to the Moninckx Atlas and the Commelin volumes

Hort. Amst. vol. 1 (1697)

Page	Fig.	Atlas	
1	1	5 t.1	Knowltonia vesicatoria (L.f.) Sims
3	2	2 t.1	Sida acuta Burm.f. ssp. carpinifolia (L.f.) Borss.
5	3	1 t.44	Verbesina alata L.
7	4		Talinum fruticosum (L.) Juss.
9	5		Portulaca pilosa L.
11	6	1 t.19	Pentapetes phoenicea L.
13	7	1 t.3	Linaria reflexa (L.) Desf.
15	8	2 t.2	Ipomoea ochracea Lindl. var. curtissii (House) Stearn
17	9	5 t.2	Jatropha gossypifolia L.
19	10	5 t.3	Cnidoscolus urens (L.) Arthur
21	11	1 t.28	Euphorbia officinarum L.
23	12	1 t.29	Euphorbia antiquorum L.
25	13	5 t.4	Euphorbia nivulia Buch.-Ham.
27	14	5 t.5	Euphorbia tirucalli L.
29	15	1 t.30	Euphorbia cotinifolia L.
31	16	1 t.31	Pedilanthus tithymaloides (L.) Poit.
33	17	1 t.27	Euphorbia pugniformis Boiss.
35	18	2 t.3	Hibiscus cannabinus L.
37	19	2 t.4	Abelmoschus esculentus (L.) Moench
39	20	2 t.41	Cistus ladanifer L.
41	21	1 t.24	Oxalis purpurea L.
43	22	1 t.26	Oxalis incarnata L.
45	23	2 t.5	Nerium indicum Mill.
47	24	1 t.42	Clitoria ternatea L.
49	25	5 t.6	Rhynchosia americana (Mill.) Metz
51	26	1 t.13	Cassia occidentalis L.
53	27	2 t.6	Cassia chamaecrista L.
55	28		Mimosa casta L.
57	29	2 t.7	Mimosa species
59	30		Mimosa pigra L.
61	31	2 t.8	Neptunia plena (L.) Benth.
63	32	1 t.38	Tribulus cistoides L.
65	33	5 t.7	Bixa orellana L.
67	34	1 t.41	Trachyandra divaricata (Jacq.) Kunth
69	35	1 t.40	Gloriosa superba L.
71	36	1 t.35	Cybistetes longifolia (L.) Milne-Rehd. & Schweick.
73	37	1 t.34	Crinum zeylanicum (L.) L.
75	38	1 t.33	Pancratium zeylanicum L.
77	39	2 t.9	Proiphys amboinensis (L.) Herb.
79	40	2 t.10	Capraria biflora L.
81	41	2 t.11	Antholyza ringens L.
83	42	1 t.23	Sparaxis bulbifera (L.) Ker-Gawl.
83	43	1 t.21	Hesperantha falcata (L.f.) Ker-Gawl.
84	44	1 t.21	Hesperantha falcata (L.f.) Ker-Gawl.
85	45	1 t.18	Gomphrena globosa L.
87	46	2 t.12	Polygala myrtifolia L.
89	47	5 t.8	Aralia spinosa L.
91	48	1 t.37	Aloe succotrina All.
93	49		Dracaena fragrans (L.) Ker-Gawl.
95	50	1 t.5	Zantedeschia aethiopica (L.) Spreng.
97	51	1 t.6	Typhonium trilobatum (L.) Schott
99	52	1 t.9	Amorphophallus paeoniifolius (Dennst.) Nichols.
101	53	1 t.8	Amorphophallus paeoniifolius (Dennst.) Nichols.
103	54	1 t.16	Momordica charantia L.
105	55	5 t.9	Mammillaria mammillaris (L.) Karst.
107	56		Opuntia curassavica (L.) Mill.
109	57	1 t.36	Ananas comosus (L.) Merr.
111	58	5 t.10	Zamia pumila L.
113	59	5 t.11	Taxodium distichum (L.) A.Rich.
115	60		Conocarpus erecta L.
117	61		Spondias pinnata (Koenig ex L.f.) Kurz (plant); Calophyllum inophyllum L. (fruits)
119	62	5 t.12	Ficus benghalensis L.
121	63	2 t.13	Psidium guajava L.
123	64	5 t.13	Myrsine africana L.
125	65	5 t.14	Diospyros glabra (L.) De Winter
127	66	2 t.14	Rivina humilis L.
129	67		Crateva tapia L.
131	68	5 t.15	Hippomane mancinella L.
133	69	5 t.16	Annona muricata L.
135	70	5 t.17	Pereskia guamacho Weber
137	71	5 t.18	Crescentia cujete L. (plant); Lagenaria siceraria (Mol.) Standl. (fruit and seeds)
139	72	2 t.15	Cordia myxa L.
141	73	5 t.19	Celtis iguanaea (Jacq.) Sarg.
143	74	5 t.20	not identified
145	75		Malpighia emarginata DC.
147	76	2 t.16	Melia azedarach L.
149	77		Bursera simaruba (L.) Sarg.
151	78	2 t.17	Lantana camara L.
153	79		Bourreria succulenta Jacq.
155	80		Trema micranthum (L.) Blume
157	81		Euonymus americana L.
159	82	2 t.18	Jasminum azoricum L.
161	83	2 t.19	Argania spinosa (L.) Skeels
163	84	[8 t.19]	Putterlickia pyracantha (L.) Szyszyl.
165	85	2 t.20	Grewia occidentalis L.
167	86	2 t.21	Ceanothus americanus L.
169	87	2 t.22	Physocarpus opulifolius (L.) Maxim.
171	88		Guajacum sanctum L.
173	89	2 t.23	Eugenia uniflora L.
175	90		Colubrina arborescens (Mill.) Sarg.
177	91	2 t.24	Clutia pulchella L.
179	92	5 t.21	Rhus tomentosa L.
181	93		Rhus lucida L.

Page	Fig.	Atlas	
183	94		Melicoccus bijugatus Jacq.
185	95	2 t.25	Cinnamomum camphora (L.) J.S.Presl
187	96	5 t.22	Diospyros whyteana (Hiern) White
189	97		Lindera benzoin (L.) Blume
191	98		Liquidambar styraciflua L.
193	99		Plumeria rubra L.
195	100	5 t.23	Rapanea melanophleos (L.) Mez
197	101	2 t.26	Maytenus acuminatus (L.f.) Loes.
199	102	5 t.24	Phyllanthus epiphyllanthus L.
201	103		not identified
203	104		Peltophorum acutifolium (Johnston) Johnston
205	105		not identified
207	106		Parkia javanica (Lam.) Merrill
209	107	5 t.25	Acacia cornigera (L.) Willd.
211	108	2 t.27	Erythrina corallodendrum L.
213	109	2 t.28	Pterocarpus indicus Willd.
215	110		Cassia fistula L.
217	111		Cassia javanica L.
219	112	2 t.29	Moringa oleifera Lam.

Hort. Amst. vol. 2 (1701)

1	1	3 t.1	Phylica ericoides L.
3	2	3 t.2	Clutia alaternoides L.
5	3	3 t.3	Aloe plicatilis (L.) Mill.
7	4	3 t.4 & 5	Dracaena fragrans (L.) Ker-Gawl.
9	5	3 t.6	Aloe saponaria (Ait.) Haw.
11	6	3 t.7	Haworthia retusa (L.) Haw.
13	7	3 t.8	Haworthia marginata (Lam.) Stearn
15	8	3 t.10	Gasteria disticha (L.) Haw.
17	9	3 t.11	Gasteria carinata (Mill.) Duval
19	10	3 t.12	Haworthia margaritifera (L.) Duval
21	11	3 t.7	Haworthia margaritifera (L.) Duval
23	12	3 t.8	Aloe glauca Mill.
25	13	3 t.12	Aloe ferox Mill.
27	14	3 t.13	Aloe arborescens Mill.
29	15	3 t.14	Kniphofia uvaria (L.) Hook.
31	16	3 t.15	Agave vera-cruz Mill.
33	17	3 t.16	Agave rigida Mill.
35	18	3 t.17	Furcraea foetida (L.) Haw.
37	19	3 t.18	Furcraea tuberosa (Mill.) Ait.f.
39	20	3 t.19	Sansevieria hyacinthoides (L.) Druce
41	21	3 t.20	Sansevieria zeylanica (L.) Willd.
43	22	3 t.21	Arctotis aspera L.
45	23	3 t.22	Arctotis aspera L.
47	24	3 t.23	Plumeria rubra L.
49	25	3 t.24	Asclepias fruticosa L.
51	26	3 t.25	Leucadendron argenteum (L.) R.Br.
53	27	3 t.26	Felicia fruticosa (L.) Nichols.
55	28	3 t.27	Polyarrhena reflexa (L.) Cass.
57	29	3 t.28	Felicia tenella (L.) Nees
59	30	3 t.29	Senecio elegans L.
61	31	3 t.30	Senecio elegans L.
63	32	3 t.31	Ursinia paleacea (L.) Moench
65	33	3 t.32	Castalis nudicaulis (L.) Norl.
67	34	3 t.33	Castalis nudicaulis (L.) Norl. var. graminifolia (L.) Norl.
69	35	3 t.34	Wahlenbergia capensis (L.) A.DC.
71	36	3 t.35	Wahlenbergia cernua (Thunb.) A.DC.
73	37	3 t.35	Microcodon hispidulum (L.f.) Sonder
75	38	3 t.36	Monopsis simplex (L.) Wimm.
77	39	3 t.37	Roella ciliata L.
79	40	3 t.38	Selago corymbosa L.
81	41	3 t.39	Cedronella canariensis (L.) Webb & Berth.
83	42	3 t.40	Manulea cheiranthus (L.) L.
85	43	3 t.41	Osteospermum spinosum L. var. runcinatum Berg.
87	44	3 t.42	Lessertia herbacea (L.) Druce
89	45	3 t.43	Chrysocoma coma-aurea L.
91	46	3 t.44	Athanasia capitata (L.) L.
93	47	3 t.45	Athanasia pubescens (L.) L.
95	48	3 t.46	Chrysocoma ciliata L.
97	49	3 t.47	Athanasia trifurcata (L.) L.
99	50	3 t.48	Athanasia crithmifolia (L.) L.
101	51	3 t.49	Convolvulus canariensis L.
103	52	3 t.50	Teline canariensis (L.) Webb & Berth.
105	53	3 t.51	Isoplexis canariensis (L.) Lindl. ex Loud.
107	54	4 t.1	Lobostemon fruticosum (L.) Buek
109	55	4 t.2	Helichrysum crassifolium (L.) D.Don
111	56	4 t.3 & 4	Helichrysum foetidum (L.) Gaertn.
113	57	4 t.5	Athanasia parviflora L.
115	58	4 t.6	Peucedanum gummiferum (L.) Wijnands
117	59	4 t.7	Elythropappus gnaphaloides (L.) Levyns
119	60	4 t.8	Selago glutinosa E.Mey.
121	61	4 t.9	Pelargonium auritum (L.) Willd.
123	62	4 t.10	Pelargonium lobatum (L.) Willd.
125	63	4 t.11	Pelargonium rapaceum (L.) L'Hérit.
127	64	4 t.12	Haemanthus coccineus L.
129	65	4 t.13	Bystropogon canariense (L.) L'Hérit.
131	66	4 t.14	Hura crepitans L.
133	67	4 t.15	Agapanthus africanus (L.) Hoffmanns.
135	68	4 t.16	Hypericum canariense L.
137	69	4 t.17	Euryops pectinatus (L.) Cass.
139	70	4 t.18	Othonna coronopifolia L.
141	71	4 t.19	Senecio linifolius L.
143	72	4 t.20	Senecio rigens L.
145	73	4 t.21	Cineraria geifolia (L.) L.
147	74	4 t.22	Othonna frutescens Berg.
149	75	4 t.23	Senecio rigidus L.
151	76	4 t.24	Abelmoschus esculentus (L.) Moench
153	77	4 t.25	Abelmoschus moschatus Moench
155	78	4 t.26	Hermannia hyssopifolia L.
157	79	4 t.27	Hermannia althaeifolia L.
159	80	4 t.30	Lathyrus odoratus L.
161	81	4 t.31	Myrica quercifolia L.
163	82	4 t.32	Melolobium aethiopicum (L.) Druce
165	83	4 t.33	Lotus jacobaeus L.
167	84	4 t.34	Indigofera cytisoides (L.) L.
169	85	4 t.35	Plumbago zeylanica L.
171	86	4 t.36	Anisodontea scabrosa (L.) Bates
173	87	4 t.37	Hymenocallis caribaea (L.) Herb.
175	88	4 t.38	Eriospermum capense (L.) Thunb.
177	89	4 t.39	Anacampseros telephiastrum DC.
179	90	4 t.40	Ballota africana (L.) Benth.
181	91	4 t.41	Salvia africana L.
183	92	4 t.42	Salvia aurea L.
185	93	4 t.43	Cephalaria rigida (L.) Roem. & Schult.
187	94	4 t.44	Drimia capensis (Burm.f.) Wijnands
189	95	4 t.45	Aeonium canariense (L.) Webb & Berth.
191	96	4 t.47	Solanum guineense L.
193	97	4 t.48	Muraltia mitior (Berg.) Levyns ex Fourc.
195	98	4 t.49	Aspalathus cordata (L.) Dahlgren
197	99	4 t.50	Sideritis canariensis L.
199	100	5 t.27	Pentzia suffruticosa (L.) Hutch. ex Merxm.
201	101	5 t.28	Hippia frutescens (L.) L.
203	102	5 t.29	Tetragonia herbacea L.
205	103	5 t.30	Tetragonia fruticosa L.
207	104	5 t.31	Euphorbia canariensis L.
209	105	5 t.32	Euphorbia balsamifera Ait.
211	106	5 t.33	Psoralea fruticans (L.) Druce
213	107	5 t.34	Psoralea oligophylla Ecklon & Zeyher

Page	Fig.	Atlas	
215	108	5 t.35	Aspalathus rugosa Thunb. ssp. linearifolia (A.DC.) Dahlgren
217	109	5 t.36	Hebenstretia dentata L.
219	110	5 t.37	Microdon cylindricum E.Mey.
221	111	5 t.38	Selago thunbergii Choisy
223	112	5 t.39	Stachytarpheta boldinghii Moldenke

Praeludia Botanica (1703)

51	1	5 t.40	Pelargonium zonale (L.) L'Hérit.
52	2	5 t.41	Pelargonium peltatum (L.) L'Hérit.
53	3	5 t.42	Pelargonium pinnatum (L.) L'Hérit.
54	4	5 t.43	Pelargonium acetosum (L.) L'Hérit.
55	5	5 t.44	Euphorbia trigona Haw.
56	6	5 t.45	Euphorbia neriifolia L.
57	7	5 t.46	Euphorbia caput-medusae L.
58	8	5 t.46	Euphorbia clava Jacq.
59	9	5 t.47	Euphorbia mammillaris L.
60	10	5 t.48	Euphorbia hypericifolia L.
61	11	5 t.49	Noltea africana (L.) Harvey & Sonder
62	12	5 t.50	Phylica buxifolia L.
63	13	6 t.1	Phylica plumosa L. var squarrosa (Vent.) Sonder
64	14	6 t.2	Yucca aloifolia L.
65, 66	15	6 t.3, 4	Agave vivipara L.
67	16	6 t.5	Yucca aloifolia L. var. draconis (L.) Engelm.
68	17	6 t.6	Aloe commixta Berger
69	18	6 t.7	Aloe africana Mill.
70	19	6 t.8	Aloe ferox Mill.
71	20	6 t.9	Aloe ferox Mill.
72	21		Aloe brevifolia Mill. var. depressa (Haw.) Baker
73	22	6 t.10	Aloe brevifolia Mill.
74	23	6 t.11	Crassula perfoliata L. var. perfoliata
75	24		Aloe glauca Mill.
76	25	(6 t.12)	Crassula capitella Thunb. ssp. thyrsiflora (Thunb.) Tölken
77	26	6 t.13	Aloe humilis (L.) Mill.
78	27	6 t.14	Haworthia arachnoidea (L.) Duval
79	28	6 t.15	Aloe variegata L.
80	29	6 t.16	Haworthia venosa (Lam.) Haw.
81	30	6 t.13	Haworthia marginata (Lam.) Stearn
82	31	6 t.14	Haworthia viscosa (L.) Haw.
83	32	6 t.15	Astroloba spiralis (L.) Uitewaal
84	33	3 t.19	Sansevieria hyacinthoides (L.) Druce

Plantae Rariores & Exoticae (1706)

1	1	6 t.17	Diosma oppositifolia L.
2	2	6 t.18	Agathosma serpyllacea (Licht. ex Roem. & Schult.) Bartl. & Wendl.
3	3	6 t.19	Diosma hirsuta L.
4	4	6 t.20	Melianthus comosus Vahl
5	5	6 t.21	Jasminum glaucum (L.f.) Ait.
6	6	6 t.22	Oftia africana (L.) Bocq.
7	7	6 t.23	Hermannia grossularifolia L.
8	8	6 t.24	Orphium frutescens (L.) E.Mey.
9	9	6 t.25	Chironia baccifera L.
10	10	6 t.26	Zygophyllum sessilifolium L.
11	11	6 t.27	Lessertia fruticosa Lindl.
12	12		Lessertia inflata Harvey
13	13	6 t.28	Psoralea species
14	14	6 t.29,30	Crinum americanum L.
15	15	6 t.31	Crinum commelynii Jacq.
16	16	6 t.32	Asclepias undulata L.
17	17	6 t.33	Asclepias crispa Berg.
18	18	6 t.34	Cynanchum africanum (L.) Hoffmanns.
19	19	6 t.35	Stapelia hirsuta L.
20	20	6 t.36	Caladium bicolor (Ait.) Vent.
21	21	6 t.37	Ipomoea coccinea L.
22	22	6 t.38	Luffa operculata (L.) Cogn.
23	23	6 t.39	Cotyledon orbiculata L. var. spuria (L.) Tölken
24	24	6 t.40	Crassula coccinea L.
25	25	6 t.41	Teucrium orientale L.
26	26	6 t.42	Wiedemannia multifida (L.) Benth.
27	27	6 t.43	Lavandula canariensis Mill.
28	28	6 t.44	Lallemantia canescens (L.) Fisch. & Mey.
29	29	6 t.45	Dracocephalum thymiflorum L.
30	30	6 t.46	Scutellaria orientalis L.
31	31	6 t.47	Paracaryum cristatum (Schreber) Boiss.
32	32	6 t.48	Linaria genistifolia (L.) Mill. ssp. confertiflora (Boiss.) Davis
33	33	6 t.49	Lysimachia atropurpurea L.
34	34		Papaver orientale L.
35	35	6 t.50	Arctotis acaulis L.
36	36	7 t.1	Arctotheca calendula (L.) Levyns
37	37	7 t.2	Helichrysum paniculatum (L.) Willd.
38	38	7 t.3	Helichrysum paniculatum (L.) Willd.
39	39	7 t.4	Centaurea glastifolia L.
40	40	7 t.5	Kleinia ficoides (L.) Haw.
41	41	7 t.6	Athanasia dentata (L.) L.
42	42	7 t.7	Senecio ilicifolius L.
43	43	7 t.8	Polygonum orientale L.
44	44	6 t.6	Aloe commixta Berger
45	45	6 t.10	Aloe brevifolia Mill.
46	46	6 t.13	Aloe humilis (L.) Mill.
47	47	6 t.15	Aloe variegata L.
48	48	6 t.13	Haworthia marginata (Lam.) Stearn

A full listing of the contents of the Atlas with a concordance to the published volumes is present in the library of the Hugo de Vries-laboratory in Amsterdam.

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Accepted names are in roman. Synonyms and names of doubtful standing in italics. New species, names, combinations, validations and additions to *Index Kewensis* are indicated by a star (*). Discussion on typification of a name is indicated by an asterisk (*); references to published typifications by a dagger (†). Phrase-names are not included. For pre-linnaean names cited see Richter (1835) conjointly with Petermann (1840).