Paragraph 16. The same as in art. 16.

County 38
On "The Medicinal Plants of the Liliaceae."

Robert D'Urb. - 31 March 1856.
The natural order of the Monocostyledons which is the subject of this dissertation when compared with some of those comprehensive orders of the Dicostyledons, composed, it may be said, almost entirely of medicinal plants, seems at first sight to sink into insignificance, yet though included in its catalogue a comparatively small number of plants, it must be remembered that from these are obtained drugs, the value of which well known to the ancient physicians is not the less recognized by those of more modern times. Much might be added in attempting to prove the importance of this order both individually as regards its medicinal products and comparatively as regards other orders, but such would be foreign to the subject, I therefore proceed at once to the consideration of

"The Medicinal plants of the Liliaceae"

The Liliaceae form one of the orders included in the subclass Petaloideae or Florideae of the second great class of the vegetable Kingdom, the Monocostyledons
o. Endogens. The botanical characters of the order may be thus enumerated. The flowers are complete, calyx and corolla, coloured and regular, occasionally adnate or a tube, stamens six in number, inserted into the sepals and petals, anthers introrse, ovary superior, three-celled, seeds numerous, and packed one upon another in one or two rows. Style one. Stigma simple or three-lobed. Fruit succulent or dry and capsular, three-celled. Leaves narrow with parallel veins, not articulated, either sessile, or with a narrow leafy petiole.

The medicinal properties of the order may be defined as bitter, stimulant, and purgative, and these are referable to principles, such as mucilage, resinous matters, acid volatile oils and acrid extractive substances.

The family of the Liliaceae includes eight tribes:
1. Tulipaceae or Tulip tribe
2. Hemerocallidaceae, the day lily tribe
3. Scilleae or Alliaceae, the Squill or Onion tribe
4. Amaryllidaceae or Asphodelaceae, the Asphodel tribe
5. Convallariaceae, the Lily of the Valley tribe
6. Asparagaceae, the Asparagus tribe
7. Aloinae, the Aloe tribe
8. Aphyllanthaceae, the Grass tribe

Two only of these eight tribes, the Aloineae and Scilleae
are composed of medicinal plants, therefore they may be regarded as dividing the medicinal plants of the Liliaceae into two classes, which must be considered separately.

I. Aloineae. This tribe is composed of the various plants included in the genus Aloë, by most of which the insipid juice known by the name of Aloes is produced; they belong to the class Liliaceae and order Monogynae of the sexual system of Linnaeus. The general botanical characters are the following.

The Perianth is tubular, six-leaf, fleshy, nectariferous at the base, the sepals of the same form as the petals and closely imbricating them. Stamens hypogynous as long as the Perianth or even longer. Capsule membranous, various, three-cored, three-celled, three-valved with a loculicidal dehiscence. Seeds numerous in two rows, roundish or angular.

To describe each individual plant of the genus Aloë, and accurately to arrange each variety of Aloes along with the plant or plants which yield it, is a work almost of impossibility, for owing to the want of proper distinction between the species, our information as to its several botanical sources is as yet very vague. I shall not therefore attempt any such classification, but shall proceed to describe
I. Some of the principal plants of the genus Aloë as far as their characters have been ascertained.

II. The different kinds of Aloes and their preparation.

III. The actions and uses of Aloes as recognised both in ancient and modern times.

I. Some of the principal plants of the genus Aloë. About twenty species are mentioned by Pernice, some as yielding Aloes, others as being rich in a better vegetable juice. Dr. Boyle says the following species deserve in number may be referred to as the sources of Aloes until more accurate information is available: Aloë Rubescens, A. Barbodensis, A. Abyssinica, A. Scoticana, A. Arabica, A. Spicata and A. Indica, adding the opinion of Dr. Christian that the A. Lineareformis of Thunberg, and the A. Connifera of Wildenow, should be included in the list. Of all the varieties mentioned by these authorities, the best known appears to be the A. Vulgaris, A. Spicata and A. Scoticana. As these three species may be regarded as types of all the rest, they may be regarded separately.

1. Aloë Vulgaris — its botanical characters according to Lardley and "The stem is woody, simple, cylindrical short — leaves fleshy, first spreading, then ascending, lanceolate, glaucous, green, flat above, convex below, armed with hard distant redish spines"
'Adamus Dioscorides de Materia Medica - Interpreta
Marcello Venelio 1529 - Lib: 3. Cap. 23.'
perpendicular to the margin, a little mottled with
darker colour: the parenchyma slightly coloured
brown, and very distinct from the tough, leathery
cuticle. Scapo axillary, reddish, branched, spike
cylindrical, ovate. Flowers at first erect, then spreading
afterwards pendulous, yellow, not larger than the
stamens". The brownish-yellow, bitter resinous juice
which by inspiration produces Aloe is contained in
parallel vessels lying beneath the epidermis of the
leaves. The Aloe Vulgaris is found in some of the
southern countries of Europe, in Spain, Italy, Sicily,
Maile and Greece, also in the East and West Indies
and in Barbary. M. Boyle includes as varieties of
Aloe Vulgaris both A. Barbadensis and A. Abyssinica
mentioned before: the Botanical character of the former
are a stem somewhat thorny. Corolla yellow. It is
found in the South of Europe, perhaps also in India,
and has been introduced into the West Indies; those
of the latter are, leaves long and lanceolate, rather
narrow, hard, of a deep green colour, rather concave
above, margin dentate, reddish. Flowers of a
greenish-yellow. It is found in Abyssinia.
Under the name of Aloe, Diodoridés describes a
plant which I imagine to be the Aloe Vulgaris;
if it he gives the following account "Aloe has
leaves resembling those of fiddles, close, thick and spreading in a somewhat circular direction. The leaves have on both sides, spines, shortened and placed at remote intervals. The flower is white, and the stamens equal in number to those of the White Saffron. Every part of the Aloe has a very powerful odour, and is most bitter to the taste. It grows from a single root formed like a stake stuck in the ground. Aloe flourishes in greatest abundance in India, from which place the juice is brought over to us, but it grows also in Arabia and Asia, in some places bordering on the sea, and in some islands as Andros.

Perring too describes a plant having the name Aloe: he says, "Aloe has no resemblance to fiddles, but is larger, and has thicker leaves. Its stem is tender, and reddish in the centre: the root is single, like a stake placed in the ground: its odour is powerful, and its taste bitter: the most celebrated kind is brought from India, but it grows also in Asia: only the seed leaves are much used, which wounds for it closes them up in a wonderful manner if the juice be applied." The plant was known also to Plutarch, but no mention is made of it by Hippocrates or the physicians. It is said by Dr. Chiswick and Dr. Penrice to yield Barbadoes Aloe.
2. *Aloë Spicata*—its characters are—A stem three
to four feet high, as thick as a man's arm. Leaves
thick, fleshy, broad at the base, gradually narrowing
to a point, channelled, full two feet long, distinctly
toothed with a few white spots; their parenchyma
almost colourless. Spike a foot long very compact,
with the flowers campanulate and horizontal. The
three petals broader, ovate, obtuse, white, with a
triple green line: the sepals narrower, less concave.
Stamens much longer than the Perianth. The
flowers are filled with a purplish honey—It is
found in the interior of the Cape of Good Hope; and
is generally considered to be one of the principal sources
of Cape Aloes.

3. *Aloë Sclerurus*—Lindley describes it thus: "Stem
woody, straight, one and a half feet high or more,
marked below, where it is strongly marked with the
sears of leaves—Leaves implexicord, ascending,
ensiform, green, curved inwards at the point,
convex below, rather concave above, marked with
numerous small white marginal serratures, the
parenchyma abounding in a bright brownish-
yellow juice. Raceme cylindrical unbranched.
Flowers scarlet at the base, pale in the middle,
green at the point. Stamens unequal, three of
them longer than the flowers." It is found in Socotra, and it is said by some also, at the Cape of Good Hope. It is supposed to be the turned of Socotrine Aloes, which is formed from the bitter resinous juice contained in parallel greenish vessels lying under the epidermis of the leaves as in A. Vulgaris. Along with this species, Persica includes the A. purpurea. The leaves, of which he remarks "this variety has dark red flowers and glaucous leaves, which become purplish red when drying. It has the same localities as the last-mentioned species. Its juice is very bitter and resinous, and becomes blood-red in the air." Having given this brief account of some of the principal plants of the genus, I come to the second head viz:

II. The different kinds of Aloes and their preparation. Aloes is obtained from the leaves of the species of Aloë just enumerated, in several ways, by excelsior, in the form of tears, by evaporating the juice which flows from transversal incisions made in the leaves, by evaporating the juice obtained from the leaves by pressure, (in this case the proper juice becomes mixed with the mucilaginous liquid of the leaves), and lastly by boiling the leaves either before or after the juice has been collected.
Aloe was described by Pliny as well as the plant which produces it, he gives an account of its preparation. "Some persons" he says make incisions into the stem for the sake of the juice, before the fruit is ripe, others into the leaves. The juice is also found spontaneously adherent as a tear: for this reason it is thought that the place should be praised where the Aloe is planted, that the tears may not be absorbed by the ground." Dioscorides and Pliny were acquainted with two kinds of Aloe: a good and a bad; the former of these authors says: "There are two kinds of juice, the one is full of sand and resembles the sediment of pure Aloe, the other is concreted like liver. Be careful to choose the thick Aloe, unmixed, and without fragments of stone or sand, bright, of a red colour, febrile, concreted like liver, capable of being easily melted, and as remarkable for its bitterness as possible. On the other hand that which is of a black colour, and does not melt easily is to be rejected. Aloe is adulterated with gum, but such adulteration is detected by the bitterness of its taste and persistence of its odour, and that where broken by the fingers it is not dissolved to the smallest scrap. Some persons also mix gum Acaciae with it as an adulteration." Pliny says: "The best kind of
Ioannes Schröder. Thetaurus Pharmacologicus
Lugdunum 1665.
Aloes is thick and shining, of a red colour, friable, and concreted like liver, melting easily. The black hard and sandy kind, which is detected by the taste is to be rejected. Aloes is adulterated with gum and gum acacia. Joannes Schröter in his Thesaurus Pharmacologicus written in 1665 describes Aloes and gives caution somewhat similar as to the choice of it, he says "Aloes is a juice of a very bitter taste which is imported from Arabia and Egypt, enveloped in thins. Four kinds are in use at the present day which differ from each other in purity. For the drugs of Aloes, that is to say the impure sandy part, defiled with dirt, and therefore black in colour is called Caballine Aloes: a part still purer having the colour of liver is called Hepatic: a part still purer is called Scoetrine, either because its powder is of a citrine colour (since citrine) or after the island Scoetra, where it grows plentifully: the very pure part if purified to such a degree as to be transparent is called Clea (lucida) because it appears clear like glass when exposed to the rays of the sun. But in order to clear Aloes come the Scoetrine and Hepatic. The Caballine ought to be administered to horses (Caballis) not to human beings. Aloes is thought to be good, which is pure
Avicenna. Saneu Medicinae. Louvain 1658.

Hofmanus de Medicamentis Officinalibus. Serres 1656.
extremely bitter and of a flavoured colour; hence the snow pure bitter and yellow the Aloe the better it is, that which is black and with difficulty fractured should be rejected as adulterated." This account of Schröder will apply in most particulars to the drug as it is met with in the present day. Arsenne, whose work the Canon Medicinalis was published a few years before that of Schröder mentions three varieties of Aloe. After defining Aloe as an expressed juice having a colour midway between red and yellow, he says "one kind is named Socrastrian, another Arabesic and a third Semegiamis. The most approved kind is that brought from the island of Socota which tinges water with a colour like brocch, exhales an odour of myrrh, is shining, pimple, and free from pumice. That named Arabesic is less weighty and shining, but is more viscid and more difficult to break. The Semegiamis" (which I imagine is the same as the Socrastrian of other writers) "is of bad quality, has an offensive odour, little yellowness and no lustre." Hofman writing about the same time, also mentions three kinds of Aloe, Socotrian, Hepatica, and Saballine. He says that in choosing the best kind care must be taken that its colour is what Dioscorides says it
should be 'unmægævθov καὶ ἀναρίφων. But above all things he adds it must be thinning and somewhat transparent: "for if this characteristic be wanting it may be good, but it is not the best; it may be Heptail but it is not Socotrine."

In the present day the name of the kinds of aloes distinguished in commerce amounts to five, they are the Socotrine, East Indian, Barbadoes, Baballins and Clear Aloes, the last however cannot now be obtained in this country, and although the name is retained by some it denotes merely a fine variety of the Socotrine Aloes. Dr. Pernice mentions three additional varieties the Mocha, Indian, and Baracoa: the Mocha is nearly East Indian or Heptail Aloes of inferior quality, and the Indian and Baracoa are used in India and Holland only. I shall not say anything of the three latter kinds or of the Clear Aloes but will endeavour to describe the Socotrine, Cape, East Indian, Barbadoes and Baballine Aloes.

1. Socotrine Aloes. It derives its name from its supposed source the island of Socotra, and is generally considered now, as in former times to be the finest variety employed in Medicine, for some years this kind of Aloes had almost disappeared.
from medical practice, and Dr. Christiano says that in 1834 every druggist he met in London, agreed that the real Socotrine Aloe had been scarcely seen for ten or twenty years, except accidentally in the form of layers in the East Indian tort. It had been ascertained that a few years before the inhabitants of Socotra were not acquainted with Aloe as a product of the island. Now however it is really manufactured there, but is exported in small quantities only. It is a common practice to designate by the name Socotrine a finer variety of the East Indian Aloe, in proof of which I may mention that out of thirteen specimens of Aloe purchased from druggists in Edinburgh as Socotrine Aloe, I found that six specimens only, answered to the characters laid down in the Edin. Pharmacopoeia, the remainder evidently consisting of East Indian Aloe. The finest kinds of Socotrine Aloe are when quite dry, at first of a golden red, but by exposure to the air they lose this, and acquire a brownish-red colour. When broken, the fracture presents in general a surface smooth and shining, but sometimes a little rough. The odour is very fragrant, being increased when the Aloe is breathed upon or when it is recent and soft, by this it may
be distinguished from some other varieties which possess a strong disagreeable persistent smell. It is capable of being easily reduced to a fine powder of a golden-yellow colour, and is nearly all soluble in spirit about the strength of sherry or of the tsp. for 0.950. The aloe prepared on the island of Socotra is generally stated to be produced from the Aloe Socotrina; it is thought probable by some that the Aloe Purpurea and other varieties are also employed, but all statements as to its botanial source are mere conjecture, no certain information having yet been obtained on the subject. As to its preparation, Lieut. Welstead says that the hills on the west side of Socotra are covered for miles with Aloe plants, and that the leaves are plucked at any period by any one who chooses to take the trouble, and after being placed in a thin, the juice is allowed to exude from them. Dr. Palmed gives the following account, "When the leaves which have been pulled from the roots, are gently compressed by the hand or an instrument, the juice drops from them into a receiving vessel, and being allowed to stand during a night deposits the greater parts. The next day it is transferred to another vessel.
'Four months in Cape Colony.'
in which it is exposed to the sun, that it may harden and become dry, when it acquires a brownish-yellow colour". The tests according to the "Edin Pharmacopoeia are "A garnet red, translucency in thin pieces, and almost complete solubility in spirit of the strength of Sherry".

Socotrine Aloes is now found in the form of a "Watery Extract" which is made by washing the thins of the fazelle in which it is brought to this country, after the removal of the clean Aloes, and evaporating the liquid thus formed: its principal application appears to be as a substitute for the real Socotrine, in preparations in which Aloes does not form a principal ingredient.

2. Cape Aloes: Cape Aloes as its name indicates is brought from the Cape of Good Hope, it is imported in large quantities in chests and thins and is of various qualities distinguished by their colour; it is much more common than the Socotrine. The species which yield it are, according to Dr. Christians, the A. Spicata, A. Africana, and varieties of these crossed with A. Ferox. The following account is given of its preparation by a gentleman who in 1845 made a voyage to the Cape, and afterwards
a tour through the inhabited parts of the country. "In the neighbourhood of Stellendam" he says, "large quantities of the medicinal aloe grow, and give employment to many persons at a certain season in collecting the extract. The plant varies in appearance; but all the varieties are comprehended between two species - A. Ferox and A. Spicata. The short, prickly varieties are usually rejected by the Aloe gatherer - the preference being given to Spicata and its allies. Within the Solstice, nor Barbadoes species, so far as I have seen, grow in the colony in a wild state. The medicine is collected in the beginning of Summer (September and October) when the rains and heat have rendered the plants turgid with sap. A place is selected where the plant is growing in great abundance; and to this the collector repairs, provided with a sharp knife and a few sheep-herds. A round hole is now dug in the ground, and a skin laid over and pressed into it, thus forming a convenient receptacle for the juice. The leaves are then cut off from the plant close to the stem, and brought to the little pit, where they are arranged in a circle, with their cut ends resting on the edge of the cavity:
another circle of leaves, similarly disposed, is placed above this, then another, till above this, but gradually contracting, till a hollow cone is formed, closed in at the top. The cut extremities of the leaves are thus all resting over the thin ivy the ground, into which the sap flows.

When one cone of leaves ceases to yield any more juice, it is replaced by another, and a third and fourth if need be, till the whole is full enough for removal. As many of these cones are being built and replaced as keeps a person employed: and the produce of the day is carried home, boiled down to the proper con.


tinence in iron pots, and ground into large square boxes, in which "goes to market." The finest qualities thus prepared are of a deep brown colour externally, with a tinge of olive green when viewed with reflected light: thin laminæ are translucent, with a yellownish brown or red colour: they possess a high lustre and dense structure, are very brittle and easily pulverised, forming a powder of a bright yellow colour: the odour is strong, and to most persons disagreeable. The inferior kinds are black in colour, tericolous, with a rough fracture, and little lustre.
3. East Indian Aloe — This is the Aloe Hepatica of the London Pharmacopoeia, so named from its usual liver-brown colour. Although it has received the name of East Indian, it is not produced in India, being imported into Bombay from Arabia and Africa, and it is for this reason that by some it is called Bombay Aloe. From Bombay it is brought to London, in teasers enclosed in casks, or in boxes lined with tin. It bears a strong resemblance toloe thurin Aloe and is in all probability derived from the same sources, the similarity of their colours, and their being so frequently found mixed in the same cask appearing to confirm the idea, as well as the fact, that when in the liquid state it is almost impossible to distinguish them. The colour of East Indian Aloe when of good quality is in general a liver-brown, it has a dull somewhat waxy fracture, and presents scarcely any translucency except about the edges; it possesses less fragrance and less bitterness thanloe thurin aloe; its taste is nauseous and intensely bitter; its powder is of a golden-yellow colour. The inferior qualities have a deep brown colour, are less lined, and do not possess so powerful an odour as the
better hands. "Some specimens of this Aloes when digested in Rectified Spirit yields a tincture at the bottom of which remains undissolved, a yellowish granular powder like Lycopodine which is insoluble in water, Alcohol, Ether and dilute Sulphuric acid, but is readily soluble in solution of Caustic Potass forming a red-coloured liquid." East Indian Aloes is at present held in much estimation, and is extensively employed, but is inferior to the fine Socotrine Aloes—

4. Barbadoes Aloes. The name is derived from its source the island of Barbadoes; by continues tallow writers it is very generally denominated Hepatic Aloes though it does not in general possess a livid brown colour. It is derived principally from the A. Vulgaris, but most probably also from the A. Socotrina and A. Purpurascens which are said to be cultivated in the West Indies. In Barbadoes the time usually fixed upon for obtaining the Aloes is the month of March. The following account of its preparation is given in Hughes's Natural History of Barbadoes written about the middle of last century. "Every slave bath by hind, three or four portable tubs. The leaves being cut near..."
the roots, are thrown into these with their broken ends downwards; and as the leaves are full of longitudinal veins or vessels, they yield an easy passage to the juice (which is of a greenish yellow colour) to drip out. This being boiled for about five hours in a copper or kettle, the watery particles evaporate, and the remainder comes to a consistency and thickening as sugar dought when sufficiently boiled. The way to know when it is enough boiled, is to dip a stick in the liquor, and observe whether the Aloe sticking to it, when cold breaks short: if it doth then it is boiled to perfection, and fit to be ground into gourds, or calabashes or other vessels, for use.

Barbadoes Aloe is prepared in very seldom met with at the present day, that which is generally used being the extract of a direction: the method of preparing this extract is described by Mr. William Wright in a letter to Sir Joseph Banks on the medicinal plants of Jamaica, he says "The Aloe is obtained in the following manner: the plant is pulled up by the roots, and carefully cleaned from the earth or other impurities: it is then sliced, and cut in pieces into small hand-bas.

"Netts or netts. Three netts or basnets are put into
large iron boilers with water, and boiled for
ten minutes, when they are taken out, and
flush pancakes supplied till the liquor is strong
and black. At this period the liquor is thrown
through a strainer into a deep oat marrow at
bottom, to cool and deposit its succulent parts.
Next day the clear liquor is drawn off by a
cock, and again committed to the large iron
vessel. At first it is boiled briskly, but towards
the end the evaporation is slow, and requires
constantly stirring to prevent burning. When
it becomes of the consistence of honey, it is poured
into gourds or calabashes for sale. This hardens
by age. From Barbadoes and Jamaica it
is brought to this country in the gourds which
weigh often as much as sixty pounds.
Barbadoes also is principally used in veterinary
practice, and is therefore much in request;
it varies in colour from a dark brown or black
to a reddish brown or liver colour, a different
bung often observed in the same gourd. Its
luster is dull and almost earthy, it is less bitter,
and has a much more disagreeable odour than
the preceding kinds: it is tougher and more gummy
and therefore difficult to pulverize: its powder has
Chapter. Éléments de chimie Vol. III p 84
a less lively colour, being a dull olive yellow.

5. Caballine Aloes — This is now as formerly the least esteemed of all the varieties of Aloes, it was at one time used in veterinary practice, but is now superseded by Barbados Aloes. Professor Guichard says it is procured either in the countries which furnish ordinary Aloes, in Spain or in Senegal. Chadval says that Caballine Aloes was common with Soceotina and Hepatica Aloes were produced at Morvedere in Valencia from the A. Vulgaris; of the mode of their preparation he says "la première variété s'obtient par des incisions que nous pratiquons aux feuilles, on lui donne le temps de déposer toutes ses impuretés; on l'écante de dessous le maroc de la ligueur qu'on laisse épousseter au soleil, et on la met dans des sacs de cuir pour l'expédier sous le nom d'aloès succotain; par l'expression de ces mêmes feuilles on en extrait un suc, qui clarifié de la même manière forme l'aloès hépatique, et par un pression plus forte, on retire l'aloès Caballin". Caballine Aloes is never met with, but is said to possess a very dark almost black colour, a strong fetid odour, a bituminous appearance, and a considerable
intermediate of straw, bark, sand, charcoal, and other impurities (Christison) from this character it appears as if it had formed the lowest stratum in the vessels in which the better qualities are allowed to cool.

Having thus described the various kinds of Aloes and the modes of its preparation, I come to the third head under which I proposed considering the Alvinea reg.

III. The actions and uses of Aloes as recognised both in Modern and Ancient times.

Taken in small doses Aloes acts as a bitter tonic, assisting the process of digestion and promoting the secretions: in larger doses it has a purgative action, but takes longer time in producing its effects than most purgative medicines, requiring twelve or even twenty-four hours before it acts...

It acts principally upon the Large intestine, and is therefore often administered in preference to other cathartics where fecal accumulations in the lower part of that portion of the bowels are known to be present: it is considered also by some specially to affect the liver and is on that account frequently given on Jaundice. On account of its influence exerted upon the Rectum its use is contra-indicated...
Vide. Opera Omnia. 1600 p. 104.
where haemorrhoids exist, a fact long ago pointed out by Galen, who noticed that the use of Aloes as an habitual purgative produced in ninety out of a hundred persons a haemorrhoidal flux which ceased when the use of the Aloes was discontinued. The purgative effect of Aloes may be produced by other methods than administering it internally, thus applied to a blistered surface it causes purging, and Mme. Prinies says that Tincture of Aloes applied to a cankered sore produces the same effect. In consequence of the irritation caused in the Rectum by the use of this drug, many attempts have been made to lessen its acuteness; the best way to effect this is not to form Extracts or Decotions, but to combine it with other remedies such as Aromatics, Sulphate of Iron, or Hyoscyamus; the Sulphate of Iron has the power of increasing its laxative action though not in itself a cathartic, and the Hyoscyamus mitigates the severity of its action, that Aloes combined with it may generally be given with safety, even though haemorrhoids exist. Aloes acts symptomatically upon the uterine, causing diminution of blood and fullness of the veins; if uterine irritations or menses haemorrhages exist they will be increased by its use, while on the
other hand if amenorrhoea is present the Aloes may act as an emmenagogue. Ambrox Pari recommended the use of Aloes along with Myrrh, savins and other ingredients, in the form of Pestary in amenorrhoea, he styles it "Pessaire provoquant les mois". Aloes is recommended by some as a Stomachic in Dyspepsia, when unattended with local irritation; it is also very useful in the form of decoction as an Antispasmodic, it is perhaps the most extensively employed of vegetable remedies of its class, and it would be an almost endless work to recount the variety of cases in which it may be used with advantage. The older writers on materia medica were acquainted with the uses of Aloes as recognized at the present time, as well as with some effects said to be produced by it, very different from what modern experience teaches of its actions. Dioscorides says "the medicinal virtue and nature of Aloes is to act as an astringent: to induce sleep, to cause looseness of the bowels, and to cleanse the stomach: two spoonfuls taken with cold water or why restrains splitting of blood; a quantity amounting to three obols (half a drachm) is good for persons affected
with Iaundice. The same quantity taken along with gum or in prepared honey causes looseness but three dracones purge very severely: dried and beaten into powder it closes up wounds: it also incites ulcers towards cicatrization; rubbed upon the forehead it is good for pains in the head, mixed with honey or wine it is good for the tonsils and gums and for any injuries of the mouth. Pliny agrees with Dioscorides in his account, but remarks in addition that a purgative action is more readily produced if the dose is taken at the same time as the food, he recommends aloe as a cure "for all affections of the eyes" as an ointment mixed with honey to be applied to bruised parts, and as a hemostatic. Celsius held the virtues of aloe in great esteem, he used it to heal wounds, as powder it was sprinkled upon ulcers, made into an ointment with cinnamon, cassia, lycium, spikenard, myrrh, honey and wine it was rubbed upon the back when suppurating internally, and as an ingredient in a tolyænum composed of twenty-three different substances it was applied in certain affections of the eye. The same opinions as to the action of aloe
Boerhaave. Tractatus de Viribus Medicamentorum.

were prevalent in the 19th century. Avicenna says "Aloes acts as an astringent and excisant, renders the body firm and induces sleep; used along with honey it removes ulcers; it heals the ulcers of paronychia; it is good for tumours of the breast and genitals; it contracts ulcers of the anus, nose and mouth; also festulat." Speaking of its purgative action he says that it above all laxatives is agreeable (amicus) to the stomach, and adds that it is an act full of danger to exhibit Aloes upon days on which the air is very cold. Schröder places Aloes in the chapter de purgantibus secundariis along with Botaniam, Ephedrae, and Sambommy, he says it induces the menstrual flux and after it kills and produces the expulsion of lumbrii. Joannes Zwolfer in the Pharma-

-espeis Augustanus says "Aloé corpus et basis est pilulareus purgantis" and briefly sums up the properties of Aloës, Aloes and Sambommy pile "Herpe, roborant, astringens album in parva

-estias quantitatis sumptae solvent, ad humorum

-pulvadum ascens." Bonhawt says that Aloës and the gum-resins as Ammoniac and Galiumtum produce Satignani; if taken in
The London Dispensatory. by Nicholas Culpeper. Student in Phyric and Astronomy - 1653.
too large quantity. A writer on Materia Medica
in our own country, Neilas Bullepepper, includes
Aloes under the head of tears, liquors and rogens,
and says "Aloes purgeth Choles and phlegm
and with such deliberations, that it is often
given to withstand the violence of other purges:
it preserves the senses and betters the appe-
sension, it strengthens the liver, and helps
the yellow Jaundice. Yet it is sought for
such as are troubled with the Haemorrhoids
or have agues. I do not like it taken raw".
In addition to all these varied and curious effects
supposed to have been produced by the use of
Aloes, it appears to have been regarded as an
Aloesipharmacie for I find that Ambros Paré in
a chapter headed "Pour se donner garde d'être
empoisonné," after describing the treatment to
be employed in a case of poisoning says "Et
où le malade ne pourroit vomir, il lui faut
faire prendre des purgations propres qui résistent
aux venins: comme est l'agavie, l'aloes, la
petite centaurie, la rhubarbe, et autres choses
ordonnées par le docte Medecin". A substance
bearing the name of Aloes appears to have been
used along with Myrrha and spices in the embalming
of bodies, practised in the East, and the Jews were in the habit of placing it between the folds of the cloth in which they wrapped the dead. Aloe has been repeatedly analyzed, it seems to be composed of a saponaceous principle, Vegetable albumin, resin and a trace of Gallie Acid. The saponaceous principle has received the name of Aloesin, it may be obtained as a brown bitter mass by evaporating the infusion or decoction or, as pointed out by Dr. Christian, in the form of their yellow scales by adding Acetate of Lead to a watery infusion, precipitating with Ammonia, decomposing the precipitate with Sulphuric Acid in water, and evaporating the fluid in vacuo. The cold solutions of Aloesin resemble Citrius, stinks a deep olive brown tint (Aloesate of Iron) with Sesquichloride of Iron, and forms with Bi-Aacetate of lead a copious yellow precipitate. When Aloes is heated with nitric acid it yields a yellow bitter substance which by the further action of the acid is converted into two crystallizable acids: Chrysammic Acid \((\text{C}_15\text{N}\text{H}_2\text{O}_{12}\text{H}_2\text{O})\) and Phrygosphoniac Acid \((\text{C}_2\text{H}_2\text{N}_3\text{O}_{13})\). All the kinds of Aloes have an extremely disagreeable taste which is with difficulty got rid of; the odour is strong and peculiar.
being more susceptible when the Aloe is breathed upon: it softens and becomes adhesive when held in the hand: a greater degree of heat fan and char it, finally causing ignition.

Having under the heads proposed considered the Aloinae, I now proceed to the second tribe of the Liliaceae which contains medicinal plants.

II. The Sillaceae or Alliaceae.

The principal plant of this tribe is the Sillae Maritima or as it is now more frequently called the Virginica Sillae, the bulb of which, when dried constitutes the officinal squelle: its botanical characters are: Bulb roundish ovate, very large, half above ground: integuments greenish or reddish. Leaves all radical, appearing after the flowers, spreading, large rather fleshy, broad lanceolate, channelled, recurved. Scape from two to four feet high, rising from the centre of the leaves, simple, cylindrical, terminated by a long divaricate raceme of flowers with long bracts. Flowers of a pale yellowish-green colour. Sepals 3. coloured, spreading. Petals very like them, and scarcely broader. Stamin 6. shorter than the Pericarp: filaments smooth, somewhat dilated at the base, acuminate, entire: anthers yellow.
Every three-parted with three succulent and glands at the apex. Style, smooth, simple. Stigma obtusely three-lobed, papillate. Capsule rounded, three-corned, three-celled. Seeds numerous in two rows, flattened, winged with a membranous testa (Lindley). Sclœer says of this plant "Guscit capricus in Apulia, Sicilia, Portu-gallia." Two kinds of Squills are described by Pliny, one which he calls the Male having white leaves, the other which he calls the Female having black leaves. The official part of the plant is the bulb which externally consists of dry membranous and sometimes coloured scales: internally the scales are thicker, colourless, and full of a thick acrid juice. The average weight of a Squill bulb is from half a pound to four pounds though they occasionally exceed this. The cuticles covering the scales is said to contain a number of acicular crystals and many spiral vessels are found in the scales themselves; these crystals form about 10 percent of the Pulvis Sicilic. The bulbs are brought from the shores of the Mediterranean, and from Marseille, sometimes in the entire state packed in sand, in which case they will often produce stems.
and flowers if not interfered with, but often when they are imported in the form of dried Squills which is prepared by stripping off the dry outer scales, cutting the bulbs into transverse strips, and drying them with a moderate heat, about 100° Fahrenheit. Thus prepared the pieces have a white or yellowish while colour, they are translucent, often twisted, brittle when dry, but capable of being bent when in a damp state, they are without odour, but possess a bitter mucilaginous taste. Dioscorides gives the following account of the preparation of dried Squills as performed in his time. "The Squill is covered over with a hard crust or with clay, and thus covered is placed in air and oven, or surrounded with live coals, until it and the crust set around it are sufficiently baked. But if the crust be removed before the heat has penetrated to the interior, the Squill becomes softer, and then shrivels up: it should in this case be again surrounded with burning and a second time burnt. It may also be baked in an earthen vessel furnished with a lid, and placed in an oven. It may also be baked, after being cut in pieces and water
Orfila, Toxiconologie Générale, Tom II, p. 100.
having been pounded over it again and again, till its bitter bitterness or sharpness can be per-
ceived in the water. But into trees it is also dried in the shade, then the pieces
being strung on a cord so that they cannot touch each other, they are hung up for a time.
A somewhat similar account is given by Schröder.

he says: "Molotoria massa, pranis atque cun
dodem in clibus cogitatur, sine eximius atque
espicatus."

In large doses it is not an irritant poison but in addition to this acts
powerfully upon the nervous system: after being
swallowed, its active principle becomes absorbed,
affects the nervous system, and thereby quickens
the inspiration, causes convulsions and death.

Orfila records four experiments made on the
lower animals with this drug: in one of

them he administered two ounces and a half

of the fresh bulb to a small dog and then tied

the esophagus: after a lapse of twenty minutes

the dog made violent efforts to vomit, and

continued attempting to do so for half an hour.

In an hour and a half from the time the dose

was given, the animal died: the lungs were

red and expirant, but the alimentary canal
had undergone no sensible change. From his experiments he concluded that the deadly effects of squill are owing chiefly to its absorption, and the effect which it produces on the nervous system; that the lungs not presenting any organic lesion, the acceleration of respiration depends on nervous influence: and that nausea and vomiting are invariable accompaniments. In man an overdose produces vomiting, purging, gripes, strangury and bloody urine: in the Journal de Pharmacie Médicale for 1842 a case is mentioned of a woman who died from taking a spoonful of the powder in order to cure typhoid fever, she was immediately seized with violent pain in the stomach, and suddenly expired in convulsions.

In the Journal de Physique, Vogel states that four and twenty grains of the powder have proved fatal. In medicinal doses squill is an expectorant, and diuretic; if the quantity be slightly increased vomiting and purging are produced, and if its administration be continued for any time the digestive powers will be much impaired.

It is universally considered to be one of the best of vegetable diuretics, and its effect as such is increased by the addition of galton, or the
Acetate or Bi-Tartrate of Potash: as an expectorant it is much used in chronic pulmonary affections, but is rarely employed either as an emetic or cathartic. Such are its actions, and the uses to which it is put in medical practice at the present day, but as employed by the ancients it is in no respect behind aloe in regard to the number and peculiarity of the virtues ascribed to it. Dioscorides says "the innermost parts of raw Igville if boiled with oil may be used for chaps in the feet. The bites of vipers should be washed with a decoction of it in vinegar. One part of Igville and eight parts of salt are mixed and one or two spoonfuls are given fasting to cause purging. Igville is also added to draughts which cause looseness, and is given to patients in whom it is wished to promote the flow of urine. It is good for persons troubled with jaundice, for coughs of long standing, and for shortness of breath. Three stools weight boiled with honey and taken along with the food materially assists digestion. Chillblains and warts are with advantage covered with burnt Igville: and the white of the Igville plant hung over the door of a house acts as a charm against witchcraft." Hofman re-recommended it in the form of lozenge and oxymel.
in thick and cold humours of the chest. Avicenna
turns up the virtues of Squill in the following sen-
tine "Duros tumores discutit, prolem confert
alimentum: genitalis semen auget: ad venenam
intimulat, album mollet, coquellet acaroides."
Joubert highly disapproves of the practice of using
excruciatingly employing Squill as an internal
remedy and says "Sullas minima tute usibus
in t抠 destinari gruonam mordacis, aequa,
inflammatoriae, stranquillantes, deleteriae, dinges,
virulentae iid quibus intra corpus obviunt
tum cardialgis, perpneumoniam, viscerum
latales inflammatoriae rescinet, et vel depre
manibus contrae epidemidae sustinet, ut
proinde multi exhibtunt nisi crdybars supa
multumque taneent ac accent, et semina
curenenta." — Squill has been analysed by
several chemists, the first who analysed the
bulb was Vogel in 1812, he says that it contains
an acid principle called Seilition along with
Tannin, Gum, woody fibre, a small quantity of
Bilirute of Lime, and an acid volatile matter.
One of the official preparations of Squill the Acctum
Sullas has been in use since the days of Driberides.
Tarcellus recommended it as a Stomachic, as a gargle.
in Polypus of the nose, and for preservation of the sight and hearing, adding "If anyone will take daily even half a cupful he will have a beautiful colour, will breathe with greater freedom and digest with greater ease: for if he has eaten much and has not digested it, and the food has become sour in his stomach let him take some of this medicine, and it will forthwith cease to remain undigested. If therefore he take this, he will digest with ease all kinds of food and drink, and nothing will injure him." He advises its use also as a diuretic in dropsy. Sulphur ascribes to virtues were more extraordinary: "A little of this medicine being taken in the morning fasting and walking half an hour after, preserves the body in health to extreme old age. (as Seneca tried, who using no other medicine than this, lived in perfect health till an hundred and seventeen years of age) it maketh the digestion good, a long wind, a clear voice, an acute sight a good colour; it suffers no offensive thing to remain in the body, neither wind, phlegm, choler, nor melancholy but bringeth them forth, it bringeth forth filth though it lie in the bones, and though a man be given to leucorrhoea..."
in diet, he shall feel no harm. It hath cured such as have the Phthisick, that have been given over by all physicians: it cures such as have the falling sickness, goute and diseases and swellings of the Joints: it takes away the hardness of the Liver and Spleen. We should never have done, if we should reckon up the particular benefits of this medicine. Therefore we commend it as a wholesome medicine for soundness of body, preservation of health, and vigour of mind.

Another very old preparation is the Oinos Exaltanti-kos of Dioscorides, reproduced in the present day by the Vinicura Scillaed. Juniper says "the virtues of the wine are the same with the Vinegar of Poits only 'tis hotter."

The next plants included in the tribe Scillaed, are the three varieties of Allium: A. Sativum, A. cepa and A. Porrum, and the Asparagus officinalis.

1. Allium Sativum. Its botanical characters are Bulbs clustered several enveloped in the same silvery skin. Stem about two feet high, leafy below the middle. Leaves glaucous, channelled above, acute. Spathe tingled, horned. Flowers if any, pink, red or white, rather longer than the Staminis. It flowers in July, its native country is undiscovered. The Bulbs...
formed of cloves, its odour is irritating, and its
taste acid; its active principle is a yellow-coloured
acid, heavy oil which is a Sulphur of Allylic C₄H₉S.
Garlic is an irritant, causing redness and disqua-
nition of the cuticle when applied to the cuticle skin
in the fresh state. When swallowed, the volatile
oil contained in it is absorbed: the circulation
is quickened, and a disagreeable, persistent odour
is communicated to the breath. By some it is
used as a Diuretic in Dyspepsia, and it is said to
be a diaphoretic: its most useful application is
as an Anthelmintic in Ascarides in which it has
often proved serviceable. To it as to the other plants
of the order remarkable properties were formerly as-
tigned, it was employed as an aperient, digestiv-
elaxiflormic, carminative, anthelmintic, expect-
oricant, diuretic and emmenagogue, while it was
considered to be a sovereign remedy for the bites
of snakes, mad dogs and spiders. In Spain
and some of the southern countries of Europe
Garlic is much used as a condiment, being
considered to be useful as a stimulant in counte-
acting the effects of a long continued vegetable diet.
The ancients employed it as a condiment as well
as as an article of food. Aristophanes in one
of his comedies mentions it as a condiment used along with wine, and as the food generally given to game-cocks when being trained for fighting. It was known to Thespaeus and Dioscorides under the name of Σκότοδος.

2. Allium cepa. The botanical characters are: Bulb simple, roundish, invested with a thin, dry membrane. Stem from one to three feet high, leafy. Leaves glaucous, distichous, fistular. Umbels large, regular, many-flowered. Flowers white or greenish. It flowers in July. Its native country is Egypt. The bulb is truncated, and when cut it evolves a juice which has a pungent action on the eye, producing a flow of tears. Onion has been used in the same cases as garlic; but its action is less powerful: by boiling, it is deprived of all irritating qualities and becomes esculent. A roasted onion is a favourite domestic remedy used as a substitute for a poultice in gummorh, applied to the eye or sarcoche. The onion was thrown and used in the most ancient times, the first mention of it among Greek writers is by Herodotus, who says that upon the outside of the Pyramid built by Cheops were inscribed in Egyptian characters the sums of money spent
in providing Radishes, Onions and Garlic for the laborers who erected it: and in another place he mentions two nations the Gallipidea and Haliitones inhabiting the confines of Scythia, whose food consisted entirely of Onions, Garle, Lentils and Millet. The Onion is described by Hesychastes and Dioscorides under the name of Κριόμον, and by Pliny under the name of Cepa.

3. Allium Porium — The Botanical Characters are Bulb obovate and Simple. Stem, from two to four feet high, round, leafy below the middle. Leaves, one or two feet long, tapering and acute at the apex. Spathe, single, horned. Perianth, purplish or greenish white. Sternum, a little longer than the Perianth. Cultivated in the East and introduced into Europe. The leaf has been considered Diuretic and Expectorant, but is now never used in medicine; it is used as an article of food, but is indigestible and apt to cause flatulence. Culpeper says "Leeks are hot and dry in the fourth degree, they breed but ill-favoured nourishment at the best, they spoil the eyes, heat the body, cause troublesome sleep, and are noisome to the stomach, yet they are good for something else than only to sit in Welchmen's hats, for the juice of them..."
dropped into the ears, takes away the noise of them, mixed with a little vinegar and swells up the nose; it staves the bleeding of it; they are better of the two boiled than raw, but both ways exceeding hurtful for ulcers in the Bladder, and to all onions and garlic."

4. Asparagus officinalis — The young shoots act as diuretics, and communicate to the urine a peculiar odour not unlike that of Geranium Robertianum. They cause in some persons bloody urine, and accelerat fits of the gout. The root forms one of the five greater astringent roots, used formerly in vesical diseases. Asparagus is occasionally used as a diuretic and as a lithic. Marcellus recommended it to be used along with the Allium in Calculus.

The Dracaena Draca is the root of the Skilled, it has the appearance of a palm, and is a native of the Canary Islands. When an incision is made into the stem of this tree, a red juice exudes, which by coagulation forms a resin resembling the Sanguis Draconis or Draconic blood obtained from the Galamus Dracae. It is a tonic astringent, and has been used in diarrhoea and passive hemorrhages.

Lastly, the Xanthorees or Grass tree of Australia yield a yellow and red resin, the former produced by the X. Resinosa or Lecanesides Reinigeri, the latter by the X. Arbores. Mr. Rites in 1797 published an
essay on the medicinal effects of the resin of Acaroides
Resinifera; he thus describes the plant: "It is low and
small with long grassy leaves; but the fructification
of it shoots out in a singular manner from the centre
of the leaves on a single straight stem, to the height
of 12 or 14 feet. The resin is generally dug up out of
the soil under the tree not collected from it." He details
the case of homoeopathic treatment in which the resin
proved beneficial, and recommends its use in diarrhea
incipient, dysentery, flux, album, and amenorrhoea,
adding that it neither vomits, purges nor acts as
an astringent, but that it possesses in a marked
degree the property of allaying nervous irritability and
restoring tone to the system. By Dr. Ish and others it
has been found useful in the colliquative diarrhea of
Phthisis.

Robert D. Burn 31 March 1856