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*About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Au 22

(17) II r

~~end in separate cover~~  
Guy de la Brosse note  
book & paper <sup>in</sup> beginning

by Hunt I

Observationum ~~Microscopiarum~~  
MICROCOSPICARUM Centurie  
(copied - Work repeats after  
spelly after

Petro Borelli.  
Hagae-Comitis, Ex Officina Adriani  
Vlacqj. 1656

p 9  
Observatio V  
"Foliorum foramina." Describes the clear  
spots on hypericum etc + points out that  
these foramina do not penetrate the leaf membrane,  
but are enclosed by a translucent membrane.

Obs. VI  
Stellae in Feltis  
(Stellate hairs)

p 10  
De Filis Semine  
(descriptive account - something)

p 15  
Rudimenta Plantae in semine  
Seed, bean or almond - ~~fructus~~ merita the  
plumule

Obs. XXIX p 20

De villis Plantis  
If you look at Nettles in Borage, you will see  
many ~~small~~ <sup>stinging</sup> spines in them, --- so that suddenly  
you will think that you are not looking at leaves  
but at a porcupine.

De Syllis Salomonis

In leaves of Solomon's Seal, a kind of nerves  
on vessels, with an instrument, 74 are distinctly  
observable.

p 43

"The mountain-skin, <sup>on</sup> <sup>to</sup> hands, <sup>is</sup> <sup>not</sup> <sup>at</sup> <sup>all</sup> <sup>visible</sup> <sup>under</sup> <sup>the</sup> <sup>microscope</sup>,  
women, is shaggy. ~~hardly~~ <sup>broadly</sup> <sup>horrible</sup> <sup>under</sup> <sup>the</sup> <sup>microscope</sup>.

The most striking feature is to be mentioned  
nothing else, <sup>is</sup> <sup>not</sup> <sup>at</sup> <sup>all</sup> <sup>visible</sup> <sup>to</sup> <sup>the</sup> <sup>naked</sup> <sup>eye</sup>. A.A.  
The Solomon's Seal seems to be the best botanical  
piece of information - no drugs, plants

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p. 30

Points out that the microscope may show  
useful in # lines, in many <sup>cases</sup> <sup>of</sup> <sup>the</sup> <sup>microscope</sup>  
detent signs to an <sup>extent</sup> <sup>invisible</sup>

Prefatio admonitio pp 6-7. Dated trans. by Deek

There are those who assert that atoms of the air & solar atoms have  
been seen, & then various figures as Democritus taught of old, which  
they assert can be traced down by two convex sections of a glass  
sphere the oblique & the hyperbolic, or by other concave sections. But it has  
not been granted to me to see these things yet. ... Meanwhile will  
be sufficient for me to have opened the door; I may mention that  
certain animals have been presented by nature with eyes of such a form  
that they perceive objects on as large a scale as if they were using our  
microscope in instruments which shows that we do not ~~possess~~ possess  
the true eye; anything not can we assert, not its true taste or colour.  
etc, since all these things are differently perceived by different  
animals according to the variety of their organs."

(P.S. R. saw in some  
"reclivity")

Jessen, K, F. W. Botanik der  
Flechten und Vorgeh. Leipzig 1864  
Joachim Jung (1587-1657)

His axiom "Per inductionem et experimentum  
omnia. - Non dicitur auctoritas  
destituta rationibus valeat."

"Authority not based on reason has no value"  
"all things by induction, experiment"  
For Jung mathematics was the prototype of all  
science. Since his time mathematical sciences  
has step by step extended its range over all the  
branches of science.

2007  
"Sage of phytozoology" published 1678 of the  
his death centers the bases of the botanical  
terminology that is still used.

Top part - shows the importance of the  
junction of root & shoot - (lines common to  
several fundus plantae). ~~Stems, leaves~~

Trunk of tree - grass haulms etc were  
brought together under the one word caulis  
"all parts, such in their inner nature are  
the same, must, however differ in their form,  
bear one & the same name." This is his prop  
+ application of this principle to his work - place as  
with the fundus gives his work a place as  
one of the fundamental works of botany.

p220

He rejects (calls in question) the validity of the categories - Trees, shrubs, undershrubs, herbs. The purpose is to put up <sup>two trees & under</sup> species, shrub & tree, many stemmed perennial plants, tree, one-stemmed perennial plants

He attributes great value to the leaves in classification. He recognizes the importance of flower and characters. p221

His view on individual characters was very advanced for the time. He rejects the use of colour, smell, taste, of medicinal plants, habit, time of year of appearance, number of flowers, fruits, etc.

His view in distinguishing species. (This distinction between essential & accidental characters does not seem to have been analysed before ~~A.A.~~) It is to be seen that he seems to have had an essentially analytical mind (A.A.)

p221

He regards ~~petals~~ <sup>petals</sup> as identical with foliage (these like Bacon, Galileo, Jungus, Descartes do not seem to be aware of this)

leaves  
The great men <sup>of the 17th</sup> century were reformers - they did not begin in enormous discoveries for unknown things, but they placed existing knowledge in new points of view & opened up new roads [a rather shallow one turned into a new road] (A.A.)

p 232  
Peter Boelli used a microscope with 2 lenses, one convex one concave. He saw single star-like hairs

p 233  
Hooker's results - not much better than Boelli's & similar to them.  
Seeuwenhoek's results: 1673-1723 & further is not worth a - Leyden 1715-22

p 234  
Metaphor's function is rather intended to clear up details - educate the text than be complete, & afford a general view. His work consists mainly of a philosophical comparison of results & partly the part - relate to the whole.

p 235  
Seeuwenhoek was an optician as well as an observer & improved the microscope. He used his balanced spectacles to illuminate his letters & saw several an scatters in his

legit XIV  
p. 251

De plantarum sensu, sympathia et antipathia  
mutua, et alias ad res

"De sensu plantarum, nemini dubitandum esse,  
cum vesantur, nutrantur, crescunt,  
semina et natos producant, non secus  
ac animalia

Relig. 254 sex 7 abns  
Praeterea cotant plantae - Scandinaviae, quae fructus  
vertuntur in animalia volatilia:

Lupini Lycomis infecti sunt  
Olivae amarae myrtis

De Senen Rerum et Majie  
F. Thomae Campanellae  
Exempli Emmelinum, Impensis  
Jodofredi Lampertii  
1620



Phil Trans Vol XI. 1676

July 18. 1676.

p 65-3

All the  
with your  
I about your

A letter of Leewardsbook for Delft dated Op  
21. 1676 "Concerning the Texture of Trees"

... (found his share in the "Comparative  
Pl. ...") L. ... he had in

Dear Mrs. ...  
Very many thanks for  
the reprint of 20 pages on  
Green & Malpighi's ...  
I am very glad to have  
you may be interested to  
hear - if you do not know it  
already - that Vol. II of ...  
book's "Collected Works" came  
out - sometime last year. (I  
just - have the exact date.)  
You may remember that I told  
you (in a previous letter) that  
the letter which you quote in  
your paper is printed in full  
in this volume. No copies  
have reached this country or  
U.S.A. so far as I can find  
out. - My information is from

Telegram:  
"NATIONAL HAYES, LONDON."  
Telephone:  
HAYES 232.



NATIONAL INSTITUTE  
FOR MEDICAL RESEARCH,  
HAYES, MIDDLESEX,  
LONDON, N.W. 3.

MEDICAL RESEARCH COUNCIL

1676  
20  
there

U\*  
5.82(E)  
A278

21. II. 42

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if a were versed in a sign ...  
Leewardsbook ... has come ... in a ... may 1682 figure

Micrographia: a some Physiological Descriptions  
of minute Bodies made by Magnifying Glasses.

Hoake  
1635-1703

Robert Hooke.  
London 1665

of the Schemata or a Texture of  
Cells, & of the Cells & Pores, some  
other such pretty Bodies.  
... to honeycomb  
... some structure  
... various figures

[1674.11.17]

p 112

a member of the Dutch Com-  
mittee who are editing these  
publications, and came in a  
roundabout way via U.S.A.

With best wishes  
+ all good wishes -

Sincerely

Clifford Dobell



Daniel Major *Dissolutio vobanica*  
de planta fottorpensis (Schleswig 1665)

Leeuwenhoek. M.B. 6.51  
M.A. 18.22.

Jugues. 2 sagoge  
Dexcepia

late tryfels  
Eden us partant  
H.D. 50.10  
55 20.45

Behr, Henry. Employment of the microscope  
Hr. 15.44 p 4 34. Ed 17  
173 18 19.

84. by term  
a mag is 160 higher  
= 206 h ex. but possible  
there was not all. He  
made a  
were had former.  
drawn in copy  
new design from  
draw 100.  
H. 173 18 19

(All Leeuwenhoek's microscopes  
a simple ~~lens~~ double convex lens)

Leeuwenhoek uses the expression  
sand or near scowering sand or glass powder  
sand. (p v)

These notes from M.A. 18.22. A too late to  
must modified translation of Leeuwenhoek  
be very useful.

Malpighi Hr. 2.23

Ueber das Geschlecht der Pflanzen.  
(De sexu plantarum epistola)  
1684 [II. 27. 105]

R. T. Camerarius  
Uebersetzt von M. Möbius. Leipzig 1899  
Ortvalds' Klassiker der exakten Wissenschaften  
Nr. 105.

Camerarius b. 1665 d. 1721. He was  
great-grandson of Joachim Camerarius  
(1500-1574) born in Tübingen whom he took his degree.  
Zeuvelle in Jemmy, Holland, England, France  
Italy on 1680 became Professor of medicine  
& dentistry in Bologna, at Tübingen

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His book on C. Sep / plant 1694 i.e. when he was 29  
\* From the Biographie Universelle I doubt this. R. Camerarius was son of Elias Rudolph C. (son) Jean Rudolph C.  
II of Jean Rudolph was the son of Joachim Camerarius but you this is all right, but I cannot  
see clear evidence that this Joachim the younger had 3 sons, the eldest of whom  
was Ludovic (Louis) Joachim, the date would fit  
all right, he de Petit Thouars (de Zeuvelle)  
24. 1527

(Book itself)

? 2  
Luteo-jungies

? 3  
Describes pollen to dense like pollen of pines, on tree  
with this substance which makes the mass yellow  
then re smells. lily

? 4  
Houses can be found in the buds, trees in buds  
state under the cork  
I was here about this A.A.

p 6 notes the separation of sexes in pairs plants eg. Zea

p 12 Dioecious plants.

p 13 <sup>don't</sup> <sup>Hemp</sup> <sup>two plants</sup> <sup>the other</sup>  
Suckers roots the same <sup>than</sup> why  
for the same seed one should be fruitful the other  
unfruitful is a secret nature. Kiantabul  
Harff cop. CV

p 15  
In general people seem to have <sup>trough</sup> <sup>than</sup>  
~~the~~ plants with sterile flowers come from  
imperfect plants or through neglect - culture.  
The <sup>Comerarios</sup> <sup>is</sup> <sup>that</sup> <sup>by</sup> <sup>hand</sup> <sup>planting</sup>  
to wild plants in the garden you can find in <sup>than</sup>  
this not so.  
Suckers <sup>than</sup> <sup>posterior</sup> <sup>on</sup> <sup>Palms</sup> <sup>Viburnum</sup>

p 16  
Describes the size of sterile flowers  
Spikes, & points <sup>than</sup> <sup>the</sup> <sup>cultivated</sup> <sup>fruitless</sup>  
rose consists of three sterile flowers close.

p 18  
A kind of dull flowers

p 24  
Describes experiment on two monoecious  
plants - 2 Ricinus he removed the buds <sup>the</sup>  
before the unfolding, the <sup>same</sup> <sup>as</sup> <sup>the</sup> <sup>other</sup>  
one got seeds - And in <sup>the</sup> <sup>sea</sup>  
~~head~~ - (he means the <sup>fruit</sup>)  
two cobs which developed: he got no seed in the  
p 24-25 in the dioecious <sup>mulberry</sup> <sup>tree</sup> <sup>the</sup> <sup>fruit</sup> <sup>was</sup> <sup>solitary</sup>  
one berries which seemed



P47  
(sums up the difficulties against his view - beginning § 2.)

Plants that have ~~pollen~~ stamens - no female organ. Zygopodium, Equisetum  
He says very reasonable about it: he says that he thinks both genera belong to the class of these plants which are incomplete known whose organ - equivalent is ditidark (p. p48)

p48  
The case of the female plants being fruit - written to help of the male. "This is another thing which does not fit in with my view." "to come, see when he spoke of earlier, 2 cts had no seed, but a third cts had 11 fertile seeds, & thus they breed through the law? He is hurry by this, as he knows he removed the stamens in green car, & he thinks other male plants which were in the neighborhood cannot be responsible as he plants the experiment stake plants not far from the others [I expect he did not know how far the stamens could be carried by the wind A. A.]

De iena plantarium is a letter addressed to Neuberg & Beinhaw Valentini, J. J. J. J.

p48-49  
He says 3 young plants of Hop (Cannabis) which he had transplanted from field of garden, though there was no male anywhere near they produced a number of seeds. He wonders if they could be pollinated by some other species, as hybrids occur in the



animal world - He tried year this time  
 sowing the seeds + putting the first year away in a  
 different place. He happened to get 3 ♂ + 3 ♀  
 plants. He in due time the 3 ♂ before the +  
 names were developed, & aware of the ~~results of~~  
~~an exact~~ fate of the seeds and early.  
 He got a few very abortive seeds, but two fertile  
 seeds, especially those which set next  
 the stem were the few - in development -  
 He confesses himself completely puzzled, but intended  
 to go on hammering at it.

Do you like from a seed  
 This is 2 seeds:-

What calls that name? The doubtless then to see  
 The curly hop to all <sup>who doubt</sup> ~~think~~ well known  
 The sprout of used in cookery  
 and to ~~the~~ Hemps, ~~after~~ <sup>after</sup> getting by a Peasant,  
 The 2-~~ex-~~ <sup>ex-</sup> odorous herb called by a name  
 of mercury  
 They lead to for one mother and  
 several children can spray.

The peano boy, ~~that they really~~ ~~best~~

Sark  
 1846  
 I was not until 1846  
 ready to follow in the  
 course of the <sup>to the</sup> ~~to the~~  
 cell. & ever  
 of Carrens found results  
 were doubtless <sup>disputed</sup>  
 in the <sup>among</sup> ~~the~~ <sup>very</sup>  
 my accept- <sup>second</sup> ~~second~~  
 plans with  
 well 19. <sup>at</sup>



"But I think it is a very real problem laid down in my  
 It seems as if I forgot more boldly upon it than is upon  
 who don't - write more boldly upon it than is upon  
 to the mind, to be sure, I want a dwell upon that sort of it, & why about another  
 allus self of them of the concordant these things which contribute  
 to [an opinion] which has become dear to it, I have a few, then  
 irreconcilable with it. Therefore I prepare of to send you  
 my task, ~~to~~ to see forth the doubts which have arisen during  
 the deliberation on these things. It is not to be too precise,  
 he decides to turn the discussion of two points I have come with in  
 his an experiment, & so on the more difficult to explain away.

First, then an plants which possess antennae in the  
 seeds. e.g. hypogynia & byesate in which he finds Stamens' ~~the~~  
 aty. He compares the course of byesate in the class, plants which  
 then he says (p 48) that the help of the class, plants which  
 origin & reproduction is still rather obscure.  
 Secondly he asks to be spent than female plants, but  
 finds where the help, the of the male plants.  
 which does not agree with my views."

when in  
 microscope  
 in a chamber  
 (pencil)

Marcelli Malpighii ... Anatomie Plantarum  
Part altera. London 1679

Excellen fgs of sems. - general morphology -  
fats, but practically no anatomy.

[Miebus, M. (1801) Marcellus Malpighi.  
 Die Anatomie der Pflanze. I. und II Teil.  
 London 1675 and 1679. Bearbeiter von M. Miebus  
 Leipzig 1901. Oswald's Klunker der exakten  
 Wissenschaften Nr. 120  
 Beys in 1675 paper

p 4 Malpighi was led to study plant anatomy by his  
 friend <sup>from</sup> ~~was~~ <sup>an</sup> (<sup>human</sup>) anatomy, then turned to  
 higher animals - then turned to the insects - the  
 hope of greater simplicity; was even to see  
 present difficulties, he went on to plants, intending  
 finally to trace his steps + return to his earlier  
 studies.

p 5 Beys in the <sup>trunks</sup> <sup>trees</sup> <sup>transmits</sup> Zelle  
 speaks of "Utricula" where Malpighi  
 (see note p. 158)

p 8. ~~seen~~ <sup>observed</sup> latex tubes  
 seen under the cambium

p 11 Describes axillary buds their upright upright continuity  
 with the wood + <sup>the</sup> <sup>parenchyma</sup> <sup>of</sup> the wood + <sup>the</sup> <sup>wool</sup> <sup>in</sup> <sup>buds</sup>  
 or gummy substance which covers them.

p 16-17 Pores are the leaf-nature of the flesh (cotyledons)  
 Apple pips - almonds, the <sup>of</sup> <sup>the</sup> <sup>tracheae</sup> <sup>forming</sup> <sup>as</sup>  
~~have~~ <sup>current</sup> cells have tracheae <sup>in</sup> <sup>the</sup>  
 the stem. It ever conglomerates <sup>in</sup> <sup>the</sup> <sup>marrow</sup>  
 within + chestnut - has <sup>seen</sup> <sup>in</sup> <sup>the</sup> <sup>marrow</sup>  
 in - is good, but seen <sup>in</sup> <sup>the</sup> <sup>marrow</sup>  
~~the~~

the sculler, wheat is represent leaf  
p 18-19. to find del down-falls

221  
The three wots spray from the shand of the  
change wots

p 21  
Peter in some wots

p 25  
Pomun tea the movement, the sep is capsule of  
very mesed in direction, since a shoot of Plum  
a blackberry been with each put on wots with  
then end of gas into a plant

p 24  
Myers was some process connects air naturally goes  
the leaf under the influence of the sun's rays.

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p 26  
late I. Figure 1 showing stem shows epidermis

p 29  
He sees Nowe had some idea / central to kidney

p 32  
Describe figure thylacae fully used, type / cause  
without understanding in relation

p 33 (bottom)  
noticed 'among' labyrinthine bends & twists of the  
vessels in the new front powder & close a  
toward wound when the brand is cut off.

p 34  
He had copied ~~Narrower to the center of a very~~

p 37  
Describe the front) annual rays

P. 75  
 Ryms describes the instruments of Vice Faba  
 p 80  
 Dentes, long number of falls

p 154  
 Merfatti born Mar 10. 1628 near Bologna  
 studied medicine.  
 became Professor at Bologna, was down at Pisa  
 called Pisa - he spent 3 years at Pisa  
 the measure, then Bologna again  
 finally moved Rome when he died. 1674

Sylva Sylvarum: or A Natural History  
in Ten Centuries.

Published after the  
Authors Death, by William Rawley  
Written by the Right Honourable Francis  
Lord Bacon, Viscount St. Albans.

The Tenth Edition, In which is added an Epitome  
of another piece of his Lordships Works  
entitled Novum Organum ... never before  
published in English.

London

Printed by S. J. & B. Gifford of Thomas Lee,  
on the Sign of the Turke-head in Fleet-  
street, Between Mitre Court & Ram-Alley,  
over against Fetter-Lane. 1676

Published after Bacons Death, by Rawleys perusal  
was written while he was alive.

(See page 7) "To the Reader":—

and the difference between the Natural History, &  
others, For these Natural Histories such are called,  
being fettered for deliquit-use, are full of  
pleasant Descriptions, Pictures; and affect-seek  
after Admiration, Rarities & Secrets. You-  
conceive, the scope and his Lordships  
intendeth, to instruct such a Natural History, as  
may be fundamental to the erecting building of  
a true Philosophy: for the illumination of  
the Underland; the & hearting of Axioms,





rejoice in the presence of the Sun, & mourn at the  
absence thereof. For is not the <sup>leaves</sup> <sup>loading</sup> <sup>washing</sup> <sup>bottom</sup> of the leaves, & swelling them on the  
the Air; whereas by  
Sun deth extends them."

p 111

"It is not impossible, I have heard overfled,  
that you cutting down your old Juniper-tree, the  
stubs hath just just sometimes a tree of  
another kind, as Beech hath just just  
Birch."

p 115

We find no Super-Plant, travis & formed  
Plant in Mussetto. My love an idle tradition,  
to as there is a Bird called a Musset-Bird as  
feeder upon a Seed, sun may turne the  
cannot digest, so expellet it with an  
the excrement; sun fall upon a Bay  
of Tree, to as some up, parted forth  
Mussetto. But the as the tree the cones  
the is is found of the tree  
seth ! AA

p 121

F-lowers have (all) exquisite figures, the Flower  
numbers are (chiefly) five or four; as in Prime Rose,  
Rose Rose, single Musk Rose, single Pinks,  
+ Gilpi flowers, etc. which have four leaves;  
But some four leaves not

(!!!)  
AA

p 27  
"Gentlemen may do themselves more good  
by kneeling upon a Cushion, & Weeding"  
(This is entreated for Mr. Bramley's 7. edo: 1651)

p 7  
"Grows, as they hang, with many, & can shoot  
forth; and so will Peonigrozell; & so will an Herb  
called Oxipin; ... We see it likewise, more especially,  
in the great Semper-vive, which will put out Branches,  
two or three years. ... We see also, that Stumps, & Trees,  
lying on the ground, will put forth sprouts for a Time.  
Now it is a Noble Truth, & of very great Consequence,  
to try whether these things, in the Spring, do increase  
Weight; which must be tried by weighing them before  
they be hang'd up; And afterwards again, when they  
are sprouted. For if they increase but in Weight; Then  
it is no more but this; Now when they send forth  
in the Spring, they lose in some other Part; But  
if they put forth Weight, then is Magnole Nature; &  
For it sheweth that Air may be so condensed, so  
to be converted into a Dense Body; ... It  
sheweth also that Air can Natural."

p 65  
Definitely sheweth that Consumption of the Lungs is  
infectious

p 66  
"For we desire that Men should learn Specimens,  
how severe a Thing the true Inquisition of  
Nature is; And should accustom themselves,  
by the help of Particulars, to enlarge their Minds,  
to the contemplation of the World; & not reduce the  
World to the Narrowness of their Minds."



Francis Bacon by Walter Steves. 1874

His mother Lady Anne Bacon  
in Greek & Latin. The translation  
"Apology for the Church of England"  
prints & circulated by the Society for  
Christian Knowledge.

p23  
Rawley, his chapters -  
he had seen 12 autograph copies  
again correct & improved.

P.54 Planned a huge work  
work on all his life to be called  
"The Institutes of a Christian King"

(p57) to write a history of  
his own times  
would teach men  
as you in the world  
all the phenomena  
as potent as philosophy

(3) a new method  
of application  
of to Universe -  
conceived by Bacon  
works in his  
time before his  
purpose very much  
in the advancement  
of science

beyond Christ's left hand. Payroll  
at Farmington Literary Prize.  
"N"  
12/6  
"Spelling-book." - Boston Globe.  
most enjoyable of the best-seller crop.  
"The Wind"  
12/6  
"The best  
with action that carries you along as swiftly."  
"New York Times."  
"It is  
by a Canadian."  
"The best  
of COMMONWEALTH."  
"The best  
of A MILESTONE IN THE GROWTH  
of Canada's Annual Literary Award."  
"WILLIE WARRIE"  
Painted.

WILLARD B. POPE

BACON'S TUTORS

Sir,—The following quotation from the  
*Biographia Britannica* (Vol. I, p. 412),  
cited in Ballard's account of Lady Bacon  
in his *Memoirs of Several Ladies of Great  
Britain*, throws some light on the mystery  
of Bacon's early education, discussed in  
Mr. R. L. Eagle's letter. It has been  
observed by an ingenious writer, says  
Ballard, that "it was to the great abilities  
and tender care of so accomplished a  
parent that her two sons owed the  
early part of their education, and without  
of these great men (Anthony Bacon and  
Francis) we may safely affirm that they  
were not a little indebted for the reputa-  
tion they acquired to the pains taken  
with them by this excellent woman in  
their tender years, when the mind is most  
susceptible of learning, and thereby  
rendered more capable of retaining the  
principles of science, than when they are  
instilled in an age farther advanced."

Bacon's mother had a sound knowledge  
of Greek, Latin and Italian, and she gave  
an early specimen of her industry and  
learning in her translation from the  
Italian into English of the sermons of  
Bernardine Ochine in 1580. She was  
therefore exceptionally qualified to give  
instruction to her two sons, provided,  
of course, she had the time and the  
leisure to do so.

Also, arising out of Mr. R. L. Eagle's  
letter, it may be mentioned here that Sir  
Anthony Cooke had five daughters, and  
this fact is referred to in the works of  
Camden, Fuller, Lloyd, Bohun and  
Styrie, but they are unable to ascertain  
the name of the fifth daughter. But in a  
manuscript in Corpus Christi College  
Ballard says there is clear evidence that  
the fifth daughter was married to Sir Ralph  
Rowlett. Among a certain Dr. Haddon's  
poems printed in London, 1567, appears  
the following tetra-stich:—

In nuptias Rodolphi Rowlett & Thome  
Hobeli, qui dux D. Antoni Cocci filius,  
duxere uxores eodem die. (On the nuptials  
of Ralph Rowlett and Thomas Hoby, who  
on the same day espoused the two  
daughters of Sir Anthony Cooke.)

Margaritam Rowlette tuam fac menter  
recondas,

Gemma sit ut tuto tam pretiosa loco.  
Sit frater fratri similis, sit filia patri.  
Sic vir erit dignus conjuge, sponsa viro.

In conclusion, the inscription on a monu-  
ment to Sir Anthony Cooke in the  
church at Romford, Essex, mentions  
two sons—namely, Richard, who married  
Anne, daughter of John Caulton; and  
William, who married Frances, daughter  
of John Lord Gray, brother to the Duke  
of Suffolk.

S. G. THOMAS.

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Room again 1620

"The by remark" "It was like to prove /  
ford, - posed all understand";

p 197

Rawley in the life as "appears" to Resuscitatio  
"I myself have seen a least twelve copies of the  
Instauratio, several year by year one after another,  
etc. as far as I can see a true model in that it was  
committed to the press; as many long letters  
to help their judgment, tell they long been  
(then they thought)";

p 181

"Resuscitatio" a false edition / Bacon's works  
publ. by William Rawley 1657  
narrative of his life used of all subsequent  
biographers

p 198

"In the composition of his works he did rather give  
at a moderate clear expression than at any  
finess or affectation of phrases, would you  
ask of the meaning were expressed plain  
as very one that accounted would do the work  
subsequent - a ministerial a matter, not words;  
principal. ... He was no prodder, upon  
he read more, than an I moderate relaxation  
for he would even intubate moderate relaxation  
for his mind into his studies, as walking, ... a sum  
other befitting recreation; yet he would not  
in time, manner as upon his first &

immediate return he would fall & ready gain ...  
... he contemned no man's brevities, but would  
begin his torch on every man's candle."

125  
He was a Trinity College Cambridge  
age 13 to 16, & in those years he manifested  
an aversion to the (early) Aristotle

Bacon's words in accepting a gift  
of land from Essex:-

"My Lord, I see I must be your  
homage, & hold land of your gift, but  
do you know the manner I do  
homage in law? Always & with a  
savoury to his feet of the King & his  
other lords, & therefore my Lord, I  
can be no more yours than I was, nor  
must be with the ancient savoury; & if  
I find the savoury man, you will see we  
leave to you in bank some of your  
unrewarded followers."

Francis Bacon: A Biography  
Mary Stuart  
London 1932



The Essays or Counsells Arill and Small  
of Francis Bacon Low Verulam. Everyman's Library.

p 38

"For there be those in their nature do not affect the good of others.  
... Such dispositions are the very errors of human nature;  
yet they are the fittest tumblers to make great politics  
of; like a three-tumber, that is good for ships that are  
indured to be tossed, but not for buldgy houses that shall  
stand firm."

Bacon definitely maintains that the worst men make  
the best politicians, holds that virtue has no place  
in public life.  
He readily admits to "unscrupulous in his ambition"

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p 48

"The remedy is worse than the disease"  
"He that hath a wife & children hath given hostages to fortune"

p 22

"He that hath a wife & children hath given hostages to fortune"

p 77 - Of Defectives

there is no surer gain, time as to create of the state of the  
question.

p 78

"Some men [seemingly wise] in all deliberations find cause to be of  
the negative side; ... of their propositions are denied, there is  
an end of them; but if they be allowed, it requires the new  
work."



Francis Bacon. "Of the Advancement of Learning."

Everyman series ed. by J.W. Kitchin

p. 19, 24, 26, 30, 32, 34

"If learning conduct men's mind into a true sense of the frailty of their powers, the casualty of their fortunes, & the dignity of their soul vocation: ... whereas the corruption sort of men & Meliques, that have not their thoughts color'd by learning in the love - apprehension of duty, nor never look abroad into universality, do refer all things to themselves, & thrust them selves into the centre of the world, as if all lines should meet in them & their fortunes"

p. 24

"men began to hum - more of the word than matter; more of the choiceness of the phrase, the sound & clear composition, the sentence, & the sweet falling of the clauses, & the variety of the metaphor of their words with the figures of speech, than of the weight & matter, worth of subject, soundness of argument, life of invention or depth of judgment."

p. 25

"If really, the severe injurition of truth & the deep purgation of philosophy, [eloquence] is some hindrance, because the desire early sets forth the mind, & speecheth the desire of further search, before we come to the period."

\* Do not use the word, but it passes in general sense

p. 26

"This kind of degenerate learning did chiefly seize any the schoolmen; so being sharp & strong wit, & abundance of lessons, small variety ready, but then to be shew up the cells, immortals & colleges, & knowing little but of nature & books, did not, no great quantity matter infinite of late, in opinion and untill laborious webs of learning have been extant in their books. For the wit, & mind of man, if it were upon matter, such is the contemplation of the creature of God, what accord the stuff, is limited thereby; but if it were upon itself, on the spider web"

his web, to an end, & thus fasteneth colours of  
heavy, admirable for the fitness of the end sought, but of  
no substance or profit.

1330  
[Speaky of alchemy]

"Is assuredly the search after to make gold hath brought  
upon a great number of good & fruitful inventions & experiments,  
as well for the discovery, nature as of the use of men's life."

1332  
"The certainty & incertainty of men's judgements, shall till  
a matter be done, wonder that it can be done; & as soon as  
is done, wonder that it was not sooner done. ... as  
may be seen in man, the propositions of Euclid; which till they  
be demonstrated, they seem strange to an assent; but  
being demonstrated, are in mind accepted, & taken by the hand of  
reason (as the languages speak), as if we had known  
them before."

1337  
"Another error, of diverse nature for all the former,  
is the over early & peremptory rejection of knowledge, without  
arts & methods; for their time commonly sciences receive  
small or no augmentation."

134  
"Another error is an impetuosity of doubt, haste to ascertain  
without due & mature suspension of judgement. For the two  
ways of contemplation are in like the two ways of action  
commonly spoken of by the ancients; the one plain smooth  
in the beginning, & in the end impossible; the other rough &  
turbulent in the entrance, but often while far & even. So is  
in contemplation; if men will begin with certainties, he shall  
end in doubts; but if he will to begin in doubts, he shall  
end in certainties."

p 34  
 "Other eras there are in the scope to a man proposed to themselves, <sup>they bend their endeavours;</sup> for whereas the more constant - devote kind of professed say science agree to proposed themselves - make some additions to their science, they cross - their labours to aspire to attain second prizes; as to be a professed interpreter or commentator, ... to be methodical anguisher a childger; & so the patrimony, <sup>buried</sup> ameter to be sometimes improved, but seldom argumental."

p 55  
 "So certainly, if a man meditate much upon the universal frame of nature, the earth with man upon it (the darkness of souls or eyes) will not seem much more than an ant-hill, whereas some ants carry corn, & some carry their young, & some go empty, & all to-and-fro - a little heaps, & saw."

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so that, if the invention the ship was thought so noble, this carrieth riches & commodities for pleasure, peace and conversation the more remote regions in participation / their fruits, how much more are letters (be magnified, short, as ships, pass to large vast seas of love, & make eyes so distant to partizate of the wisdom, illuminations & inventions, the use of the other?"

p. 70  
 "For I find no sufficient or complete collection of the works of nature which have a depression or deflection for the ordinary course of generation, production, & motions; although they be singularities of place or region, or the strange effects of time & chance, or the effects of the ~~unknown~~ unknown properties, or the influences & exception to general kind. ... a substantial & severe collection of the heteroclitics or irregulars of nature, well examined & described, I find not."

" For the handling of final causes mixed with the rest in  
 physical inquiries, hath interested the severe & diligent enquiry  
 of all well & physical causes, & from men the occasion to  
 stay upon these sorts of enquiry & specious causes, to the  
 fear-are - prejudice of further discovery. For this I  
 find done not only by Plato, but ever anchored upon  
 than that, but by Aristotle, Jelen, & others .... For (I say  
 to a ~~that~~ ... the bones are for the columns or beams, whereupon  
 the frames of the bodies of living creatures are built; ... or  
 the clouds are for velvety, the earth; ... & the like,  
 & well inquired, collect in metaphysics, but in physics  
 they are impertinent. ... and have brought this to pass,  
 that the search of the physical causes hath been neglected,  
 & passed by. In therefore the natural philosophy &  
 Democritus, & the Stoics, & the Epicureans, as far as

can judge by the recit & progress of our former books, by  
 in particular of physical causes, more real & better  
 inquire than that of Aristotle & Plato; ... Not because  
 these final causes are not true, & worthy to be inquired  
 being kept within their own province; but because their  
 excursions into the limits of physical causes hath bred vastness  
 & disorder in that tract. For to remove, keeping their province  
 & borders, men are extremely deceived of their truth, & an  
 empty & unprofitable or all between them. For the cause  
 reader, that the hairs about the eyelids are for the safeguard  
 of the sight, do not impugn the cause rendered, but pilosity  
 is incident to viruses, moisture; ... both causes being  
 true & compatible, the one declaring an intention, the  
 other a consequence only."

p 99

"For in being the nature of the mind of man, is the extreme prejudice, humbled, to deluge in the spacious light of generalities, as in a champagne region, & not in the enclosures of particularity; ..."

p 104

the ordinary face & view, experience is many times solaced by several theories & philosophies; whereas to find the real truth requires another manner of severity & attention."

p 130

"the nature of man doth ex home cover & has somewhat in his understanding fixed & immovable, & as rest & support of the mind. ... 20 assuredly men have a desire to have an Atlas or axle-tree with them to keep them from fluctuation, which is like a perpetual peril of falling."

p 132

"For the mind of man is far from the nature of clear & equal glass, wherein the beams of things should reflex- accord; & then true evidence; nay, it is rather like an enchanted glass, full of superstition & imposture, & to be not delivered & reduced."

pp 132-3

particular views as the same story clear the sailors do know Organum

p 140

"in learning, where there is much controversy, there is many times little enquiry."

12169

"For a descens to be considered, there are an infinite kind  
 are proportioned to great matters, & these small, ... some can  
 divide themselves; these can perhaps do exactly well, but  
 - may be in few things at once; ... And you, some minds are  
 an proportioned to them which may be dispatched at once, or within  
 show return, time; these to them which begins of a N,  
 + is to be work with length, passion: ... A man  
 shall find in the traditions of astrology some pretty & apt divisions  
 of mens notions, according to the predominance, the planets;  
loves of fire, loves of action, loves of victory, loves of  
honour, loves of pleasure, loves of art, loves of change,  
 in fact."

p 208

"And being now or some pause, looking back into that I have  
 passed by with this unity seemed to me ... (as far as man can  
 judge of his own work) not much better than that noise or sound  
 that musicles make while they are tuning their instruments;  
 which is nothing pleasant to hear by ear & came only to  
 men's meeting of reward."

[From p. 188 words Bacon tells. just dead, but  
 men shall raise, make their fortunes, the cause be  
 recommend & very distasteful - I'm a true descrite,  
 full of dissimulation. It makes me realize: little hat  
 he could have gone so wrong in his life - A.A.]

p 211

Bacon's conclusion: -  
 "Thus have I made as were a small globe of the intellectual  
 world, as truly & faithfully as  
 description of those parts which seem to me not constantly  
 occupied, or not well covered by the labour of man."



321 CESALPINO, ANDREA. *QUESTIONUM PERIPATETICARUM LIB. V.—Daemonum Investigatio Peripatetica. Sec. ed. Quaestionum Medicarum Libri II. De Medicament. Facultatibus Lib. II. Nunc primum editi.* Venice, Apud Juntas, 1593. 4to. 20, 291, 1 blank ll. Contemporary calf.

See Osler, *Bibl. Prima* 901. Cush. Libr. C155.

"That Cesalpino anticipated Harvey in the description of the circulation of the blood was first advanced by Giovanni Nardii in 1655 (see no. 116), at a time, therefore, when Harvey's doctrine was beginning to be accepted . . ." (H. P. Bayon, *William Harvey*, *Ann. Sc. Vol. 4*, 1939, pp. 339 ff.). Dr. Bayon gives an excellent survey of the controversy which was summed up by Garrison: "Cesalpinus had indeed grasped as pure theory the truth about the systematic and pulmonary circulations . . . but his ideas were not supported by any convincing experiments . . ."

From Osler's notes it is obvious that this second edition is more important than the first edition of 1571 for additional material in the *Quaest. Medicae*, published here for the first time. This edition and not the 1571 edition is represented in the Cushing Library. This fine copy, in a contemporary binding, was formerly in the collection of Dr. Francis Bernard which was sold in Oct., 1698, "containing a wonderful array of medical books" (*De Ricci*, *Engl. Collectors of Books*, p. 32). On the fly-leaf there is a remark of that period that "this book is esteem'd for . . . several hints of the circulation of the blood . . ."

University of L. 4

De Plantis Libri XVI Andreae  
 Caesalpini Aretini . . . Florentinae,  
 Apud Georgium Marescottum, 1633

Andreae Caesalpini  
 the few books owned by  
 them - being - several  
 in descriptive

30 several pages  
 the many 156

De Plantis libri XVI.

Andreae Caesalpinus. Florentiae

Apud Georgium Marescottonum. MDLXXXIII

[V.L. L. 4. 4]  
cat. von

Since the nature of plants is decided by <sup>two</sup> single kind  
 of soul by which they are maintained, grow etc, they  
 produce things like to themselves; but they lack the  
 power of feely, moving in which the nature of animals  
 consists: with perfect justice plants need much less  
 apparatus of instruments than animals. For many are  
 the parts of multiple in form or number: further  
 instruments these are shared & responsible for  
 motion: for the side of the substance of bones  
 is almost indifferently divided into joints, & flesh is  
 muscles; divided by nerves running different ways  
 into all parts; besides we contemplate the  
 which are the instruments of the nutritive soul  
 we see <sup>in truth</sup> ~~in truth~~ moderate similitude with the  
 parts of plants, but in the greater part, the greater  
 dissimilitude. For the nature of veins, which  
 draw nourishment out the belly, in order to  
 distribute it into the body in general; some  
 parts correspondent is seen in the roots of plants,  
 for similarly trees as for a stomach - thence they  
 are implanted, draw nourishment. But as  
 animals require a more exquisite kind of food

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+ many, then by preparation & digestion; the stomachs are applied to their uses; many ducts are of the separation of food for excrement. All which things & plants are denied. Whence it comes that the bodies of plants are seen to consist of a very simple substance & approach much to the nature.

"Simularium", but depart from the laborious composition of organic beings. But since the work of the nutritive soul is to produce to like, either it makes in four nourishment for the conservation of individuals, or for the seed for the eternity of the species: two parts are finally given to the more perfect plants, one not necessary; one by which to give birth to new ones, called the root. The other ~~which~~ by which they bear the fruit; <sup>as above the</sup> embryo for the propagation of the species, which is called caulis (stem) in low plants, <sup>from</sup> truncus (trunk) in the case of trees.

indeed superior because on my regard as more perfect than what is produced under the earth; for many plants live under a single root, after the stem is dug up with the perfect seed, as Cycas, Arachnoides & many like, the inferior Ferulaceae: here, as much as you like, the inferior is produced above the earth; of excrement; if such exist, are removed by this part: in the same manner the superior inferior part are interpreted. Indeed, we ~~consider~~ <sup>consider</sup> the whole, in relation, we establish the inferior superior

p2

indeed superior because on my regard as more perfect than what is produced under the earth; for many plants live under a single root, after the stem is dug up with the perfect seed, as Cycas, Arachnoides & many like, the inferior Ferulaceae: here, as much as you like, the inferior is produced above the earth; of excrement; if such exist, are removed by this part: in the same manner the superior inferior part are interpreted. Indeed, we ~~consider~~ <sup>consider</sup> the whole, in relation, we establish the inferior superior





p3 (of the spontaneous)

Apparet autem in hoc loco substantia quadam, tum  
 à germine, tum à radice distincta, mollior enim  
 et carnosior est utrisque, unde cerebrum appellari  
 solet, in multis cibo accommodata antequam senescat,  
 nam per aetatem dura et lignosa redditur, ut ceterae  
 quoque partes, pulcherrime autem huius parti convenire  
 videtur cerebri nomen, quem admodum enim in  
 annulis cerebri medulle in capite est, unde spinale  
 medulle existit in totam spinam longitudinem deducta,  
 sic in plantis cerebrum in radice tamquam in capite  
 sedens per totum caulem quasi per spinam dorsi  
 medullam deducit ad vitalem humorem ramis et  
 extremis succulis delibundam. (end) (p I)

(continued from 152)

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(The place a certain substance distinct from  
 that which appears in the place a certain substance distinct from  
 short & not, soft more fleshy than either, whereas it is wood like  
 color cerebrum, in many plants bodies of this nature is present  
 (The same substance as the heart of plants joined with root, a,  
 as the color in the heart, tum is a substance of another kind the annual  
 brain which is also continued through the short & not in the  
 spinal cord is continued through the annual body.)

Cesalpino  
174 hinc 8

152B

apparent autem in omni caule et radice quaedam  
vel ut ait nervorum fascicula secundum longitudinem,  
quos nervos vocant ut in Abete: vel ~~est~~ crassiora  
quaedam in ramis deducta, quas venas vocant in foliis  
plurisque manifestissima: hoc igitur esse diverti meatus  
putandum est, et proportionem respondere ut vena  
cava in animalibus, sed multae et tenues ex radice  
in ca, et ex eade in caulem ascendentes: non enim in  
ventro aliquo communi contineri oportuit alimentum,  
ut in caule animalium ~~facto~~ fuit necesse ad spirituum  
generationem:

[ hinc leguntur hinc venae ) hinc cap. II. in physiol. )  
) dicitur tamen hinc §: unitatis = unitatis )

Videtur autem propria esse plantarum generatio,  
 non enim in animalibus ullis huiusmodi appetitionem  
 perspicimus: illorum enim partes omnes factae sunt,  
 antequam in lucem exeant. Plantae autem, quondam  
 videntur, novellas edunt partes, quae generatio vocatur.  
 Fate autem in animalibus, pilorum, et dentium, et  
 cornuum generatio geminationi similis videtur,  
 cum posteriori erumpant. Verum partes haec cum  
 facultatem nullam habeant ab anime; sed usum  
 tantum praestent, merito non censendum animalium  
 substantiam: ac plantarum gemine tanquam  
 animata vires eius animae et opere pulcherrima  
 ostendunt. Solum in utero parentibus videtur vero  
 generatio.

generatio.

<sup>Shape development</sup>  
~~generatio~~ is peculiar plants, in all the parts, animals are  
 prepared before they emerge into the light. The plants are long as long live  
 from birth new parts, this process is called "germination". (The trees  
 are formed before development, the plants AA)  
 In animals have, teeth horns on joints later.

p 6 line 10

Sunt enim plantarum semina tanquam  
 fetus animalium  
 The seeds, plants compared  
 to the fetus, animals



ex praeter radicem et ca, reliquas omnes partes ferendi  
fructus pariter habent: animalia autem solum uterum.

Excep. t. voc. "ca" all the same parts exist of (B. Soli, Beay  
frui: hinc animalia & uterum solum existit of the [fructus] ?  
[D] tran-plantae f

(12 lin f. latic) <sup>by a number</sup> planto enim magis erumpit flumen,  
eo magis folia ipsorum circumplectentia, tanquam  
manibus <sup>in the joints</sup> ~~manibus~~ <sup>alternis</sup> invicem superpositis explentur,  
sola pediculis adnexa: pari hinc gratia folia dat  
sunt, ut tenerum germin tucantur vel etiam fructum,  
ubi fructus erumpit cum flumine: post quem vix  
eadem explente sunt, alium usum praestare videntur  
umbram sicut, ne a sole nimis <sup>uro-trum</sup> urantur (cum

fructus, tum novella germina: moderatos enim folia  
radices utraq; desiderant, quod folium positum, et forme  
praestatur illos partem transmittentium, partem  
retinentur. Ideo plurimis in autumnis decidunt

folia perfectis fructibus, et germinibus quoq; retinent  
autem diutius servare fructus, diutius quoq; retinent  
folia: adeo ut quaedam usque ad alteram seminationem  
et alterius ament, ut Pinus, Salix, Saurus. Ferunt  
autem in regione serente, ubi perpetui se [p 7] re

hinc aestus, nullis arboribus folia decidit: propter utilitatem  
sunt: enim plantae perpetuae inibi foliorum opera ad  
umbram faciendam.

As the shoot emerges, so the leaves develop and it is as if the  
shoot then to leaves as year, Spoken shoot, from flower, then to  
fruit is exposed to the sun. The leaves fall in autumn then to  
When the climate is hot all the year round the leaves are  
not deciduous because there is always work of them in sheltering

germinis autem substantie uterius primum  
 ducit; non enim sine medulla est; neque sine eo  
 capere, quod medulla circumponitur; si quis enim vagam  
 seminatorem denudare a cortice studeat, auferet quidem  
 cum cortice folia, ut patet quae illi soli sine  
 appensa, gemine autem non auferet; continua enim  
 sunt cum uterius corpore substantia; idque  
 recte ratione; cum enim germinis fructus patie  
 datus sit, vis autem prolificae in medulla tanquam in  
 corde contineatur: hanc per tota germinis delectam  
 esse oportuit: quod si hanc, et lignum prope  
 circumpositam medulla, aut aliud capes huiusmodi  
 et huiusmodi contineat. Videtur autem quaedam sine  
 medulla prope in Calami, et sine cortice concavum  
 ferunt: sunt et arbores, quorum caudibus ex cavata videntur,  
 in-Salix, Olea. An medullae natura in non separata

ex circumposito corpore seu ligno, et forte in medulla,  
 patet enim venas alimentum habentes tangi a medulla,  
 eae autem per totam caudibus substantiam feruntur;  
 quantum igitur medullae in medio est veritas non tangens,  
 crescit caute, aut caudibus evanescit, hoc concavum  
 relinquens: in novellis enim feminibus, seu in radice,  
 seu ex ramis nulla reperuntur concavae. Dubitabit quoque  
 quis non in medulla; sed in cortice magis vim prolificam  
 esse: vocatatio enim sit solo cortice insito;  
 germinat autem secundum naturam corticis, non  
 secundum naturam ligni subiecti. [p. d] Praeterea  
 plerumque arbores circumciso in orbem solo cortice  
 emouentur in totum, non emouentur autem ex cavata  
 medulla. Truncus corticem insitum ideo germinare;  
 quic prosumpti ex subiecto ligno germinat, cui

Corticis agglutinatio. <sup>Salp. p. 8</sup>

Corticis agglutinatio ab affinitate; nisi enim  
 corticis oculus, oculo ligni accommodetur, non flumatur,  
 producantur autem ex foliis et fructibus secundum  
 naturam corticis: quia haec in omnibus ex cortice utam  
 ducunt: semina autem in eadem non secundum naturam  
 corticis, sed ligni subrepti fiunt; nam si serantur,  
 nascuntur, non pro natura insiti corticis, sed ut  
 plurimum sylvestre generis: atem enim ducunt  
 ex medulla, non cortice; quod autem corticis in  
 arbore circumfusis in plerisque arborem erexit, sic  
 qui seminant non sic sine cortice, ut salpeteris  
 expletum, qui autem derelinquitur supra  
 circumasum horum, emittit; quia ablatum ex  
 alimenti dantis ex infernis; si plus autem ex  
 ligno subreptum, <sup>part. in cortice luteo,</sup>  
 et aliis quibusdam, quibus <sup>part. in cortice luteo,</sup>  
 ligno inheret  
 in) cap. III



PP Beside many trees ringed as regard bark  
 above, die off entirely, but they do not die if  
 the pith is hollowed out. Therefore we speak of the  
 implanted cortex as short; because the short-  
 lived are for the underlying wood when the cortex is  
 struck by union. For unless the "eye" of cortex is  
 accommodated to the "eye" of the wood, it does not germinate;  
 but both of leaves of pine are produced across of the reticula the  
 cortex; ~~but the seeds~~ ... but the internal seeds were not  
across as the nature of the cortex is of the underlying wood.  
 ... (I can't make the an AA)

(Radix) Cum autem in eius capite sit et pars, quae  
 cordi animalium respondet, unde feminis principium ducitur,  
 aliquando una, caule, aliquando plures; et enim in  
 quibusdam & induratum est, unde unicus caulis surgit,  
 ut in plerisque arboribus; in quibusdam quodsi mododursionem  
 patitur, unde ab eadem radice multi caulis erumpunt,  
 ut in Tutris. Numquam autem unum a idem ex eadem ex  
 plurimum caulium; patet autem in iis, quae  
 caule alterum fundunt, ut in ferulaceo genere; numquam  
 enim ex eadem parte, sed à latere germinant; ut autem lenum  
 ex unius est caulis, sic videretur lenis quoque radice unum  
 ex esse, quod si hoc esset, nullae essent, quae plures caulis  
 ferant. An radix una unum quoque; semen initio profert;  
 postquam autem eadem magnitudinem adeptæ ex conspectum,  
 dividitur in quibusdam in plures principia vel simul, ut in Tutris,  
 ut succisive, ut uno extincto alterum abroscatur ut  
 Fensle. Plantarum enim plurimum natura est, ut divise  
 vivant: quia earum principium licet actu unum sit, et  
 tamen potentia plures: nihil autem refert, sive à nobis plantae  
 divisio fiat, sive sponte dividatur principium Solium: divise  
 enim radice quaedam, licet in parvas partes Coccinae sit sint,  
 germinant ut Graminis, Raphani Martiani: nam ubique; est  
 ear potentia, et haec radice fieri possunt: sponte autem  
 multitudine germinum fit, vel eadem subiacente radice communi,  
 ut in Fenculo: vel singulis germinum principia nova  
 suborte radice, ut in Ciperis, Trilobis (p 9) et tandem fasciculis  
 fieri omnibus: quasi sponte natura ipsa radice divisionem in  
 Senecalis moliat. Data haec quaedam sunt, in quibus nova  
 nata radice a germine, altera tanquam senis confecta  
 emittitur, ut in Satyris, et gladio contingit; dividit autem  
 natura ex toto cum germinum principia etiam nova radice, in  
 Alho et ceteris Bulboris: Alti enim spicae appellatae  
 principia sunt germinum, omnia ab eadem radice nata,

qua ex sicca propria singulis suboriuntur radice, <sup>practica</sup> ~~practica~~  
 qui propozande modus per loborem appellatur: seminatia  
 igitur ex radice hoc modo habet; ex autem in hac  
 seminatone castis eadem in humili materia, caudex autem in  
 arboribus; cum autem omne semen fructus ferendi <sup>practica</sup> ~~practica~~  
 sit, quod in radice est, aut statim fructus fertat, ut in  
 Bulbaceis, et fumentorum generibus, et in Palma, aut  
 aliis intercedentibus seminibus, idque vel per unum vel  
 per plura media, secunda igitur seminatia in caule fit  
 ramos constituit, tertia in ramis ramosculos producit;  
 et sic deinceps. Appellam autem extremas seminatones  
 in arboribus surculos, quos ad inferendum assument.  
 In genere igitur humili, quae caulem amittunt, nullae  
 fieri transeunt tertiam seminatiam: in genere autem  
 arboribus ad minus tertiam seminatiam fructifera, ut in Vitis,  
 idque non ex semine, sed si seratur ramo, unguis annis  
 novo semine procedente, non omnibus uno anno  
 erumpentibus, ut in genere herbaceo. Seminis ~~est~~ autem  
 eruptio, non ex omni parte caulis fit; sed majori ex parte  
 ex alio folium, quae silice parte folii pediculus nectitur  
 cauli, inibi enim oculus est futuri seminis, quasi quasi  
 folium eius custodiendi fructa ~~fit~~ appositum, sine quodam  
 in cortice relicto, quae ab eodem exiens abscidit. hoc  
 enim in hac parte veluti alterum eor eruptente in eam  
 sedem ex interna medulla principio. Quapropter nodos quidem  
 caulis apparet, qui si totum caulem circat, gemculus  
 vocatur, ut in Tutio et Calamo, cocuntibus et veluti  
 implicatis in hac parte nervis; partim ad robur, in quibus  
 caulis est inanis, ut in Tutio, partim ad novi seminis  
 productionm, quibus seminatia in caule dote est. Odo  
 autem quidem seminum spectatur in foliorum, nam vel  
 singule in singulis nodis, sive gemculis nascentur; idque vel in  
 duobus lateribus tantum, haec quidem in duobus; haec  
 vero in sinistro alternatim, ut in frondem, vel plures, in  
 quibus ~~odo~~ modo minus perspicitur, vel in singulis gemculis

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phloem

brina, autem plura ferunt folia, ac gemina; quae autem  
brina ferunt, alternatim dispositae sunt, ut haec quaedam ante  
ex retro spectant, haec ~~vero~~ vero in dextra & sinistra: de  
quam foliorum & geminarum positionem in pluribus caulis videtur  
quod ~~est~~ ut in Marrubio. Horum quibus omnium & later  
seminatio sit; sic enim dispositae sunt folia, & quoniam  
~~alio~~ erumpunt gemina; unde et rami alii vocantur; quaedam ~~autem~~  
p<sup>lo</sup> autem sunt, quoniam geminatio non in omni  
foliorum exortu; sed in summo tantum <sup>fit</sup> veluti fissis in ea  
parte caule, ut Tithymalorum genus, Lenum, ~~habet apertum~~  
et ut et albos Abies, Pinus: omnes enim his folia undique  
dense ~~et~~ vertuntur caule, ut non pateat gemmarum geminis  
exortus nisi in summo: ideo in his rami ex certo  
intervallo et numero conditi pulchre spectantur, quod  
in ceteris non videtur: licet enim senectute, vel robori  
caulis intervallo distans, non tamen in omnes geminas  
proveniant, vel non <sup>paria</sup> paria. Quibus surculis <sup>quibus</sup> ~~quibus~~ <sup>fructibus</sup> ~~fructibus~~  
dispositae & radice eoque aut  
ferentes huiusmodi sunt.

Cap. V

Quoniam vero plantarum principium, quod cor appellatur,  
non quemadmodum in animalibus in uno quodam loco  
seorsum per se: sed veluti in omnes partes  
distributum est, fit, ut multae divisae non solum vivant,  
ut quaedam animalia inter insecta faciunt: sed per  
divisionem propagentur, quod nullis animalibus contingit;  
ubique enim ex cordis vertice, ibidem est et geminis  
ex radice principium: ac si ante divisionem quaedam abscissae  
post ea vero etiam ante, videlicet radices quaedam abscissae  
semen emittunt, et e contra caules quaedam abscissi,  
si intra terram condantur, radices egerunt, et alimentum  
trahunt: quamquam non similis in omnes  
sit propositio: quaedam enim radice divisae melius  
proveniant, ut Helenium. Raphanus montanus,

Latini  
chrest.  
p. cap. IV



quedam caudice, aut ramis majoribus seri postulant, ut  
 Olea, quaedam surculis in Punica et multa ex genere  
 suffruticam; Mays autem radice ex veteribus  
 ramis erumpunt; semina autem ex iunioribus:  
 Scisco, qui serunt, surculo atque annuati rami  
 relinquunt, ut in vitium malleis. Quod autem de miriam  
 divisionis divisionis multas faciunt, idem sine divisione  
 quaedam molientur: nam si contingat ramos terram  
 attingere, radice in contactu dimittunt intra terram, et  
 novam plantam germinant, quos virgades vocant, ut  
 vite et fere omnibus, quae ramo, aut surculo proveniunt.  
 Maxime autem id fit in herbaceis quibusdam  
 quorum caules humi serpunt, ut in Hedera terrestri,  
 Ranunculo quodam Pentafello, et Humulo: nam in  
 his, duo genera caulium natura moliti videtur, unum, qui  
 attollitur ad fructum ferendum; alterum qui serpit ad  
 sobolem. In singulis femulis procreantur: idem quaedam  
 quaedam intra terram faciunt, in framen, et Ciperus;  
 nam ex hac in singulis femulis in radice, et semine  
 emittunt. Illud autem peculiariter adnotandum, in  
 Dentaria: cum enim haec caulem rectum ferat; radice  
 tamen feniculatos in singulis foliorum alii fert, quibus  
 deciduos in terram nova erumpit plantae, cum tamen  
 in summis caulibus eadem aliquos ferat, in quibus semine  
 continentur, ut simul in eodem caule ut unquam videtur  
 esse semen et sobolem. Inanis autem aliae sine,  
 quorum caules radices edam supra terram, non tamen  
 ad sobolem firmendam: sicut ardelate nutrimenti illas  
 gerunt, ut Hedera, quae suo complexu complexu  
 arbores, vel parietes numerosis radicibus exigit, et  
 in Sempervivo quoddam genus arborescens:  
 haec namque radices et caule longos dimittunt, donec terram  
 attingant. Peculiariter quoque in Allio et Porro videtur: cum  
 enim haec sobolem ad radices ferant, gerunt etiam in

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Radices caelestes loco seminis. Quae enim serenter  
 radicem capita sunt non semine similem sobolem etiam  
 in ~~seminis~~ summis foliorum videmus in quodam Bulbo  
 quos ~~proli~~ vocant: Differ- autem soboles à semine, X  
 in factis vobis ob-~~er~~o: semen enim tanquam ovum  
 est, in quo est principium vitale; at vitæ nequequam.  
 Soboles autem vitæ primo quidem iuxta parentē, ut eius  
 semina. postea vero posse ipsam propriis radicibus ex terra  
 humorem trahens. Praeterea Soboles, vel radix est incoctis,  
 vel ferum, vel ~~altum~~; Conspicua magnitudine herbas;  
 Semen eorum principium fieri videtur in cortice: idcirco  
 nutritie multam sobolem plantae nequeunt, semine autem  
 valde numerosa ferre prope possunt, ut in annulis Vipera  
 & Orpera se habent: Soboles autem generatio simpliciter est  
 tanquam ex partibus avulsione generatio. Seminis  
 constitus multiplices partes requirit. Partes  
 igitur, et radicem, et germinum atum et constitutionem  
 explicavit, ~~deinde~~ ~~seminis~~ ~~apertum~~ ~~quodiamer~~.

Cap VI p 11

Cum in ea propagatione, quae ~~est~~ fit ex semine, plantarum X  
 finis consistat; quae enim ex sobole fit imperfectionem  
 naturam sequitur, quae saltem plantae divisae vitium,  
 merito plantarum multitudo in seminis productione  
 maxime ostenditur: Nam et numero partium, et figuris,  
 et conceptuorum differentiis puritate ~~est~~  
 maiorem ornatum praesertim quam germinatio: eadem  
 florum admirabilem venustatem, quae generis naturae  
 delicias in ~~seminibus~~ seminibus condendis praesentant.  
 Quomodo igitur in animalibus semen excrementum  
 est ultimi alimenti in corde, cuius calore vitale cum  
 spiritu agnoscendo fecundum redditur: sic in plantis  
 necesse est seminum substantiam ex ea parte secedere, in qua  
 nunquam est calbris uncti, quam medullam esse  
~~superius~~ comprobavimus. Hinc igitur ex humidiori purissima  
 parti alimenti seminis medulla ~~exiit~~ ex crassiori autem  
 eiusdem partem ad tutelam circumpositam. Non ~~fit~~  
 fuit autem necesse in plantis fertur aliquam  
 20m 10 p 12

Trans of Cop IV p 8. 152 I

But since at the head of the root is the point where corresponds the  
 heart of animals, whence the beginning of the shoot arises,  
 sometimes in one stem, sometimes in several; for the heart  
 in some is undivided, whence a single stem arises, as in  
 many trees; in some in a certain manner it suffers  
 division, whence for the same root many stems arise as in  
 tubicum. But one & the same heart is never the source  
 of several stems. But it is clear in those which, to the further  
 they bear some parts, produce another, as in the ferulaceous kind;  
 for they never shoot forth from the same part, but from the side  
 but as one heart is 2 one stem, thus it is seen to be  
 also one heart of one root, because, this is, then an issue  
 which bear several stems, on one root may shoot also  
 arise. but often the same has reached compresses up, in some  
 it divides into several apices, either at the same time, as in  
 tubicum, a successively, as one dying, another  
 grows up as in Ferula. For it is the nature of most  
 plants that they have divided, because their apices may be  
 one in fact, this is however many many in particular.  
 but it makes no difference if the plant is divided by 2,  
 or if the apices single plants divide spontaneously.  
 For some roots may be divided into small parts as from one  
 Raphanus muricatus; for the the heart was entirely  
 potentially, other may be propagated by the root. But  
 spontaneously a multitude of shoots are made, either common  
 to the same underlying root, as in Fennel, a few will be  
 as in Greens, I vs (p 5) & under all the Jerusalem;  
 as if one is one accident ~~but~~ it very nature and in  
 down, to roots at the nodes. Nature there are some  
 which ---

(cani in the paper - all. 177)

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Trans of California 1824.

152 P

Cap VI (the <sup>is</sup> hatched a  
sacks)

It is in that propagation which is made for the seed,  
the object of the plant consists, <sup>the</sup> made for the most  
<sup>purpose</sup> (the plant consists, <sup>in</sup> as far as parts <sup>of</sup> the <sup>independent</sup> p 47)  
is of a more useful nature, <sup>is</sup> than a plant <sup>is</sup> used,  
the beauty of plants <sup>is</sup> to produce a seed <sup>is</sup> more manifest.  
For both a number of parts, <sup>is</sup> in shape, <sup>is</sup> <sup>different</sup> <sup>in</sup> <sup>the</sup> <sup>subject</sup> <sup>of</sup> <sup>the</sup> <sup>vegetative</sup> <sup>part</sup>.  
<sup>seed vessel</sup> <sup>receptacle</sup>, to furnish a clay way <sup>is</sup> advance / the vegetative part.

Thus: plants it is necessary to the substance, the seed  
shall be secreted for their part in which is the principle, which  
here, and we have shown on the page.

Non fuit autem nerva in planta feminuram aliquam  
distinctam à materia secerni, ut in animalibus,  
quae mare et foemina distinguerentur.

... idcirco mare et foeminae distinctione non  
indiguerunt ... Inest igitur in omni semine  
quaedam planta in coactio. Quomodo enim  
ut quaedam particula continetur, in qua est arculus  
futuri veluti delineatio, reliquum autem caputentiae  
pro alimento ex; sic in plantarum seminibus pars illi  
principatum continet, unde radix erumpit et femur;  
ex enim spaci corculum quoddam reliqua parte  
seminis alimentum illi firmius subministrante: patet  
autem id mox in tutico; pars enim quaedam in  
relati vultus, quam si laceros, nequaquam nascitur;  
sic ut eam particulam formae erudere solent,  
antequam recordant intra veram. Si autem reliqua  
pars seminis vulneretur, aut à vicinis perforatur,  
ut pro servato corde nihilominus provenit.

...  
Tunc autem radix primo ~~emegit~~ emergit periculis  
quodam ex corde seminis procedente, quoniam corticem  
delibescere et egressum semini concedere necesse  
est: postquam autem radicem in terram egerit,  
reliqua seminis caputentia in plurimis ex suo  
cortice tanquam ex ovo in lucem prodiit, quae in duo  
foliola pulposa et plenta partitellata ~~et~~ ostendit  
unde femur erupturum est: terra enim haec duo  
folia exortum ducunt, et est, quippe radicis caput,  
et seminis principium, nam autem haec ulterius  
generis folia, quam quae in seminatione exoriuntur;  
illa enim tantum ad tutelam dacti sunt tenentia  
ex solo cortice orta, haec partes sunt seminis ad

For as the egg & certain small part is contained  
 in which is not the delineation of the future animal,  
 but the rest is food material: is in the <sup>the part</sup> plants part of the seed  
 contains that principle whence root shoot arise; for  
 there is so a <sup>certain</sup> little <sup>coaculum</sup> <sup>in</sup> the remaining  
 part of the seed <sup>the food</sup> <sup>supply</sup> food to it. This man-dwivis  
 in the view. For a certain part in it is as were the  
 eye, & if you destroy this, it does not germinate at all:  
~~and~~ in answer to the ants an worm to bite off their  
~~part~~ little bit, before they stow it away undigested,  
 then of the remaining part of the seed is wounded, or pierced  
 by worms, if the "eye" remains whole, it grows nevertheless.

But then to root four-eyes... coming from the cor of the  
 seed, since it is necessary ~~to~~ <sup>to</sup> enter &  
 to <sup>the seed</sup> <sup>to</sup> yield a place & press of the seed.  
 but after ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~seed~~ <sup>the</sup> ~~and~~ <sup>the</sup> ~~earth~~ <sup>the</sup> ~~to~~  
 remaining food material of the seed generally for to cater to  
 for the egg comes forth into the light, & shows them - little  
 pair - unfolded into two pulpy leaves (foliols) whence it  
 shoot - first part: by which root than two leaves lead out (?)  
 is the cor, indeed the radice caput, & principium of let's  
AA  
 the shoot, but these leaves are of a further tend, than  
 those which arise in germination; for these give so much of  
 succulence as are ... spring for to cater alone, while these  
 are part of the seed ministering ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~food~~ <sup>the</sup> ~~of~~ <sup>of</sup> the cor: [p 13]  
 therefore being an think for nearly all the pulp of seed consists  
 them (in his constitution): -- the large part of seeds in 2  
 parts dissected is united by the cor, <sup>in</sup> <sup>the</sup> <sup>seed</sup>  
 is no division as in the wheat grain, & pulp of the seed  
 does not come much out of the cater, for short buds are  
 for the side, not for the middle, to pass of the seed does not  
 unfold into leaves, since they do not come out of the  
 cater; the apudices of the seed remain  
 again to new plants while all the pulpy leaves are

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Ces

p 13

alimentum primum cordi ~~ministrandum~~ <sup>ministrandum</sup> : ideo crassa  
 existunt; tota enim femina seminum pulpe in his  
 consistit: od id magna pars seminum in duas partes  
 dissecta est eade tantum concingente; si quae autem  
 sunt, in quibus duresco nulle sunt, ut in frans Tritici:  
 (Beri ~~ad~~ 10 lina f eu) Cap. VI p 13

Semina pulpe in exorta minime egredietura e cortice, semina  
 vero e latere erumpit ~~et~~ integre seminis corpulentia cordi  
 haerente, idem quoque fit in multis leguminibus, quoniam  
 enim semine bifida sunt sint: ~~cum~~ cum enim femina  
 ex latere ~~erumpit~~ erumpat non ex medio, seminis partes non  
 explicentur in folia, sed id neque ex eunt e cortice: manent  
 autem iuxta novellas plantas huiusmodi seminis  
 appendices donec tota huiusmodi castus cum sua purgatione  
 in partium nutrimentum transierit, quo tempore exsiccatae  
 decidunt. De ortu igitur seminum et natura, a  
 substantia dictum est, de ceteris autem partibus seminis  
 gratis datis deinceps dicemus.

## Cap. VII

Sicmadmodum in animalibus circumvolui fortum  
 membrans partit ad tutelam, in seminibus plantarum  
 multiplicata data sunt involucra de eadem causam: sed  
 eorum quaedam abscedunt incoato semine nondum perfecto, ut  
 flores, quaedam postquam seorsum absolutum est, ut pleraque  
 vascula et ~~per~~ reliqua; dehinc enim sparte exsiccato  
 semine; quaedam perpetuo herent quosque semen gemmate  
 incipiat; tunc enim ut ungerente medulla cortex absumptur.  
 Flores igitur partim ex necessitate, partim ad tuendos fructus  
 inipientes dati sunt; ex necessitate quidem, quoniam tringente  
 plantae, ut <sup>spiritum</sup> Venere sedem animalis, effleri necesse est aliquem



Cap. VII p. 14. *Caulifera*

constant autem flores plerique ex foliis, ex stemine et  
 floribus; folium in circuitu magis ambit, modo unicum  
 et indivisum, concavum, vel patulum, ut in Smilace,  
 Androse, modo in plura folia dissectum, ut in Papavere,  
 Rosa, statum in medio tantum folium sent ex  
 summa parte fructus egredientia, suppe quae in sed  
 seminum altius prodeunte nascantur, ut in Croco a-Lilio  
 Cere; quia seminum sedes in orculo triplicate est; Flori  
 in ambitu magis sunt iuxta folia, pendunt autem corpe <sup>culis</sup>  
 quaedam ex tenuissimis filamentis, quorum atus similis  
 videtur fungis, qui in lacunatum lumbibus et fulgine  
 vivunt; hinc enim multum sprant flores, numerose  
 autem sunt huiusmodi capsulae, in quibus seminis  
 sunt huiusmodi capsulae, quasi haec sunt singulorum  
 seminum propagines; patet autem in Chinae rebus et Ranunculo  
 nam praeter folia ambientia virgulis seminibus proprii  
 insidens floribus patris quam fructu.

p. 15

sum etiam quaedam, in quibus Amantaceum jam  
 ortum sine ulla spe fructus; steriles enim omnino  
 sunt; quae autem fructum ferunt, non flent, ut... in  
 genere herbosae, Mercurialis, Urtica, Cannabis; quorum  
 omnium steriles ~~non~~ mares vocant, ... Omnis vero flo  
 cum ex utrimque partibus, unde semini metis erumpit, ortum  
 ducit, ex tenuis tegitur altero involuere, qui calyx  
 vocatur in quibusdam ut Rosa et Papavere: ritur autem  
 hic cum ex tenuis sic ex caulis cortice, seu tunice, ideo  
 herbari coloris est, ut folia Delphinii, autem unum cum  
 flore; sed non deinde et ut folia, aut uter enim et  
 cortice, et saepe eo utitur natura ad fructum continuandum,  
 ut in omnino et Ranunculo: semina enim eorum in calyce



fuis continentur, postquam fles decidit.

omnis enim fles <sup>p 16</sup> intra caulis corticem continetur.  
 & eos <sup>flos (corolla)</sup> continentur <sup>the outer</sup>, the stem  
 Cap VIII <sup>leaf</sup>

Fruition vocamus, quod & semine et semen continentibus  
 corpus constat; quavis proprie secundum nominis  
 appellacionem ea pars significatur, que fruimus in cibis  
 appetentes; & pertinet autem inter cibos aliquando  
 nuda quae semine, ut Pini, Noci, Castaneae, et  
 annuum fugum & leguminum. Aliquando carnem  
 seminis circumponitur, quae proprie Pericarpium  
 vocant, ut Mali, Pui, Melopeponis. Cum igitur de  
 semine superius dictum sit, relinquuntur, ut de  
 circumpositis corporibus dicamus: hanc scripturam

initio (Rog p 17)  
 Cap VIII

The fruit consists of seed & the body containing it. Some are  
 true fruit means those which we enjoy as food, like those  
 sometimes are called seeds, including pine, nut, chestnut  
 & <sup>peas</sup> legumes. Sometimes we can the flesh surround the seed,  
 what is accurately called the pericarp, as in apple pear.  
 Some then we have spoken of the seed, & mean to speak of  
 the surrounding bodies:

Caerulpinus. Regi p 17

1528

apud hunc sumpto initio carpi: Cyp ~~et~~ S.

non (botta) p 16

Quaedam omnibus duplex cortex datus est, utemur quidem  
 tenuior, ac mollior, membranacea medullam undique  
 tangens, qui tamen in quibusdam fructibus abscondat, ut in Pinis,  
 in quibusdam pertinacius hereat, ut in Tutis: <sup>(p 17)</sup> exteri vero  
 durior et crassior, ut plurimum osseus, vel cartilagineus: qui  
 facile seungatur ab uterque membrane in plurimis, in  
 quibusdam tamen propter tenuitatem & selegi difficultas  
 possunt, ut in Leguminibus a- frumento ... Neuter  
 semen cum Cortex, qua parte ea est. Cum enim in ~~cap~~ ea  
 parte sui radiis principium, per eandem prope vellet per  
 membranam & parte trahit alimentum ... Verum ne  
 similitudo ~~est~~ Cortex, omnibus secundum eandem partem cum  
 planta nebitur: Nam quaedam eo modo sedem, ut  
 seminis Cer & Ceruus veyat, ut in herbaceis ~~est~~ vero  
 plerisque arborum fructibus contingit. In herbaceis  
 pluribus eodem ex- raris seminis ex- terna cortex, ut in  
 Leguminibus a- frumento; cum autem seminis substantia ex  
 uterque caulis medulle atque durat, necessarium fuit &  
 ut omni geminosa partibus nervulos egredi ad fructum  
 usque, per suos motum seminis ferretur: Hinc fit, ut non  
 fructificans plantae & raris classibus, paucis quibusdam  
 exceptis, ut Silique a- Ficus Egypte: sed & nervulos, ut  
 plurimum annotatis ut Amygdale, aut novellis geminibus, ut  
 Vitis. Nam seminis motum ex his magis evanescere possit potest,  
 quam & crassior ligno: is igitur nervulis alimentum  
 ferentibus operose sunt omnia seminis cum propriis cortibus:  
 ... Cortex figurae in plerisque pro figura seminis

Nov 152 X

152 Y

The seed has <sup>16</sup> a double wind, the outer the former + the other.

The seed is covered in the cortex at the cor. For in the  
parts the beginning, the root, & sometimes passes through it as  
through a umbilicus

Because the seed for the seed comes for the parts, plants  
do not generally fruit for their ~~trunk~~ branches, but from  
young shoots. For a seed of the seed ~~can emerge more easily~~  
is better able to emerge ~~than the~~ for young shoots than through  
much wood.

Corticis. 12 lms f. ltt 7 p. 17. Capp

Corticis figura in plerisque pro figura seminis  
contenti habetur: Nam hoc vel orbundum, vel oblongum,  
vel depressum, vel recurvum, vel angulosum &c  
In aliis appendicibus Corticis datae sunt, unde varietas  
figurae, ut in Tubulo.

(Colan, sec) Myro ex omnino atra multa sunt;  
corticis enim substantia fulminea est, non pura, ut  
contenti seminis

p 18  
purior nitidior secernitur in semine, tenuior in flores,  
crassior in cortice.

Capp 9 (m 15 a 20)

Non est autem eadem seminis materia ex pericarpio;  
illa enim ex profundi partibus erumpit, ut superius  
comprobavimus; haec autem ex lateribus majori  
aere, scilicet ex cortice. Rationi enim consonum  
est, ut quemadmodum pars nervosa cum medulla  
cortex tegitur in femine, sic in fructu, quod ex  
interius vitur tegatur ab alioque corpore, quod ab  
externis atum ducat et in ~~est~~ ibi tres sunt scilicet,  
Medulla, lignum, et cortex: sic in fructu, semen  
cortex, et pericarpium, ut aliud quid, quod pericarpium  
vix em gerat. Indivisum autem est, quod pericarpium  
materiam ex cortice statuat;  
Dentes Colan, textu + Cartera, variis pericarpis

p 22  
An si femina ex foliis consideremus, omne  
huiusmodi unum esse fructus, non plures? Nam omnes  
racemosi et spicati fructus in eadem foliis teguntur:  
et tandem Quercus in novo femine fructificans,



Corymbus p 22

fructum sub foliis reconditum initio ferunt, sed juniora  
folia altius finis gratia date sunt, flores autem ex  
florum tegmine foliis fructus gratia: merito ex <sup>his</sup> non  
ex foliis autem et multitudine fructuum spectanda  
est. si qui <sup>autem</sup> flores sunt singulis semibus distributi,

sed sub uno communi florum tegmine, ut in Acanthiis  
partatur, unus est fructus dicendus non plures: si autem  
nullum sit commune tegmen, licet flores racemati  
cohaerant et fructus, ut in Lychnis et Vitis, non unus  
est dicendus fructus: sed fructuum racemes. Est autem  
unus racemus, qui uno principio ex caule funditur  
in plures fructuum sedes. ... in frumentorum genere  
speciem vocat, quae creta ex, Triticum, quae spissim

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prospicitur in <sup>Umbellon,</sup> Panicula, quae magis  
compacta, ut in Panice, in genere fructuoso, <sup>Umbellon,</sup>  
seu Umbrellum vocant; quae creta in <sup>Umbellon,</sup>  
quandam superficiem definiunt ad eorum similitudinem,  
quibus utitur in itinere ad arcendo solis radio.  
Furcificam aut quaedam in summis caulibus, ut  
Carya, et inter arbores Palmae. Quaedam in ramis succulis,  
ut Valeriana, et inter arbores Phlox. Quaedam in latere,  
adque vel in ipsis foliorum alis, ut Frax, vel in oppositis  
foliorum parte in Vitis  
ut Ruscus, Chamodaphne;

Portia "sunt etiam quorum folia adeo crassa,  
ut in ramos et caudicem transeant, ut Pontia, in  
culis summis foliis tanquam in succulis fructus  
nascentur.

(Deq. l. 3 p 23





Quaedam in radice fructificant, fructuum pediculis  
 potius quam caulibus ferentes, ut Viola, Adonis,  
 Mandragora ... Quaedam florem praesquam foliis  
 edunt et gemere, ut Amygdala: fructificant enim  
 in anno secundo, idē contingit iis, quae in ramis  
 grandibus et caudice fructificant, et inter herbas quaedam  
 ex iis, quae in radice fructificant, ut Arabis, et  
 Naransi quoddam genus, Adonis. Quaedam quoque  
 autem in caulibus fructificant, et inter arbores, quae  
 in novellis geminibus, anni germinant prius, et foliis  
 edunt quam flores, sunt quaedam quae utroque modo  
 fructificant in truncis: quaedam enim in annis  
 secundo proveniunt, quos grosso vram, quaedam  
 seminat, novellis, qui et postea maturantur; Tempora  
 autem fructificationis sunt pro geminationis tempore,  
 cum ad fructum aetatem pervenerint, in sua  
 genere possunt sibi simile, haec autem plerumque  
 cum germinant, tum fructificant inter arbores, sed de  
 fructificatione et partibus ad fructus constitutionem  
 dato haec sufficiunt in annotationem; non  
 singillatim in singulis differentias contempleremur.

## Cap. XI

Sunt poro aliae quaedam partes in plantis nonnullis,  
 ut in animalibus, cornua, pili, et ungues, partim  
 alius frata, partim ex necessitate; Succius quidem  
 frata plantis, quarum caulis infirmiores sunt, quam  
 ut se ipsas aut fructus sustinere possint, naturae  
 adhaerit capredos, seu claviculos, quibus tanquam  
 manibus vicinos plantas apprehendant, et veluti  
 funalis circumducto amplexentur, ut earum adminiculis  
 sustentari possint, ut Viti, Cucurbitae, Pisci. Orientur  
 autem Capredos, vel in ipsis foliorum alis, vel a latere, vel  
 ex adverso, vel etiam in summis foliis, ut leguminibus

Diaply he says to see this sign for the insect  
but I think it is necessary to find for the insect

Nam hoc modo vicina simpliciter scandunt, ut Periphoca... quae  
sensus quidam adjacentis corporis illis videtur in esse, cum  
repant, donec inventant, et inventum apprehendant.  
He thinks that these twiners are able to sense adjacent bodies,  
"as if they seek, then find, and having found, take hold",  
"since they creep over things"

How does the *Parasium* creep over things? "Strong"  
How is *Reverberaria* produced?

(trans 152)  
Cyp XI

Then in some parts  
nails in animals, partly  
for reason; indeed, to solve  
rather weak, so that they may  
add tendrils (as perches, see  
to the hole of neighboring plants  
draw round), as to the vine,  
vine, Cucurbita Pa. [The  
very much to some words; "  
membra apprehendunt. N.D.  
a man of my age, the same  
Tendrils are seen in the  
beide them, a opposite to the  
summis foliis) as hyper:  
(trans 152)  
In some leaf stalks  
they are dotted another - but  
they the hole stem, or by  
by them it is ~~found~~ very  
But how some do by the

accomplish of means, the shorts then selves working  
around in the manner, a set response. For example in the  
manner, embracing their neighbours, as *Periphoca*,  
my herbs Helixure, as if a caterpillar ~~periphoca~~ / adjacent  
body is seen in the ~~hole~~, as if they seek, then find  
very few, later hold. In stems for to prevent, & under  
inflated  
1 injuries, to some an divided; in stems in *Rubus*;  
under under leaves, or in *ergo* in *may*  
2 thistles (A *Canaceis*) in leaves, holly; -  
fruit, tubules  
In some the shorts to extract turn not they to some, &  
*Surrex* aculeis, Nepa, in stems the leaves  
themselves an to some, as *A. sparsa*.



p23 an  
 -24  
 quibusdam contingit; Quaedam foliorum est pedunculis  
 pro capredis utantur, ut Clematis: Hedera aliunde  
 genus capredi <sup>sortita</sup> est; nam veluti unguis partem  
 caulem frequentes, aut veluti Centipedium, pedes  
 ex parietibus. Quod autem capredorum instrumento  
 quaedam faciunt, aliae succum feruntibus praeant  
 serpentis modo se circumvolvuntibus: Nam hoc modo  
 vena anglicae autem scandunt, ut Peiperora, et inter  
 herbas Helix ura, quae sensus quidam adiacentis  
 corporis illis videatur inesse, cum repant, immo inveniunt  
 et inventum apprehendant. Illis autem ascendas iniurias,  
 aut etiam inferendas tubati sunt aculei; nunc in  
 canibus, ut Rubeo; nunc in foliis ut Agrostis; nunc in  
 fructu, ut Tubulo; nunc in foliis tantum, ut Ononi;  
 nunc ubique, ut plurimum <sup>(p24)</sup> Ranunculis: Quibusdam  
 Musci quia in pungentia aculeos deforunt, ut Tuncus  
 acutus, et Vepes, aliis quia in foliis aculei sunt ut  
 Asperagus. Parte autem de solam necessitatem adhibet  
 videntur, quae in vetusti arborum caudibus coronae  
 innascuntur, ut villi quidem convertentes foliorum modo,  
 aut ad similitudinem Tubae propendentes, quem  
 Moysen vocant; Peculiaris etiam quaedam sunt ut in  
 Robore felle, ut Ilia granum panicum, in Ulmo  
 vesicae quaedam, in Palo canino villi quidam  
 tuberculi quae spongulae vocantur, et in aliis  
 multis divinis, quae tanquam ex cornu sunt videnda  
 cum nullius gratia dote esse videantur, licet hominibus  
 usum aliquem praestent. His autem ex pluribus sequitur,  
 ut plures in genere distinguamus

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Repant here  
renewed  
after (p23)

check are "repant" here ll above  
 repant and be [they creep]  
 [they slowly move]

Trans of 152 § for 11 lines  
for better.

1527

Particulars - falls he describes - | to return of experiment,  
array of records - not of - purpose.

Trans of 152 θ

A herb purging is also after seedly dies entirely, but  
herbarists call any thing that skin has medicinal virtues in it  
leaves - some people call plants herbs of the kind can be  
used for cattle's make hay.

(I have not made this all in - it would be safe to say that  
the things had much variation in them - in the idea, I think  
conclude - herb.

Trans of 152 i

There has been divers into vegetables as for some  
coronary flowers for any together things to be used  
as in another of the few together plants  
in some sort, we find dissimilar plants together, such  
as Cyclamen & Tulips; as if you try to classify  
by natural stems.

Trans of 152 k

Plants that are dissimilar of one another may have similar  
leaves e.g. Apricot & Rosehedge  
Cedar - shape - persistence and also unless

(not to my purpose in X - le)

152 ✓

As deservedly for the mode of fruiting - many kinds  
plants emerge: for no no other parts such - small blue  
of years - distinct in | nature is seen as in fruits -  
(this is not a good trace)

Plants in the fruiting as in the ultimate perfect  
show admirable variety,







X

quod eorum floris, vel foliis de grandam coloris venustatem,  
 vel suavitatem odoris in curas assumi soleant; cum  
 tamen non ceteris inter se valde distent. Idem in genere  
 aculeato reperimus, et ferulaceo; praeterquam quod haec  
 a grandam partium similitudine ~~non~~ assumpta sunt;  
 Ferulaceum enim genus penitus, prode caulem similem  
 ferulae ferit: aculeatum vas, cuius vel folia, vel  
 fructus, vel caulis aculeis armatur: praemis huiusmodi  
 inter frutices proque, et inter arbores, et inter herbas  
 reperiuntur. In his praeterea, quae res habent  
 medicatas, unum genus herbaceum statuent, cum tamen  
 ex multitudine differentiarum, et totis formis maxime  
 omnium vagum sit. Ex his quidem, quae hucusque  
 tradita sunt, diffinitis valde est plantarum cognitio:  
 undestinctis enim ferulaceo, generis multis modis  
 confundi necesse est; nota autem est diffinitas, quae  
 incertum est, unde similitudo generum colligenda sit.  
 Cum enim duae maxime conspicuae sint  
 plantarum partes, radix et seminum, ex neutrorum similitudine,  
 et dissimilitudine generis, et species colligi posse videntur;  
 nam si unum genus earum statuamus, quae radice  
 + Curstant rotunda, in Rapum, Anulobochium, quae  
 cum rotunda; Coniungemus autem distantiissime. Gleditsiam  
 eorum ex Reperi distantissime est natura in ceteris  
 omnibus. Similiter autem si unum genus statuamus eorum,  
 quae radice costae fibrosae, ut Tutrici Ranunculi,  
 Ellebori, in eadem differentia incidemus: quod et  
 in ceteris differentis contingit. Si vas caulem  
 differentes contemplerur, ut unum genus eorum  
 posuerimus, quorum caules multi sunt, in Iunci, Caepae,  
 + ~~Aphaca~~ Aphacae inter <sup>p26</sup> leucosae, Vulae: similiter Coniungemus  
 diversissime, et disingenus maxime affinis. Positum est

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line 2

genus Ferulaceum ab caulis similitudinem, qui propter  
 leuitatem baculis spectatur. praecipue pueris cedentes,  
 ferulam computondens Aphrodium, Elleborum candidum  
 Papyrus, et alia huiusmodi in caulis distantissime.  
 Quod si folium caulem vertentium differentias notemus,  
 aut etiam florum, in eadem difficultate inuadimus; multa  
 enim sunt genera distansime, quorum folia maxime  
 similia existunt, ut Polygoni, et Hyperici Eruse, et  
 X Sesamoidis, Apii, et Romanuli, et quae eiusdem  
 generis aliquando foliorum differentia valde differunt,  
 ut Romanulatorum species, et Lactucarum. Tanto minus  
 X florum color, aut figurae, aut alia huiusmodi  
 similitudinem generis plantarum constituant.

Quid enim commune habet Vitis cum Cerauto,  
 praeter floris similitudinem? Quod si omnium partium  
 similitudinem quaeramus in generibus constitutis  
 non magis species ultimas quam genus constituentes  
 (Vix id hinc fieri) Cap XII)

Nam quae similia in multis sunt, ut plurimum specie  
 non differunt. Modice enim eorumdem differentia  
 non semper speciei diversitatem facit, cum saepe de  
 locorum necessitate, et cultura, multum immutentur  
 folia, tum flores, tum reliquae partes, ut praecipue patet  
 in arboribus. Si enim domesticae serantur,  
 et plurimum sylvestris nascentur, quoniam indifferenter  
 specie sint, quae cultae, aut alia ratione fuerint atatae.  
 nam simile ubique simile fingit, secundum naturam, et  
 eadem specie; si vero plurimum partium similitudo  
 sufficiat generi, multa effugient genus proprium, ut Ellebores  
 nigri non fuerint eiusdem generis cum albo; tota enim  
 in pluribus partibus

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facie differt: similia se habet Lactuca sylvestris cum domestica, praeterea quod eo modo investigantibus plantarum genera non erit manifestum, quo pacto superiora genera sine constituenda; quae enim in plurimis partibus similia sunt, proxime sunt speciebus ultimis. Quae igitur difficultates contingunt in plantarum tractatione huiusmodi sunt. Idcirco Dioscorides secundum eorum similitudines in medicina coniunxit, et distribuit. Theophrastus genera assumpsit vulgo nota, quae ab usum magna ex parte accepta sunt, alia à loco in Aquatica, Montana, et huiusmodi.

Cap. XIII p 26

Cum autem forarum similitudines, et dissimilitudines queramus, ex quibus constat plantarum substantia, non tantum eorum, quae accidunt ~~in~~ ipsis: accidentia enim potius inveniuntur cognata substantia. Idcirco neq; ex facultatibus medicatis, neq; ex aliis utriusque ratio ne, neq; ex locis, in quibus proveniant, aut aliis huiusmodi generis eorum, ex quibus sunt constituenda; Haec enim omnia accidentia sunt, sed substantiae ratio forte incognita est incognitis differentis ultimis; ut multi putant, Idcirco operari per accidentia circumscribere. At contra hanc sententiam disputatum est abunde in quaestionibus Peripateticis, illi differentias secundum formam et animam tantum colligi operari putantes, coguntur fateri omnes plantas unius speciei esse, cum unicum animae partem, quae vegetativa appellatur, orbitae sint omnes. At ostensum illud proque ex differentis formam constituentes etiam ex motu, quae illius gratia data est, colligi potest, si yctus in plantis indifferentes essent partes ad spectandum secundum illam animae partem praestandas, una esset omnium ~~et~~ plantarum species. Iam vero videmus

p 27

multis modis differre, idcirco in multas species, et genera  
 distinctis necesse est. Cum igitur omnis substantia earum ratio  
 à sua statetur; propter illam enim substantiae quoque  
 sunt, quae illis gratia habentur, videndum est in plantis,  
 quae similitudo et dissimilitudo in eis fuerit, quae primi  
 animae speciei gratia datae sunt, deinde quae secundi, et si quae  
 alia sequantur deinceps. Est autem primum vegetativae operis,  
 quod omnibus viventibus inest alimentum attractio, quo  
 nutrantur et crescunt. Partes autem huius gratiae datae  
 sunt radix et flos: ex huiusmodi igitur differentia prima  
 genera constituenda sunt: ut primum radices et flos ~~habent~~  
 nobiliori substantia, et duriori consistunt, quod lignum vocatur,  
 arborum sunt et fructus. Durorum vero tenuior et mollior  
 substantia est suffruticosa sunt et herbae: Petitur enim haec differentia  
 ex naturae similitudinem partium etiam plantas constiterunt cum.  
 Similiter etiam divisione absolute utraque generum subdividi  
 possunt: ut primum simplex flos generum suffruticosa;  
 et herbae, primum vero multiplex, fructus, cum et suffruticosa  
 sumpto ex numero differentia. Sed quoniam, suffruticosa et  
 herbae nomen vario modo accipitur, ut superius notavimus  
 clarius genera, si altera divisione neglecta neglecta, duo  
 autem genera constituamus cum arboribus coniungentes  
 fructus, et cum suffruticibus herbas. Praeterea ex propriis  
 radicibus differentia, et caulis singula genera summam  
 divisionem patiuntur. Ut si radix erecta arbor vel plura,  
 vel obliqua, vel gemulata, vel fibrosa, vel ~~arbor~~ obtunda,  
 alba, rufa, crocea et caetera huiusmodi; similitudo si  
 caulis rectus, aut obliquus, ~~humis~~ humi stratus, alena scandens,  
 concavus, gemulatus, aculeatus, crispus, levis, rotundus,  
 quadratus, in quibus omnibus et huiusmodi, abditis  
 etiam foliorum differentia suprema genera distinguuntur:  
 quatenus plantarum partes ad primi speciei functionem datae  
 sunt: sed ex his nequaquam de alii genera colliguntur, cum  
 haec ad partes secundi speciei spectant. Secundum autem

vegetari prout generare sibi simile, quod et  
 perfectione prout est, cuius gratia dati sunt sunt fructus  
 a parte ad fructificationem facientes; cum yter <sup>id est non</sup>  
 omnibus inest, sed perfectioribus, pro fructificatione  
 similitudine, et dissimilitudine <sup>potestis generis, tum i</sup>  
 genere arboris, tum i humiliori materia <sup>portense</sup> constetunde ~~est~~.  
 Sunt: Nihil autem refer sive nominata sunt generis  
 sive ~~non~~ innominata; non enim omnibus nomine  
 sunt imposita, sed iis magis, quae utilitatem aliquam  
 conspicuam hominibus afferunt, ut frumta, legumina;  
 quod si tertium aliquid esset vegetari prout, ex illo similiter, et  
 a partibus illi destinatis, tertium colligenda erunt partibus, qua  
 superiora generis in alia dividerentur. Sed generis  
 duobus praedictis absolvitur plantarum generis, de  
 idcirco in illis tantum versabatur generis cellationi  
 partibus. Et merito ex modo fructificandi multi  
 emisserunt plantarum generis. in nullis enim aliis partibus  
 tantam generis multitudinem in generalium <sup>saturis</sup>  
 melita ex, quanta in fructibus condensatis <sup>partibus</sup>

duemadmodum cum animalibus sensum, aut ~~motum~~  
 motum instrumentis plerisque et praecipue  
 differentes sortita sunt; ultra enim sensum et  
 motum alias operationes non habent; si plantae in  
 fructificatione, tanquam ultima perfectior <sup>inordinabilem</sup>  
 varietatem ostendunt, si similiter animae pars intellectiva  
 instrumentis uteretur: hominum generis ex illorum  
 differentia in multas species distributum esset. Quorum  
 vero intellectus, per quem homo est, nullo corpore utitur  
 instrumento, de quo naturae unicum speciem condidit  
 humanam; et si enim quidem Ethy spes sunt, quidam gigantes,  
 quidam monstruose aliqua forme, omnia  
 accidentia sunt; non enim quae homines sunt different,  
 secundum partem scilicet intellectui ~~sunt~~ servantur: idem  
 in quibusdam plantis inspicere licet quae specie differre videntur,  
 (21)

quarum tamen differentia accidentia sunt. sed quo pacto distinguenda haec sunt, ab his quae substantiam constituunt, inferri poterit. Eritamur ytem ex propriis, sive fructificationis partibus data sunt, plantarum genera investigare, tum in arboribus, tum in frutibus, et reliquis humilibus.

Cy. XIII p 29

7<sup>o</sup> l<sup>o</sup> f. tips, pre

Quaedam tandem semen perfectum ferunt, quod genus cum multam habeat latitudinem, id primo loco partemur, continet enim plantas perfectas. Cum ad agnoscendum constitutionem tria maxime faciunt, scilicet partium numerus, situs, et figura (magnitudo enim non videtur speciem agni immutare, nisi simul figuram immutet; Solutio autem continui, aut unio ad numerum partium est; durities, mollities, color, et reliqua quaedam ad similes partes referuntur) notata secundum Merum differentia in frutibus condendis multis modis suscipi, ex quibus variis plantarum genera constituta sunt.

(leg. in 16 p 4)

nam primum, cum flos et flori tegmen extimium in fructus involucrum, aut sub uno flore unum semen condedit, ut Amygdala, vel unum seminis receptaculum, ut Rosa, aut duo semina, ut turulacea, vel duo seminum receptacula, ut Nasturtium, aut terna eadem ut Tiliamatorum, genus tamen semine, Bulbacea tamen conceptaculo aut partem, ut Marubium proterius semine, Siler quatuor conceptacula, aut plura ut Acoracea, et Scianacea plura semina, Pinus plura seminis conceptacula: Deinde seminis situs in suo conceptaculo, vel in sede, aut eo modo est, ut eius cor exterioris spectet vel interioris. Similita deinde flori considerandum: nam aut exterioris summis frutibus insidet, aut inferiori circa seminis fructus exiit. In omnibus autem dictis consideranda est ultima figura tum seminum tum conceptaculorum tum florum: Amplius fructuum sedes, mollities, durities

Trans 1520  
Then my to me seed ~~boxes~~ or flower of. (1521)  
Amygdales; in ~~conceptacle~~ receptacle 7 seeds  
Do flower of. Rosa; 2 seeds of. Umbellifer;  
two seed receptacles of. Nasturtium; 3 seeds of.  
Erythraea; 3 ~~consp~~ receptacles of. Bulbar plant





De IV Cap. XLIX p 175

Solum semen est = Iulii seculi maxime nascens, cum  
 praecipue hyems aquum fuerit, quoniam ex Iulii putredine fiat

p 353  
 Vitem offendit odore, ut eius semen purpurum  
 refrigerat.  
 [Chyton Brunia]  
 plus  
 abbas

tu plus

Fr. Demysius Constantianus facultatem  
 imprimendi concedit. Die 27. Septembris.  
 MDLXXXI. Florentiae Ex aedibus Georgii  
 Marsicelli. MDLXXXIII

p 565 Pl. 15. Cap. VIII

Istus Aegypti... describit pulcherrime  
 Theophrastus

p(2)

There is no essential difference  
between the natural & artificial.  
[I think he means "artificial" - all.]

Analysis of the argument for analogy

Broad sees that no natural sense  
exists. He is a some times as if he were also today.  
(I suppose Broad and my books perhaps don't  
need a helms sense since the ~~voluntarism~~  
submissor professors he give and  
and like a general - eye !)



Ap 120

SIR HENRY WOTTON

AMBASSADOR AND POET

FROM A CORRESPONDENT

The tercentenary of the death, on December 5, 1639, of Sir Henry Wotton, Ambassador, poet, and Provost of Eton, deserves to be remembered even in wartime, if only because his wit, his scholarship, his courtesy and his piety are the very qualities that Englishmen are fighting to preserve among their countrymen to-day.

From the Hall at Bocton Malherbe, in Kent, where he was born in 1568, he derived "the simplicity of a plain Kentish man." When, as a boy of five, he saw his father's house honoured by a visit from Queen Elizabeth, Bocton gave him something more—a first insight into the life of the Court. Winchester and Oxford stimulated a desire for a career in diplomacy. At Oxford, so Izaak Walton tells us, the great Alberico Gentili "would have breathed all his excellent knowledge, both of mathematics and law, into the breast of his dear Harry"; and though (as Walton tactfully adds) "he was not able to do that," he did help his young friend to acquire a mastery of Italian.

Five years of travel saw the beginning of a long series of letters which, under the editorship of Mr. Logan Pearsall Smith, has become an indispensable quarry to every student of the seventeenth century. In 1596 Wotton was appointed one of the secretaries of the Earl of Essex, and with his friend John Donne stood on the deck of Essex's ship, the *Ark Royal*, during the famous attack on Cadiz. In 1600, anticipating the catastrophe that was about to overwhelm his master, he fled to Italy and, finding favour with the Grand Duke of Tuscany, had the good fortune to be sent on a secret mission to King James VI of Scotland, which proved the turning point in his career. Pretending to be an Italian called Ottavio Baldi, Wotton journeyed to King James at Dunfermline by way of Germany and Denmark, and there delivered a warning of a Catholic plot against his life, together with a casket of antidotes to poison specially prepared by the Duke. "Which when the King had graciously received," in the words of Izaak Walton, "Ottavio Baldi steps to the table and whispers to the King in his own language that he was an Englishman."

The effect of this dramatic disclosure was not lost on the King, who henceforth had a friendly feeling for "Ottavio Baldi," which he publicly expressed when he ascended the English throne by knight-ing him and appointing him his Ambassador in Venice. There Wotton's dignity and eloquence made a profound impression, while his witty and informative dispatches brought him equal favour in London. His reputation at Court survived even the publication of an indiscreet epigram, written in the album of a friend many years before: "An Ambassador is an honest man sent to lie abroad for the good of his country," though he remained in a state of semi-disgrace because of it until his second Embassy to Venice (1616-19) and a special mission to the Emperor Ferdinand in 1620.

No one who reads Wotton's scholarly letters from Vienna at that time (when he was trying in vain to prevent the general European conflagration of the Thirty Years' War) and compares them with Sir Nevile Henderson's messages from Berlin in 1939, can fail to be struck by the great and continuing tradition of English diplomacy which they represent. Human nature has changed little in 300 years, and the two ambassadors found themselves faced with very similar manifestations of the Teuton spirit; sometimes the parallels of thought and style in their dispatches are remarkable. We can scarcely believe that it is not Wotton who remarks, of the ladies in Göring's tapestries, that "they look at least pacific, but that he fails to see Patience among them," or that it is not Sir Nevile Henderson, writing of the Emperor's army in some medieval Siegfried Line, who says: "If it be as wet weather there as it hath been lately here, they will swim shortly in their trenches."

After a third period as Ambassador in Venice in 1621-23, Sir Henry Wotton retired from diplomacy and was appointed Provost of Eton. He found himself a poor man—"much like those seal fishes," as he wrote to the Duke of Buckingham, "which sometimes, oversleeping themselves in an ebbing water, feel nothing about them but a dry shore when they awake"—and he had so little ready money that the Fellows of Eton had to furnish the bare walls of his lodging. But the new post was all that he had ever desired; he had leisure for angling with Izaak Walton, and for the composition of the most interesting of all his prose works, the "Elements of Architecture," with its stately opening: "Wel-building hath three Conditions, *Commodity, Firmness, and Delight*." A few years later he took holy orders, and at Eton his busy life found a quiet and dignified ending.

In all this long life Wotton wrote barely a dozen poems, but he left behind him the creed of the liberty-loving Englishman of his time—and of to-day:—

How happy is he born and taught,  
That serveth not another will;  
Whose Armour is his honest thought,  
And simple truth his utmost Skill.

This man is freed from servile bands  
Of hope to rise, or fear to fall;  
Lord of himself, though not of Lands,  
And having nothing, yet hath all.

"OLD AND TRUE"—LXXIV

At Siena I was tabled in the house of one Alberto Scipioni, an old Roman courtier in dangerous times; having been steward to the Duca di Pagliano, who with all his family were strangled, save only this man that escaped by foresight of the tempest. With him I had often much chat of those affairs, into which he took pleasure to look back from his native harbour; and, at my departure toward Rome (which had been the centre of his experience), I had won confidence enough to beg his advice how I might carry myself securely there without offence of others or of mine own conscience. "Signor Arrigo mio," says he, "I pensieri stretti ed il viso sciolto will go safely over the whole world."—SIR HENRY WOTTON; died December 5, 1639.

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