The Use Vergil Makes of Book 1 of Varro’s De re Rustica

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Subject and general nature of the two works.

Varro's treatise on Agriculture was a paper
work written when the author was eighty-five, addressed
to his wife Fundania. 'Velleius, I have
bought a farm,' he writes, 'which you wish to make
fruitful by cultivating it well and you ask that I
take care of it. I will try. And not only will I try to
advise you while I live, but what should be done, but
even after my death.' Varro says he came into the
temple of Vesta at the next time festival being invited
by the brazier. There he met a number of
friends who had also been invited. As the serv-
rice had not yet come, they sat down to wait for
him. Their conversation about Agriculture forms
the first book of the "De Re Rustica".

The work as a whole consists of three
books: the first about the cultivation of the fields, the
second about cattle and the third, "Treatise of The
provisions or moderate luxuries which a plain farm
may know, as poultry, fish and game."

Varro's treatise was published just before Virgil began
to write his poems. He appears to have made very
little use of the first book of Varro, but from the
second he borrowed a part of the precepts which he gives in his Third and Fourth "Georgics."

Our editor says nearly all that is didactic in these
books.

The Terminus consists of four books.
The first, treating of the cultivation of the fields;
the second, the training of vines; the third, the care
of cattle and the fourth, the Reaping of Bars. Thus we see the first, does not touch upon the things treated in various third-book written is much more made of the first book. But from the second, as has been said, he obtained nearly all his didactic points given in his third Georgie.

The spirit and style of the two works however are entirely different. Virgil desired nothing more in his work on farming than that it should give full and accurate information in regard to questions which might come up in connection with the farm, that it might be a work, as he himself says, to which his wife and others might refer whenever they might be in doubt as to how or when anything should be done. It is therefore written in a very systematic and concise form without digression or flourish.

It is plain that Virgil too was really interested in the practical details of agriculture and his knowledge was gained not only from books but also from his own actual experience of country life. That the Georgies was truly valuable as a guide for farmers is shown by the fact that the fourth was afterwards referred to by both Pliny and Colinvaux as a standard work. Virgil, however, went much further than this. The Georgies, besides being of value for the information it gives, is also a great work of art. Virgil himself speaks of himself as singing the songs of a poet through the Roman times and there are many dark allusions in the
of the poem, which show his love for country life and nature. Thus too the patriotic spirit furthers much inspiration to the poem as is shown by the extravagant flattery of Augustus with which the Georgics open, where Virgil speaks among other things of the serpent drawing back his claws to make room for the emperor during the constellations. Also by the praise of Italy and its great men, the deities, Mani, the great Camilla, and Scipio, and by the tribute to Cenoa at the opening of the Third Georgic, his patriotic spirit is revealed.

Invocation, Proc. 75-42 Varro 1.

Virgil's invocation contains four of the deities invoked by Varro: the Sun, Moon, Bacchus and Ceres. Varro very distinctly invokes them as separate deities. In the second place I invoke the Sun and Moon whose seasons are observed wherever anything is planted. In the third place, Ceres and Bacchus because their fruits are especially necessary for food. Virgil says: "You brightest lights of the world that guide the yoke unseathed course through bravery: garden lips and kindly corn"
it was by your bounty that the earth changed
the name of Chaonia for the plain, will surround
one race and found the grape which with to tender,
her fruitful and bountiful. Some contend that "fibres
in a kindred" in an aftertime to I. clavis die unde
luminis" and that Vergil intended to call upon
Bacchus as the sun and the moon as Ceres. Al-
though there are good arguments on both sides, I
believe those against the opposition Venus are the
stronger and that Vergil probably followed Vano in
invoking those deities.

The explication is natural in giving
such a long list of deities and is paralleled in 616.

The balance of the passage is destroyed if they are
identified, for in giving each deity the poet gives the
reason for which they are invoked. The sun and moon
because they bring the seasons, Bacchus and Ceres,
because they give corn and wine. Lastly, though
Bacchus is sometimes identified with the sun, Ceres
must be with the moon. So I think it is more
natural not to make them in opposition and as
has been said think that Vergil probably followed
Vano in invoking these deities, although he does
not make use of many of the other gods which Vano
invokes.

Vergil's use of Vano in his treatment of
plowing. Verg. 43-47. 208-211 Vano chap. 27, 29, 29.
Vergil's statements in regard to plow-
ing omitting the disputed lines 47-49, are clear-
ough. 43-46. In early spring begin to plow.
425. 30-63. Before you plow an unknown field learn all about its characteristics and what it will produce. 03-70. Come then if the land is rich, plow in the spring and summer. But if it is not rich, it will be sufficient to turn up the soil lightly in September. 01-83. Following and rotating are both good for the fields. 84-99. Burning stubble is good; so is crossplowing. 208-211. When the balance makes the hours equal for day and sleep, cover harrow with the iron and harrow in the fields for the sake of winter. "Vasque sub esthume terrae intraccula lucerne." So we see that Virgil names three plowings. The first in early spring, a cross plowing in summer, and a plowing in between the seed (cereal tares) which was down from the autumnal equinox (Sept 21 to "femur" Dec 21).

Virgil's views in regard to plowing. Chap. XXI, he says in telling what should be done in the different seasons. In the spring we ought to plow the land. Writers should you plant less than twice, three times is better.

Chap. XXI. 2. Terrae cum primo avart, proculindus supplicant, cum dimine, offringser dicunt. Good prima aratior glebar, grandia solent excitare. In ticus cum avart jacto arando tares tiris dicuntur.

Id est cum tebe reddi additum ad concurrens simul et sole vis cunctum aratum. in posita et pulcant quo pluvia aqua dilatata.

Sedens inter alio in terrae argumin- octium et virginiarm ex tunc ---- bove terrae
provinciae. Quinto intervallo, intus solstitiae et
curricular, anterior ad solis, quae eo fornicatione
finit, quae calidior tum acutae. De provinciae
spring. Shorter, id istum aut franguntur glabris.
Quinto intervallo, intus curricular et arquicosti
autumnale shortet — — — arata offringi.
Posto intervallo ab arquicosti autumnalibus in ipser,
seitum oportere arrire usque ad die non-
gressum unum, post sibirianum nisi quae
inversa causa corripit non serme.

As Verso, as I interpret these passages,
clearly given there plantings including the seed planting
as the maximum. The first, between March 21st
and the end of spring. The second, between June
21st and August, if possible, for the earth is more
favorable, the warmer it is when planted. As if
you have already planted for the first time crossflow
now. But if you do not crossflow in the autumn,
it should plant in the future interval between
the 21st Aug. and the 21st Dec. From the arquicostal
autumnus to winter, Sept 21 to the 21st Dec.
flow in the seed by the operation called "liraei".

The thought of the two authors so far
is precisely the same. Their language and form
of expression do not correspond—except that Virgil
does use "provinciae" line 47, for the first planting and
"brima" 211 for the time when the sowing should be
completed. How could it be reasonably expected
that it would, the one being a prose writer, the other
a poet, and their purposes and motions being so
very different.

Omitting lines 47-49 we have seen that their views are the same. Now is it not reasonable to suppose that these lines agree with the rest of Voss's treatment, and that if possible they too refer to two plowings?

Four different interpretations have been given for these lines, all of which, outside of the context in which they occur are possible meanings.

I. Two plowings. Parnell is the only commentator who gives this interpretation. He says: Twice felt the heat and twice the cold means that it has twice felt the heat of the day and the cold of night.

Through which he shows the double plowing in the spring and autumn.

II. There were two four plowings. Thomsen.

1) Spring, summer, autumn, and the return of the previous year. 2) Spring, summer, and two autumn plowings.

III. (4) The land should lie fallow two years and then feel the heat of two plowings in spring and the cold of two autumnal plowings. This Vossy will not stand at all. According to it the land is only plowed twice a year and besides it drags in the two years of following in which there is positively no seed.

Although the first of the four plowing Thomsen is the commonly accepted views, it is the most unsatisfactory and has the least support of any of the three remaining views. In the first place the context itself will not possibly admit this interpretation.
Not a word in said about an autumn plowing in the previous year. On the other hand, Virgil says very emphatically to begin the plowing in the spring. As for the authorities in agriculture, we can conclude Thucydides is the only one among both Greek and Roman who says anything about an autumn plowing in the previous year. Thucydides, the Censor,Plant. IV. 94. The cultivation of the fallow-lands should be in both seasons, the warm and cold in order that the land may fill the cold and heat. He may say x ετερωταγε. When after the first ploughing they fallow the land, again in the spring they turn it up, turn it in the summer, and when they set about to sow they plow it again. It is true Virgil does seem to have his expression “his quae solines, his frigora siccum” from Thucydides x ετερωταγε. He may have borrowed this form of expression from the Greek author with whom he was familiar, as a pretty poetical way of expressing his own thought, that it is entirely different from that conveyed by the Greek. Doubly it is altogether unreasonable to contend that Virgil like Thucydides intended to give a plowing in various autumns when the interpretation is entirely out of harmony with the context, and with both Greek and Greek practice. Now we have to decide between the two plowing terms and the other of the four plowing-those in spring, summer, and two autumn plowings. It has already been shown that two plowings fit into the context perfectly. The only ground
for adopting four plowings would be that the Roman and Greek custom— for we know that Virgil was very familiar with the Greek writers— was to plow more than twice, and that it was so well established that Virgil could not refer to only two plowings.

The Roman writers before Virgil have been discussed, also one of the Greek writers, Theophrastus, who is the only one of all the Greeks who gives four plowings. Aristotle, Theophrastus, and Herod all mention only three. Herod, the most important, it seems to me if the Greek writers, for we know that from him Virgil took the model for his Georgics and from him borrowed much of the ground work for his Dorychus. recommended two plowings— in the spring and summer. In the spring turn up the soil and the ground till; a fresh in the summer will not mar your hopes. Herod ‘Ep. 4’. 138.

So we see four plowings was not the custom among the Greeks and hence if it had been, Virgil would not probably have set aside Roman authorities and followed the Greeks in such a practical point.

Now taking up the writers who came after Virgil, the first Columella, gives three plowings, and the seed plowing for rich fields. Col. II 498. The first, about the 1st of April, second about the 21st of June, and again, about the 10th of September. In fact, the ending is to be done.

Pliny, who came next, in his time after Virgil gives two plowings as the rule. After the furrows have been gone over again three times
The cloes are broken with the harrow or rake, and
this operation is repeated after the seed is put in
but instead of using the harrow, the seed may
be covered by the operation called "barece." This is
the general statement and then he adds - "it is
well to plow five times as is done in parts of Italy,
and some nine times as they do in Etruria.

Then there is another Roman
writer Palladius, but he does not count as a
separate authority, as he wrote about four centuries
after Virgil, and followed Columella very closely.

Between these three Roman writers
whom we have discussed, two of whom - Columella
and Cling - came after Virgil, and our Varus, before
there is so little difference in point of time that
it does not seem possible that Roman custom
could have changed. So we have two writers, Varus
and Cling against our Columella giving two plow-
ings, as the rule, and that I take it was the custom
in Virgil's time. Thus we see that the custom al-
most demands two plowings and that Roman
custom favors it. Do I think that Lucrece

"illa se conduce quotas respicere avari,
Agricola, bis quae solet, hic figura sequit.
Hinc immensus repentin tergo viribus."

agree with the rest of the passage and that Virgil
means to say that the land is to be plowed in the
spring and summer, and so twice feel the heat
of the day and twice the cold of the night. Thus
the follows Varus precisely in the matter of plowing.
recommending the first sowing in the spring, the second in summer, and a sowing of the seed which was to be sown between Dec. 21 and Dec. 21. Following and Rotation. I am ever averse to rotation, planting arable in a different season where you have taken the luxuriant beauce or wheat or lupins with brittle stems. Varr. also expresses the same thought when he says: "As it is important whether you should sow on land that is planted yearly called restiolis or in fallow land which sometimes rests (urva actua). In Clytiea they say they plant grasses but as that grass thistle they produce most abundant crops. (Sicinio) Also ought to let the fields rest every other year or else sow with lighter crops which exhaust the land least."

It was a common custom among the Romans and one that is given by almost all the writers on agriculture, to plant in such things as beans, vetches, and lupins to enrich the soil. And Varr. is evidently what Virgil means. Varr. expresses the same thought: "Some things must be sown not for immediate use but looking forward to the future — cutting thyme and bravilia now so as to make the ground better.

Thus the lupins is sometimes planted in before its seeds begin to ripen, and sometimes beans before the pods are ready to be gathered for food, an accustomed to be sowed in for manure.
I judge it very likely that Virgil took these receipts in regard to Fallowing and Rotating from Varro.


Virgil says he will have a good crop
who in the dry praeuna irrigates his land. He too, who
draws off the moisture of the land where it is
too moist.

In speaking of some of the
things that are necessary as a persuasion for sowing
the seed, Varro says it a place is not moist but must be
irrigated at the proper season. Then in telling the things
that should be done in the different intervals, he the
right interval the water should be drawn from the
fields if they are too wet. Also in the third interval if
after the hay is cut the meadows are not moist, irrigate
them.

The first precept to water the land,
Virgil expresses thus: "What shall I say of him who
follows up the fields after the seed has been sown
and breaks up the ridges of Varro and, then,trade
down in the creek the water and the obdient streams
and with the parched fields burns with drying grass.
behold he enters the water from the slope of the
channelled slope. Poes! it roars from Numenius
along the smooth stones, alloying the dew
strokes ground as it bubbles on.

This is evidently imitated from a passage
in the Iliad XXI 257-79.

As when the peasant to his garden,
Soft rills of water from the bubbling springs
And calls the floods from high to bless his browes.
And fed with fragrant plumes the plant and flowers,

Now as he classed whither their passage stayed
And marked their future current with the shade,
Swift on the rolling pebbles, down the hills,
Before him scattering they prevent his plains;
And shine in many wanderings or the plains.

The resemblance in the thought and

manner of expression are too apparent in these
lines to mistake Virgil's source. While in the
absence of any likeness in connection of thought
or in expression, between Varro and Virgil it is very probable that
the poet gave both the advice in regard to irrigation and drawing off the
water, independent of the "de Re Rustica".


Varro divides the tools which a farmer

needs into three classes: first, vocal; second, semivocal or oxe and third
mute as wagons, and third, discuss each divi-

sion separately. Virgil's treatment only covers the

third division of Varro. He only names what

Varro calls the mute instruments. Here again

Virgil writes gives a full treatment of the sub-
ject. Both Chaucer the farner, Virgil at the

end of his discussion, and Varro at the beginning,
to prepare his instruments beforehand. Varro

only names those things that can be made by

the farmers. First those things which are made
"et simulibus et materia rustica" as different

kinds of baskets, the threshing sledge (tribula)
stages, and core (vastitums). New these things that
are made from hanks, flat, rude, and fabrics,
rocks, cords, and mats. He then discusses the
subject by saying: "There are many other different
kinds of instruments which must be bought,
the number varying with the size of the field.
and giving the number of instruments needed
for two hundred and forty acres of olive land and
two hundred acres of brick land.

Virgil arranges to include in 165 E-
virga practica, celci vilique suppliebrax, besides
the arbusta hammers and mystic fan of Bacchus,
which he mentions, the things said by Varro to
have been made "vinimineus et rustica ma-
teria", different kinds of baskets and es et piscium.
In the 2665. also in speaking of what may be done
in rainy weather he says, the "piscina" may be
made from the plant twig. But he does not
include as Varro does, the threshing sledges
and hoes (tribula et rata) for they have been
given before. Virgil also names obaque, drag
and flans and gives a description of the pitch.

The description of the pitch covers from 1655
457. It may be possible that Virgil had Varro in
mind in the rest of the passage but the similarity
is so slight that I should say no use had been
made of Varro in this instance.


Among this more memorable passages, Virgil
gives directions in regard to the threshing floor.
It should be smoothed with a large roller.
Kneaded with the hand and made solid with tenacious chalk that winds may not creep into it, and that it may not be covered by the dust which makes holes and then all kinds of plagues make sport of it. Often the small mouse sets up its home and builds granaries under the ground or the blind mole dig its hiding place or loads are found in the hollows and many other monsters which the earth produces and the wind, and ant facing old age ravage a large heap of corn.

Thus—The threshing floor should be in a high place where the wind may blow through it. The sign should be in accordance with the sign of the cap. It should be round and raised a little in the middle so that if it rains the water may not stand in it and may flow out by the shortest way. It should be paved with solid earth and if possible with white clay (argilla) that it may not become full of thick putrid dust, hide the grain and receive water thus opening up mouths for mice and ants. Some ants accustomed to sprinkle it with oil for it is poisonous to ants and moles.

Virgil says nothing about the situation, size and shape of the threshing floor, but still implies the fact that it is to be made solid. Virgil says with chalk (creta), Varro with white clay (argilla) and both in the same reason but the threshing floor coated with chalk—once again they do not near the same work. Virgil "pudiculis", Varro "aratus"—should be
Injured by rats, mice, or mice, Virgil also
mention the three, worms, and toads.

Cato too gives directions for the washing
floor. Cato 91-122? Dig the earth a little, spread
it well with oil so that it may be well soaked.
Beat it to powder and smooth it with a rolling
stone or a rammer. When it is smooth, the dust
will not be troublesome, and when it rains it will
not become muddy. Cato S4 says the same thing
in substance except that Cato adds here, "neither
will grass grow on it after it is rolled smooth."

After examining all three passages
it seems more probable that Virgil made use of
both Varro and Cato, for, in his directions that
the floor is to be made solid with chalk so that it
may not become holes, is very suggestive of
Varro. While the fact that he says to make it smooth
with a large roller and the mention of worms
creeping in seems to come from Cato.

Virgil in his brief treatise of the
times for sowing does not seem to have followed Varro
except in his general statement, as to this time for fall
sowing. As this also authors give exactly the same
time, Virgil expresses it in these words: "When the
Balance has made the hours equal between day and
time, and黑夜 and daylight, exercise the toil, farmers,
sow barley in the fields until the beginning of the winter rain."
with winter as at the Autumnal equinox on the 21st of Sept. 21st to the 21st. I think it likely that Virgil formed this general statement as to the time for sowing from Varro, but in what follows while he gave the time for sowing various things he does not seem to have used Varro. Neither of the two writers give a full treatment of the times for sowing, but each mention a few things while should be sown at stated times. Each gives some things which the other does not mention, and where they both give the same things they do not always agree exactly as to the time for sowing them. Virgil says, "brass" (faba) should be sown in the spring except the cheap lining bean (Vicia faba) which is sown at the setting of Bootes. Varro says, "brass" (faba) used the sands and should be sown at the setting of Cancer in November. Virgil and Varro according to Virgil are sown from the setting of Bootes Nov. 1st to the middle of the frosty season. Varro says from June 21st to the beginning of August.

Lucky and Unlucky Days of the Lunar Months.

Virgil and Varro's treatment of the lucky and unlucky days are entirely different. Virgil's discussion is brief, only three days being mentioned as all for good or evil. The sixth is bad, the seventeenth good, the ninth is good for runaway, but not for thieves.
Varro says the lunar days too must be observed. They are divided into two parts because the moon increases from the new moon to the full and then decreases to the new moon. Certain things should be done in the fields when it is increasing rather than when it is growing old. And on the other hand some things should be done when it is decreasing rather than increasing. For example, if sheep and goats are sheared when the moon is increasing care should be taken that they are not entirely bare.

Adaptability and nature of soils.

Varro first treats of the adaptability of soils in connection with his discussion of plowing. He says: "Before you plow you should learn the traditional culture and nature of the places what each regime produces and what it refuses. Here grain, olive grapes grow more abundantly, elsewhere trees and grass grow unbidden. As Virgils says of Saffron fragrance, the rose Culchaia in, Portus carthus, Cypress bore, distillation of a connection with the nature of the soil. Varro says: It is important what things can be sown and grow in a field, for all things cannot grow well in the same field. For our place is suited for wine, another for grain so in regard to other places our is best suited for our thing another for another. After these general statements both writers give examples of counties and the things they produce. The Places they men-
invention are in no case the cause, and the purpose of the two authors in giving them is not the same. 

Vano through the whole passage seems to have been formed, not by nature, but by Virgil the thought that some things are better in certain places than others. As in examples, to prove this statement, are of some extraordinary nature of the products of different lands. The fact that in Cete the plants do not lose their leaves, at Elephantine, neither the figs nor the vines lose their leaves; nor in winter, prove that these places are especially adapted for raising these things. For the same reason, the fact that some plants are more adapted for producing certain things than others—many things are. Some things—vines at Gamma, the apple in the Eumolpid island. For the same reason some things cannot live except in damp places or in water, and some there in a particular kind of water. In Trasalpina, land there are places where the ground is covered with white chalk, and nothing will grow. Virgil's examples simply show that different countries have different products. Involves side by side the coffee fragrance, the naked Chaldean, the Pontic castrum, Epean house. As the highest in the two passages is not exactly the same, as has been said the connection in which the discussion occurs in the two works is not the same, rather in there any trace of similarity between the two in the work of Hesiod as that Virgil was not influenced at all by Dares. In Dares II 19, 135 the poet expresses the same thought as that he has just been
speaking of the propagation of bees and so all of his examples are of trees, and where the different kinds grow best. There is nothing in Varrò to correspond with this passage.

Both writers treat of the nature of the different soils, but there does not seem to be much similarity in their treatment. Varrò discusses Chapter 7 in which fuller and more systematic than Virgilius, in giving the different kinds of soil he red, yellow, black, chalky, clayey, etc. The next division he makes is moist, dry, and intermediate. Wheat is best suited for moist land, barley for dry. Ruddy land is divided according to color into white, yellow, and reddish. The white is not good for crops, the red is. Soils are again divided into rich, shallow, and intermediate. In the shallow soil the meadows are parched and mossy, the trees stunted, the vines unfruitful. In a rich land you can see grain crops every year and everything without moos. The intermediate if it inclines toward the rich soil is better for all things, than if it inclines to the poor.

Virgilius treatment is rather brief—only five kinds of soils in all being summered. First, stubby lands and meagrely hills where mud and gravel nourish thistles, are suitable for olive. Second, a rich and moist slope exposed to the south is suitable for vines. Varrò also implies that vines should have a rich soil when he says that they are unfruitful in a shallow land.

Third, land like that of Mentana or Martina
in good for grazing. Fusc, black, rich crumbling soil or land from which timber has been cut is good for grain. Varrus also recommends rich soil for grain. Fusc, a thin gravelly soil may supply "basis and dew for bees. Lufa, and chalk show pass all lands in supplying food for snakes.

The two instances already mentioned where both authors give rich land as suitable for both grain and vines, are the only cases where the two passages correspond at all and in these places Virgil does not seem to have followed Varrus for vinedas advising that the land should be rich for grain: he says it should be dark and crumbling or land from which timber has been cut. For vines besides rich soil he also says that they should be planted on a moist slope which faces the south.

So we see that Virgil in his discussion of the nature of the soil also made no use of Varrus's treatment of the same subject.

To distinguish soils Virgil 2.25.258 Varrus.

Varrus simply gives the statement that you can tell whether fields are suitable for cultivation or not from the soil itself by observing whether the land is white, black, light, whether it breaks easily when dug up, whether it is sandy or very firm. Then too you can tell its nature from the things it produces by observing whether wild things are abundant and whether it is productive of those things which ought to grow from it. Virgil tells just how you can tell each kind giving every quality of soil mentioned by Varrus.
and adding besides these, a cold and limy soil. We also agree in this connection says something about the altitude of each kind of land. You can tell by the eye which soil is black and the color of each. Whether a soil is heavy or light, can be told by the weight. In accordance to Varro's third point— you can tell whether a soil is suitable for cultivation by observing whether it breaks easily when dug up. Virgil says: If the soil sticks to your fingers and does not crumble when handled, it is rich. You may know whether the land is loose or very stiff by digging a pit and then standing the little into it again. If there is not enough to fill the hole, the soil is loose, if more than enough, stiffer.

If the land produces large words, and if the crops are too uniform, the soil is very moist.

These are not taken up in the same order in which Varro gives them and I should not say there was sufficient resemblance here to indicate that any use had been made of Varro.


Virgil divides the methods of propagation into two classes: natural and artificial. The natural methods are divided into three classes. First, those that spring up without the help of man of their own accord (nika sponte), and spread widely, e.g., the plains and winding rivers, like the oaks, poplar and willow grounds. Second, those that spring up from seed, dropped like the elizabeth and oaks. Third, those that come from suckers.
Varro does not distinguish natural and artificial methods but divided the methods of propagation into four main divisions. The first, second, the transplanting of live roots from the earth into the earth; third those that are taken from the trees and are planted in the ground; fourth, grafting.

The first main division, seed, is divided into two divisions: the seed that is hidden from our senses, and that which is clear to our senses, or as Varro expresses it in another place, those that spring up before they are sown without the aid of the fowlers and those that are sown and sown before they spring up. The first kind, those that are hidden from our senses I think corresponds exactly to Virgil’s first division. In this class Varro says is included those seeds, if there be such, which are in the air or anagamous, and those that the mater is accustomed to carry into the fields as Philostratus writs. This as I have said is what Virgil probably means by his first class when he says: "Those that spring up without the help of man or their own agents and spread widely over the plains and winding rivers."

Virgil’s second class, those that spring up from seed dropped, evidently, do not refer to the springing up but simply to the dropping of the seeds from the trees. Varro does not give this as a separate division. He probably thought of them as included in his first class.

Virgil says nothing about the springing of seed.
by hand. In this connection Varro cautions the farmer to choose his seed carefully, care being taken that they are not old, that they are not mixed, and that they are genuine. Age sometimes changes the nature of a seed. For from an old cabbage seed, turnip, or turnip, spring up, and likewise from old turnip seeds, cabbage.

Virgil gives six methods of artificial propagation, two of which, the planting of branches, left in four parts, and stumps kepplered at the end, and the planting of pieces of the trunk are not given by Varro. The other four Varro also gives: transplantation of suckers, layers, cutting, and grafting. After simply naming the different methods Virgil returns and discourses each briefly. The tree that grow up of their own accord are unfruitful so are those coming from suckers. Those that spring up from branches, dropped seeds, grown slowly, but tall may be improved by cultivation.

In taking up the artificial methods Kegres he names the method which may most profitably be used with the different kinds of fruits. Ulives grow best from trunks, vines from layers, apples from suckers.

When, as the dextus, shoot out, and place growing best from grafting. The last describes inoculation which he says is not the power as grafting. When the buds sprout from the middle of the bark, and burst the thin coats, Varro they introduce a bud from a strange tree. Varro does not give any of these particulars which Virgil does. In naming the different methods of propagation he tells which
each should be done. In dry rocky places suckers should be transplanted in the spring time. In rich land in the autumn. Suckers should be cut from the old tree or vine before they begin to bud or bloom. Cuttings should be made from the tender branch equally on all sides and about a foot long. In grafting you should be careful on what tree you graft. For example the oak does not receive the pear although it does the apple. Neither should you graft too many things on one tree. Then he gives a neat method of grafting which he says has just been discovered in the case of trees that all grow each other. The branch is cut and split, and then drawn over to the branch of the other tree. Where they touch, it is smoothed down on all sides with a knife so that from the side that faces toward the sky it is curled down back with back. The next year when the branch shall have grown into the tree into which it is propagated it is cut from the tree from which the propagating tree was made. Water is not good for fresh grafting for it makes the tender shoots rot. So the best thing is in the autumn at the sign of the horse.

A little vessel of some kind should be fastened over those slips that have less tendril in nature that the water may drip slowly down and moisten it that it may not dry out. The bark of the slip must be pierced whole and so sharpened so as not to expose the marrow. That shown may not have these fumes without nor too much heat it should be covered with clay and bound with bark. The vine should be cut three slips before it is grafted so that if there is too much moisture in it it may flow out before it is grafted. Or a place may
be cut in the tree in which you graft, a little below the place where they suggest where the moisture can flow out. In the same hand the fig and Panicable while are dry by nature are grafted immediately.

In some cases, as in figs the dip should have about an inch. Here we see that Varo gives a great many details which Virgil does not use and Virgil gives several not found in Varo. Neither are the main divisions of the subject as a whole the same.

Virgil discusses brass great similarity to Theophrastus' treatment of propagation. Theophr. pl. II. 2. "The generation of these wild plants in general is either spontaneous or by seed or by root or by suckers or by cuttings of the young shoots, or by layers or slips by cutting the stock into small pieces for that may also a plant will grow. Among these the spontaneous generation seems to be the principal; and those that are by seed and root appear the most natural; for they are in a manner spontaneous and therefore suit with wild plants whereas the rest are procured by the art and industry of man."

Without doubt Theophrastes was at least one of the sources of Virgil's information on this point and from the lack of any specific traces of similarity between Varo and Virgil we may safely say that this poet was not influenced by Varo in this case.

Method of Planting vines. Song I. 272-279 Varo.

Virgil advises the farmer thus in regard to the planting of vines: If you plant on hills, plant them in rows and first. And when you plant on the
plain; let all the paths agree with each other when the trees are planted, just as when a long legion has arranged its cohorts for battle and the lines stand drawn up in the open plain. Let all be laid out in equal and regular arrays, not only that the view may please the idle mind but because no other way will the earth give equal strength to all and enable the branches to spread into the air."

I believe that Virgil means to recommend here the quincunx order as the best for planting vines. This was the customary order, as is shown by Varro, Censor, and Columella, all of whom say distinctly that the trees should be planted in the form of the quincunx. One of the objections to this interpretation of Virgil is that this way of drawing up the army had vanished before Virgil's time. This does not have much weight however, for Virgil could very easily adopt a comparison made while the old arrangement of the army still existed. Censorinus also implies this view on the ground that "quadriuult 278", and the 28th legion, which could not be equal if the trees were arranged in the form of a quincunx, and if the quincunx is adapted "quadriuult" too has its primary meaning.

In reply to this it may be said that "quadriuult" very frequently has the meaning "fit, agree or tally", and the 28th legion would then read "Plant the rows so that after the vines are planted each path may agree with the one leading obliquely across it." And the
The avenue should be equally and regularly laid out—means that the spaces between the single rows of vines should be equal, and should be at equal intervals from each other: perpendicularly, transversely, and obliquely. As I think, considering that the custom formerly to have been to plant vines, and trees in the form of a quinquirem, and that there is nothing in the text that opposes this interpretation, that that is what Virgil intends to say in these lines and he may have borrowed his thought from Viner, although the construction is not the same. Viner in treating of the condition of soils and divides the topic into two divisions: one which nature gives, and one which growing impart. In treating of the second division he says: Follow those things which make the field more beautiful in appearance so that it may be also more fruitful, as trees are, if they are planted in the form of the quinquirem, in rows and at moderate intervals. One derives from a field equally large but poorly more revenue less huge and more of inferior quality. For those things that are placed each in the most places, those occupy less space and do not keep the sun, moon and wind from each other.

It is possible to see this also in other things as with vines which you can put where they are whole into one peck measure because the shells are each in its own place which nature placed it, when the same nuts are broken you can hardly put these into a peck and a half measure. Besides when the trees are planted in rows the sun and moon where there unequally on all sides so that grapes and olives are few.
dried in great abundance and are shipped meretriciously.
As a result they produce more wine and oil and the
moisture value. Although the connection in which
the passages occur is not the same—Virgil sings
it in in connection with his treatise of the soil and
Virgil is discussing vines—Virgilius are the dates the same,
still Virgilius may have taken his idea which he expresses
very pungently, as to the form in which trees should be
planted from the De Re Rustica.


The vineyard, Virgilius says must be
surrounded by a hedge especially when the vines are
young, to keep out buffalos, cows, sheep and buffalos
and especially the goat, for its bite is poisonous and
more mersane than heat or frost. For this reason
the goat is slain to Bacchus. The same
ritual is performed in Virgilius second chapter.

Agricola says: You deprive the lands of their susten-
ance by the laws of Agriculture in which it is said
that a farmer should not feed them in a field
planted with young trees. In another passage Vir-

gi uses only say (some hardship) for some hubs are injurious
and poisonous to Agriculture as the goat. For they
injure all young crops by their grazing, especially
wines and olives and so it has become the custom
to sacrifice victims from the race of goats for they
injure all young crops by their grazing, especially
wines and olives, and so it has become the custo-
time to sacrifice victims from the race of goats to
some of the gods and not to others, asked by reason
of the great hatred some are unwilling to accept.
wishing others wish to. Do goats are sacrificed to Bacchus the father of wine, so that they pay the penalty with their lives. Of the other gods nothing finds the race of goats is sacrificed to Minerva in account of the fire because they say that when she is injured, the fire becomes larger. They have never been driven into the citadel of Athens except for a necessary sacrifice that it might not be possible that the olive tree which is said to have been produced there first be touched by the goat.

Now the resemblance is so close as you could expect to two writers of such different style and temperament to resemble each other except that at first glance one might say if the poet obtained this from Varro why does he not go as his model does and blame the samaritan that the goat is not to be sacrificed to Minerva especially as Virgil is treating of the olive as well as the vine as he himself states at the beginning of the book. In the first place he is discussing moral alone, at this point and could not be expected to bring in the olive. Then when he finally does come to treat of olive he summarizes them with a few words—simply saying that they need little cultivation and will grow of their own accord after they are fairly staked. I have been unable to find any other instance before Virgil who gives this caution in regard to goats, and it seems to me this passage was probably taken from Varro. Varro does not give
a connected systematic treatise but a number of inceptive may be found scattered through his first book.

Chapter X. There are many kinds of vines. Some grow low without props, others high. Thus the methods and things used for supporting the vines are diverse.

Chapter XXV. The small Arumia and Helvian should be planted in a place exposed to the sun. Urban, as the large Arumia, the Mangelia and Siculian in a heavy shaded place. In all kinds of vines the props should be turned to the north to protect the vines. If you plant expressers for props plant in alternate rows, do not let them grind higher than other props and do not plant vines near them.

Chapter XXXV. Grapes have best in June. Vines will not fructify in less time than a year.

Then it is interesting to note that where Vines divide the vine into right intervals and tells what should be done in each, the vintner's work that should be done on the vines in every interval except the second and fifth.

In the first year, to be tended, in the first tuckered in the fourth the old vines, but to dig about for the second time, the new vines for the third. In the sixth interval the grapes have to be gathered and vines ordered.

In the seventh interval, preserve the vines and in the eighth also prune them. After he vintner's labor that must be expended on the vines during the whole year. Virgil too speaks of the incessant digging and trimming which the vines require. Lines 367-407.
Again too there is the other heavy toil of treading the vines, a work that is never satisfying. For the whole soil has to be broken up every year, twice, and again, and the cloths to be crinkled incessantly with the horse back. The whole plantation has to be lightened of its foliage. Each upon the husbandmen enwraps his labour in a round as the year retreats into its own footsteps, and rolls round upon itself. And not already, when the vineyard has shed its lingering leaves, and the cold north wind has stripped the woods of their beauty, can there a single vine-farmer stretch his countenance to meet the coming year and with Saturn's beast rejoicing in hand press even the tender vine clipping it as it grows and prunes it to the shape he will. "Circe's translation.

Summary of the results obtained from the comparison of specific passages.

Virgil disagrees with Varro in only one point. In treating of the seasons for pruning different Vines he says, "at branches (juba) in the spring whereas Varro speaks the fall as the most suitable time.

In the following passages Virgil has expressed the same thoughts as Varro. The treatment of Plowing Virgil 43-47. Gallinian and Catanian 108-83. The method of planting vines Virgil 272-289. His division of the common object of the site of Jovis II. 271-376. The precepts for irrigation. Virgil says all come passages where the treatment is partly the same but not entirely.
Among these are; the times for sowing I 204-230, the time while the January weather I 160-175, the threshing floor I 175-186; methods for distinguishing soils Being II 225-228, Agriculture II 8-82.

In two passages, the lucky and unlucky days of the lunar months I 276-276 and the adaptability of the soils the same subjects are treated, but not at all in the same manner.

In deciding whether Virgil borrowed all or any of these passages where the author age in whole or in part from Varro, the subject presents great difficulty, from the fact that we do not know in all the works written on Agriculture before Virgil's time those which the Poet might have obtained, and from the impossibility of arriving acquainted with all of the hiding places in Roman literature while we trust Virgil's text.

In consequence of this difficulty, results cannot be absolutely decisive but as far as I can discover, the following points were borrowed from Varro: Plowing II 276-278, Fallowing and Rotation II 83, the method of planting vines Being II 271-287, the poisonous effect of the roots of plants I 871-376. The general statement as to the time for fall sowing I 204-230. Since 175-186 II 8-82 of the harvest of the threshing floor seem to have come in part at least from Varro.

The Insects for Bringing II 100-117 and propagation II 8-82 might be assumed to have been taken partly from the De Re Rustica if it were not for the fact that they bear too much closer
In lines 160-175 Virgil, the books which the farmer needs, and lines 225-238 Virgil.

Methods for distinguishing soils the resemblance seems to be too slight to warrant the conclusion that the de Rustica was used at all.

In the first three books of Vergil, 1st and 2nd

In the 1st Virgile the topics which Virgil treats of which there is no trace prose in the de

Rustica, are chiefly in the Nature of depositions

and epistles, it would not explain to find in

the first three books of Vergil, 1st and 2nd.

There are few didactic points given in which

Vires do not touch upon. The first is in

1.112 where the poet advises the farmer to feed upon the

too abundant crops.

1.187 When the walnut trees bear well the corn crops will

be good.

1.92. Use turpentine in water an oil to make them

yield more abundantly and cook more quickly.

287-825 Many things are done best at night, early

in the morning or the cutting dry grass. In the winter

night the trees may be pointed. In the middle of

summer the corn has to be reaped and threshed.

Winter is the time for illness but with them across

swords and there may be gales.

No. 930-463 are eaten ripe with the signs of the weather

which Virgil stems from Ariston.
All the other passages in this first Deergie are chiefly episodes and digressions. Three taking nearly half of the whole book.

In 118-160 show Vavas's clear thinking for the dignity of labors. 310-350 contain only little that is didactic. Mostly the simple statement that one should guard against the storms of winter and the rainy seasons of spring. Then the poet takes up all the rest of the passage with a vivid description of wine. Out of this many topics by which he makes the poem attractive to those who are not especially interested in Agriculture.

In 463-495 are taken up with the signs of a rainless 497-578. The book ends with a patriotic tribute to Augustus.

So far we have seen but few purely didactic passages found in the first Deergie not mentioned in Eneas.

In the second Deergie there are very few things that come from Vavas. In fact, there is very little in the De Re Rustica that could have been of use to the poet in the composition of his work. The book is given up entirely to tales and myths. While Vavas takes as the subject of his first book the broad theme of Agriculture and the treatment of vines comes in incidentsally and scatters here and there.

In 42-108 he names some of the different kinds of vines and vines which are so interesting that it would be as impossible to count them as it would to count the different sands on the shores of the Storm Sea.

257-420 Vines. As has been said only two of the precepts given by the poet on vines are found in Vavas.
Where the soil is soggy, trenches are dug before you plant vines. A crumbling soil is best. Be careful to transplant them in the same position as where in the nursery. If you plant near the plains, plant them in rows rather far apart so that the planks may exactly correspond in the form of a quintain. The trenches may be shallow but the supports ought to be planted deep and especially the oak. Do not let the vines face the setting sun. Do not plant hazels among the vines. Do not take slips from the top branches. Do not cut their stems with a blunt knife. Do not plant with stumps as supports for the vines. Do not plant the vines when the north wind is blowing. The best time is in spring or autumn. After the vines are planted, close the earth firmly. Peat must be made of light wood or a sheet of peeled plank wood. When the vines are very young they may be cut a little off, when thick, they may be cut with the hand. Later the branches and trunks may be cut with a knife. The earth must be constant by loosened and broken.

420. Olives do not need much cultivation.
421. Fruit trees too when they are well started grow without the help of man. These wild trees have many uses. What equally worthy of mention has the gift of Bacon given. (Bacon) had furnished causes for cities, it modermized the Canaanites who with their great bowls treated the Sarcophagi.

The region about a third of the book is taken up with interesting subjects wholly unconnected with agriculture.

In lines 735-76 with glowing enthusiasm and
oral he praised Italy as the land of great heroes. We find Virgil too praising Italy for its crops more abundant than those of any other land. These scenes have no resemblance between the two rulers; and Virgil does not seem to have made use of Italy at all.

Since 315-345 - his description of spring alone like his sympathy and love for nature.

His beautiful eulogy on rustic life 451-472 close the second book.

Comparative Value of Virgil and Varro as Practical Farmers.

Varro composed his work from a rich fund of knowledge obtained from the study, observation, and experience of eighty years. Besides immense flocks of sheep in Oenotria, and many horses in the country about Brate (De Re Rustica 673).

Varro had three large farms: at his villa at Lumina at Tusculum and near the town Casinum, and on this farm there was an extensive army described in the third book of De Re Rustica. On these farms he spent a large part of his time. As Juvenile says of him, learning and long practical experience furnished the author with rich materials and on fields thus familiar and with what pleasure he handles these subjects with which he was so familiar.

"He belongs," says Curtius, "to the genuine type of the old Roman, improved but not altered by book learning, with his heart fixed in the past, deeply conscientious of ever being natural
and even in his style of speech, protest against the innovations of the day. If we reflect that where Varro wrote his treatise on husbandry, Virgil was at work on his Georgics, it seems almost incredible that they should have been contemporaneous. Nearly all his books are parcelled out in orderly methodical planes. He had no idea of following the natural divisions of a subject but always divided his subject into artificial categories of his own. The nature and style of the De Re Rustica is by no means an exception to this general tendency on the part of the author.

Varro is very practical in his treatment of his subject. He discusses the whole subject of agriculture, first dividing it into four main parts. I. The soil, its nature and characteristics. II. The tools a farmer needs, including slaves, oxen, plow, etc., III. When the different things should be planted and how the land should be prepared beforehand. IV. At what time of the year, different things should be done. In several of these points he goes into details and discusses them at great length, especially in his treatment of the soil and the times of the years suitable for different kinds of work. The rest of the book is again divided into six divisions with reference chiefly to the different epochs which the farmer raises. First, the preparation for the crop is discussed; second, the sowing; third, nourishment; fourth, gathering of the fruit; fifth, storing it away; sixth, bringing it out. Thus he treats the fullest and completely of the cultivation of the fields in all
In Plautus, everything is disposed of under three heads, and children who have never heard the poet treat, are at least subject to some three arbitrary divisions which he has imposed upon his theory.

The Georgics, on the other hand, are not at all practical, but a general guide book for farmers. It was not Virgil's purpose to give a full treatise of husbandry. He had been giving a complete discussion of the subject three centuries before. The poet made practical points from those which the poet would probably have made use of. Among these, the method of reaping grain, the best way of storing away grain, the plants, herbs, and all the different products of the farm, the different kinds of hedges, and how they are made, the different kinds of people for rice. The first and second books of the Georgics are examined closely. Among the first six books, the third part of the first and the seventh are comparatively limited. It was not Virgil's purpose and object to undertake his task to compose a work equally pleasing to the reader unconcerned with farming and at the same time instructive to the farmer. He seems to have chosen the themes most interesting to him and those which would afford the greatest opportunity for an interesting and practical treatment. Nor does he give such proof statements as the number of hird chalks, yard wagons, etc., the farmer should have or how many meals of different things should be plowed to the acres, or how many days it takes things to come up.

Not much use is made of ware.
in either the first or second books of the De Rerum Natura. However, perhaps as much as could be expected, considering the character of the two works and the characteristics of the author. Nearly two-thirds of the first book is taken up with subjects entirely apart from agriculture. Now the subject of the didactic portion of the book is limited. Although the first starts out with the broad theme of agriculture, he treats chiefly of the cultivation of the ground with a view to crops, especially cereals. One of the most important points, planting and rotation, and a part of the treatment of crumbs and the fertilizing of the land seem to have been found in the De Ré Rustica.

In the second book, not much opportunity is offered for use of Varro, as his treatment of vines is very incomplete and unscientific. Only two minor points are taken from the De Ré Rustica: the method of planting vines and the poisonous effect of the bite of goats.
Author of the 1st Book of Varro's De Rustica.

Chap I. Introduction. Had I worked more leisurely indeed, I should have more fitly written these things for you; which now I shall set forth as well as I can, thinking I must hasten, because as they say, if man is like a bubble, so much the more is it true in the case of an old man. For my eightieth year warns me that I should collect my baggage before I depart from life. Do since you have bought a farm which you wish to make fruitful by cultivating it well, and you ask that I take care of it I will try, and not only will I try to advise you while I live as to what should be done, but even after my death. May I not permit the idle not only while I live, but even after I die, to bring these things which helped me, but even after she died, and that too even the most ignorant of none, To whose book we are accustomed to refer so many years when we want to know. Some account what must be done. I say, I will not permit her to be so useful while I am alive, while I live, so that which may help my friends, and since as they say the gods help those who first serve their gods, who are leaders of agriculture. (The twelve gods are named) No that this gods have been invoked I will relate the conversations which we have recently had about agriculture, from which you will be able to know what you ought to do. I will refer you to Ticius and Catanus; writers whom you may consult in case there may be some things you want to know that are not in these conversations. (Then he names a long list of Catanus & Ticius writers) I will attempt to set forth those things in three books, cutting out everything that does not pertain to the cultivation of the field. My knowledge has been gained from three
sources, experience, some things which I have read and from what I have heard.

At the next time festival I came into the temple of Jellai having been invited by the overseer. Here I met a number of Indians who had also been invited and as the overseer had not yet come we sat down to wait for him. One of my hosts speaks to the company. "What place have you who have traveled over many lands seen more cultivated than this Haiti?" Against answers, "I think that no place is so entirely cultivated. There are some regions between the northern circle and the north pole where the sun is not seen for six continuous months and where nothing will grow. But in Haiti what is true that is not prone not only to use but how excellently? What shall I say, the fields of Canarias, the wheat of Chilix of the vines of Falmes or the ruins of Barques? Or Haiti planted with trees so that all if it seems like a forest? Do you where which Rome calls rich in vines more covered with vines than it? Or before which the same host calls rich in corn? Then the question comes up. "What are the object of agriculture usefulness or pleasure?" Persia says, first we must decide what is included in ag. whether what is grown in the fields or what is brought into those also as sheeps and goats. Fundamina. Certainly pasturing is nothing and the shepherd, if they are related just as the right fingers in one thing or the left and one, yet they are joined in a way. Our places the tinkle the other the accompaniment. I the life of the shepherd is the tinkle note, that I the farmer the accompaniment." In this connection the passage about the life of the goat coxes in. It is finally decided that pasturing is not a part of agriculture.
Within are Apollo's shrines or altar-muses and the temples, which are the products of wise fields. Our cities have few names for pains at the foot by repeating these words: (with various): Terra, potestas fortis, salus, munere in misericordia. Every city gives receipts for diseases and setting down lame. All these things should be excluded.

Chap. 9.4. We now come back to the original question: whether the chief object in farming should be usefulness or pleasure. Both are very important, and the farmer should strive for two goals, usefulness and pleasure. The care which makes a field more beautiful also makes it more fruitful and valuable. The more useful is also the healthiest. This does not diminish the value of science, for often an unhealthy place may be made healthy. This much Varro gives by way of introduction. Here he divides his first book into cultivating the fields into four main divisions and each of these has two subdivisions.

Chap. 1. The knowledge of the field, its soil and constituents.

1. Those which pertain to the soil of the earth.
2. Those that pertain to vines and stables.

IV. What should be prepared for the culture of the field.

1. Animal things.
2. Inanimate things.

V. What should be done for cultivating the field.

1. What must be prepared beforehand.
2. Where each thing should be planted.

VI. At what time each thing should be done in the field.

1. The things that must be sown in the annual course.
Four things must be considered in regard to the soil.

1. What is its appearance (forma)?
2. What are the characteristics of the soil?
3. How large the field should be?
4. How it may be safe.

As there are two kinds of 'forma', one given by nature as flat, rocky, or hilly land. That field is best which lies at the foot of a hill and looks towards the south.

One does best in the plains, vines in hills, trees in W. The other 'forma' is given by cultivation. This rule may be followed in cultivating fields. Follow those things which make the land most fruitful in appearance and at the same time more fruitful. As the planting of trees in the form of the gnomon.

2. What are the characteristics of a field that it is called especially good or bad? Examples are given showing that small things do grow better in certain places. Here some are mentioned by remarking that Cato says some fields are better than others in vine, the next place land that produces an abundance of good wine first. Those diseased and put to meadows last first.

Chap. 17. He says it makes a difference what kind of vine it is. For there are many kinds. Some are low without props as in Able and others are high called jugator, as in Italy. Then the methods for supporting vines and the different kinds of props are given. Then returning after this digression to the characteristics of the soil he names the different kinds as chalky, sandy, moist, etc. and in other cases gives what grows best in each kind. Then he mentions methods of telling whether the soil is suitable for cultivation or not.
c. How large the field should be. Varro gives different methods of measuring land. Not many hectares have failed in measuring out fields.

These treat of the villa and its position.

I. Under the subdivision—how it may be safe through itself Varro describes the different kinds of hedges.

These divisions who he brings in things that are outside of the field, yet are connected with it, containing the same to take care that his fields do not have as neighboring these who steal and that there are places near where the produce may be sold and things may be bought that there are good ways roads to navigable rivers near.

II. The second main division—things needed in the farm—is divided into: vocal, as cheese and kind meat; renewable, as vine and stock; write, as wagons and ploughs. Under each of these heads the ancient discusses how many are needed for different sized fields.

III. What must be prepared beforehand and where each must be planted for the cultivation of the fields. It is important to consider what should be sown in each place, for some places are suited for hay, wheat, for grains, some for wine, others for oil. Others do not need much moisture. Clove, beans and chickpea grow best in thin lands, in rich lands, wheat, flax and cabbage. Some things, as bean, are not grown for their immediate use but looking forward to the future are planted to enrich the land. Willows and vines require moist places. Ash trees require shady places. Plant on points and gardens in sunny places. Some kinds of vine require rich, heavy land, other thin land. Do also sparse vines should be planted in a place exposed to the sun, others in a heavy
shed soil. In all kinds of vines, the pikes should be turned to the north to protect the vines. If you plant grapes for pikes, plant in alternate rows and do not let them grow higher than other pikes nor plant vines near them.

Chap. xxi.

The fourth main division - time for sowing is divided first, according to the annual course of the solstices and equinoxes. When the land is plowed and the sowing is made, some men, when the harvests are gathered; distance, when the grapes are gathered and vines cultivated; winter, when the vines are pruned.

Chap. xxii.

Then a smaller division is made according to the monthly course of the moon into eight parts, each a month and a half long. Know all the things that should be done in each of these intervals. These are: the common tasks of farming life such as in the first interval, between early spring and March 21, the sowing is done, vines pruned,копырь and the ground plowed. In the second interval, between March 21 and May 21, weed the crops, plow again, cut willows, sow the vines and prune them.

Chap. xxiii.

After tilling up each of these intervals, there is the lemon days.

Chap. xxiv.

Thus the crops, etc., suggest another division connected to a month that with the second month. 1st Preparation for sowing must be made; 2nd, the sowing must be done; 3rd, the things above must be removed; 4th, the grapes; 5th, stare away; 6th, through.

Chap. xxv.

I. Under the first head, preparation, the author says, "For some things the ground should be dug up as for orchards, for some plants, as for crops, so that the earth must be turned up with the plow, and land must be
irrigated, and all lands should be manured. Here he gives a discussion of the best kinds of manure.

Chap. 32. Under sowing, he discusses propagating, cautioning his reader not to plant his seed in too deep or too short depth, but moderate. In our area if the land is moderate you should plant 12 feet of clover. Clover should be sown in land that is well worked.

Chap. 33. Beans are sown four feet the acre, wheat five, barley six, and spelt ten. In some places more is planted, some less, according to the density of the land.

Chap. 34. In treating of the propagation of the things that have been sown, the things that are born in the field are nourished three and bring forth fruit, and if you pluck a flower or bear nothing well you in the same place that you.

Chap. 35. Then he tells the farmer to buy it and various things to come up. When you remove plants from a sunny into a colder place the threads must be covered up with leaves. The olive and fig should be especially protected. If none follow you should see that watch does not stand to time.

Chap. 36. Here comes a slight digression, one of the fine in the 

La Rustica. The root under the earth do not grow at the same time nor with the same rapidity with the branches above. The root grow first and never in the autumn and winter because they are kept warmer than the branches. They do not extend further than the mantle of the pine needles. There are many different kinds of trees and from some the time you had and be told by the way the leaves turn. For instance, the olive, white, the palm and willow change their leaves it is said to be the solstice. The heliotrope to are named because they look in the
coming to the rising sun and so follow it to its setting
that they always look toward the sun.

Chap. 48  Next we give the names of the different parts of
grain. Here again various kind of error has crept into the
etymology in other. Many of these attempts are truly
absurd. For example, kilbata is so called "good outfit.
famine," price, a spe from the hope it holds out
of a future harvest.

Chap. 49  Then the grass ceases grow it ought to be cut
with scythes and turned over with fork until it is
thoroughly dry. Then when it is dry, bundles should
be made and it should be carried to the mill. Then
the stubble should be scraped up and the hay collected
then the meadow should be mowed.

Chap. 50  There different types for reaping grain are given.
The description of the threshing floor already discussed
comes next.

Chap. 51  The different ways for separating the grain from the heads
in the threshing floor are given.

Chap. 52  Be careful in gathering the grapes to take the ripest first.
Wine should be gathered rather than shaken in order to
keep from bruising them. They should be picked with
bare fingers rather than with gloved. What cannot
be picked should be knocked off with a pole. Other wise
they are shaken off they take things with them and this
is the reason why they do not bear in alternate years or
at least not so abundantly.

Chap. 53  Wine should be put under cover rather than in stacks.
Wheat in high granaries, plastered and well protected.
Some have granaries underground. Bees will keep
well in still vases sealed with ashes, grapes keep well.
Apples are kept in a dry cold place. Olives are preserved by rubbing them with salt and exposing them to the sun. Also in most foiled drums.

Chap 62-63. VI Fruit is brought out either to look at, to use or to sell. It should be brought out and examined because worms sometimes begin to eat it. Vessels should be placed near the fruit in the sun and there they come to it they will kill themselves. If you want to store it for food, it should be brought out in the winter and buried and roasted.

Chap 64. The watery portion is driven off from olives and then boiled down in bronze vessels over a slow fire. Wine is not ready for use in less than a year.

Chap 66. White olives are better if used too quickly, as are clear ones. Unless you sprinkle them with salt!

Chap 68. Things that have been hung up as grapes, apples and scarce berries show by their color when they are ready for use.

Chap 69. Bring things out to sell when they will bring the highest price.

Then the servant of the overseer came and said that his master had been killed in the street. So Varo and his friends leave the temple.
The line which Virgil makes of the First Book of Varro. He says Rustica.

Mary Watson Sillars. May 20th, 1901