

ATHENS AND ROME: LIFE AND CULTURE IN CLASSICAL ANTIQUITY

Lecture 20 – Greco-Roman Agriculture

CLCS4007

Dr Matthew Cobb

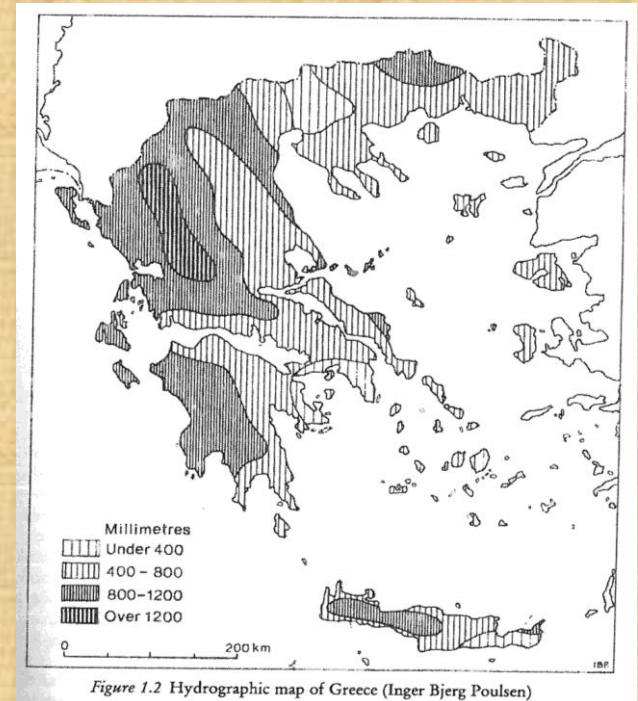
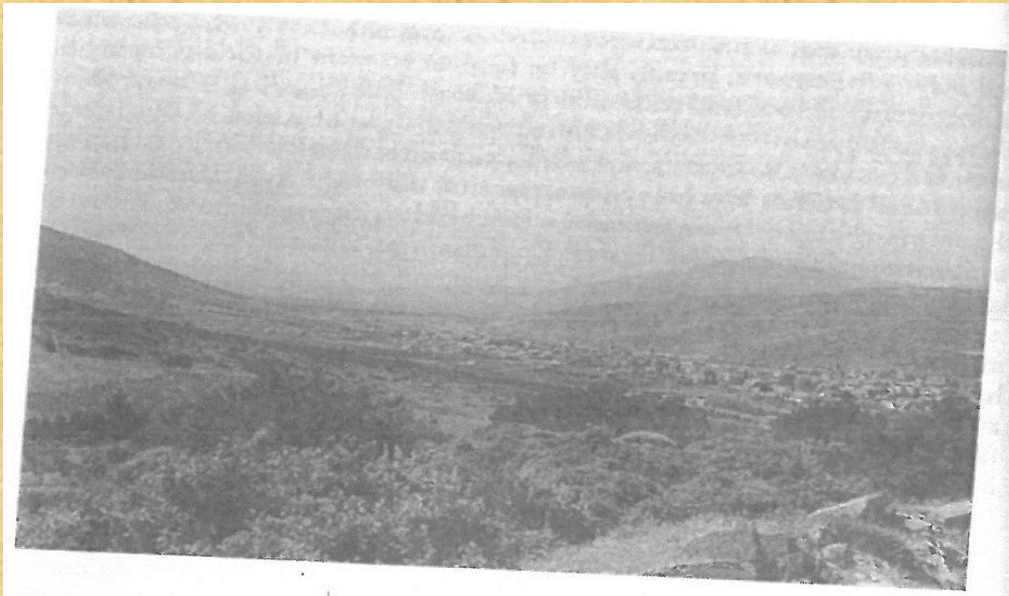
Agriculture in Greece

Geography and Climate

- ❑ Diverse array of regions, with individual climatic features, soils, ground levels, water tables – regions from Greece “proper”, Asia Minor, Black Sea, Spain, Italy (Magna Graecia).
- ❑ Broader Mediterranean climate – mild and rainy winters and hot and dry summers.
- ❑ Uneven rain and torrents, harsh winters in mountainous areas.
- ❑ Dry river beds in summer make irrigation difficult.

Attica

- ❑ Marathonian plain bounded on landward side by low-lying limestone mountains.
- ❑ Number of vast swampy areas in Antiquity.
- ❑ Terrace farming would have been required near the foothills.



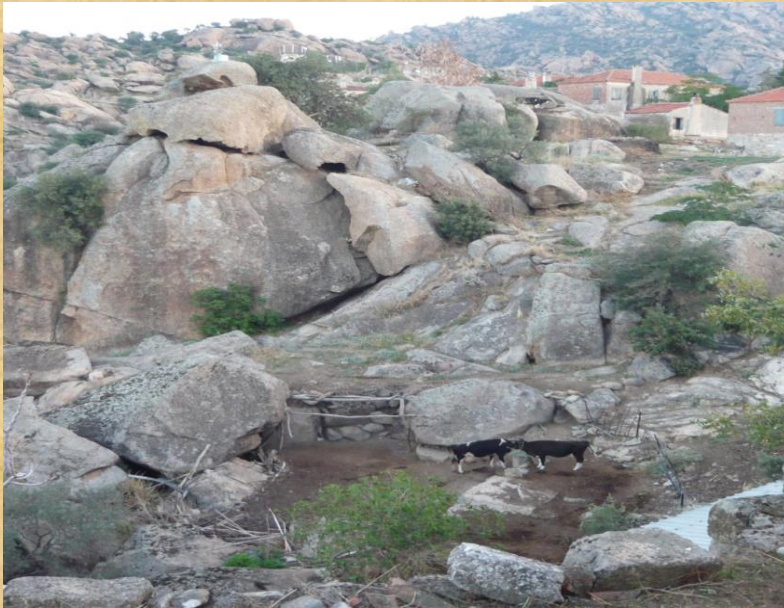
Deforestation?

“But at that epoch the country was unimpaired, and for its mountains it had high arable hills, and in place of the “moorlands,” as they are now called, it contained plains full of rich soil; and it had much forestland in its mountains, of which there are visible signs even to this day; for there are some mountains which now have nothing but food for bees, but they had trees no very long time ago, and the rafters from those felled there to roof the largest buildings are still sound. And besides, there were many lofty trees of cultivated species; and it produced boundless pasturage for flocks.” – **Plato**
Critias 111c.

Farmers

- ▣ Farmers would produce a surplus,
 - They aim to survive the worst year, but most years are average or better.
- ▣ Grain ration 1:3?
- ▣ Surplus can be spent on a party/festival, given to friends, or sold to strangers.
- ▣ No-one gives up a farm to do something else unless they are confident that they will be able to buy surplus food for whole year,
 - Non-food producers live near a food market,
 - Craftsmen/service sections of market emerge when there is a secure food market.

Ancient Mixed Farming?



- ▣ Little of lots
 - Few fields growing a variety of crops
 - Some fruit trees
 - Some animals
 - Little technology
 - Little surplus.
- ▣ Land designations:
 - Common (*koine*) or public/state land (*demosia*) – may be leased out or sold.
 - Sacred (*hiera*) – maintenance of cults.
 - Private (*idia*)
- ▣ The animals are walked down to pasture daily.
- ▣ Division of plots – no primogeniture – advantageous due to weather patterns?

Slaves in Attic Agriculture

- ▣ Were slaves widely used in farming?
- ▣ *Horos* inscriptions – craft-slaves given as security on a loan, slaves given as security with land.
- ▣ Stele recording manumitted slaves - *IG 2² 1554, 1556, 1557, 1558, 1559* – mostly mentions craft-slaves - 11 out of 85 are referred to as *georgoi* and two more as vinedressers (15% of total).
- ▣ Xenophon *Oeconomicus*.

Planting and Sowing

- ▣ Hesiod recommends ploughing the field three times.
- ▣ Sowing of the field is then done by hand by hoeing it into the ground.
- ▣ Two field system – one year of crops followed by another year of fallow?

“Well, you know, I take it, that fallow must be prepared for sowing?” – **Xenophon**
Oeconomicus 16.10.

“When the Pleiades, daughters of Atlas, are rising [May], begin your harvest, and your ploughing when they are going to set [November].” – **Hesiod** *Works and Days* II.383.

“So soon as the time for ploughing is proclaimed to men, then make haste, you and your slaves alike, in wet and in dry, to plough in the season for ploughing... Plough in the spring...” (II.458-62).

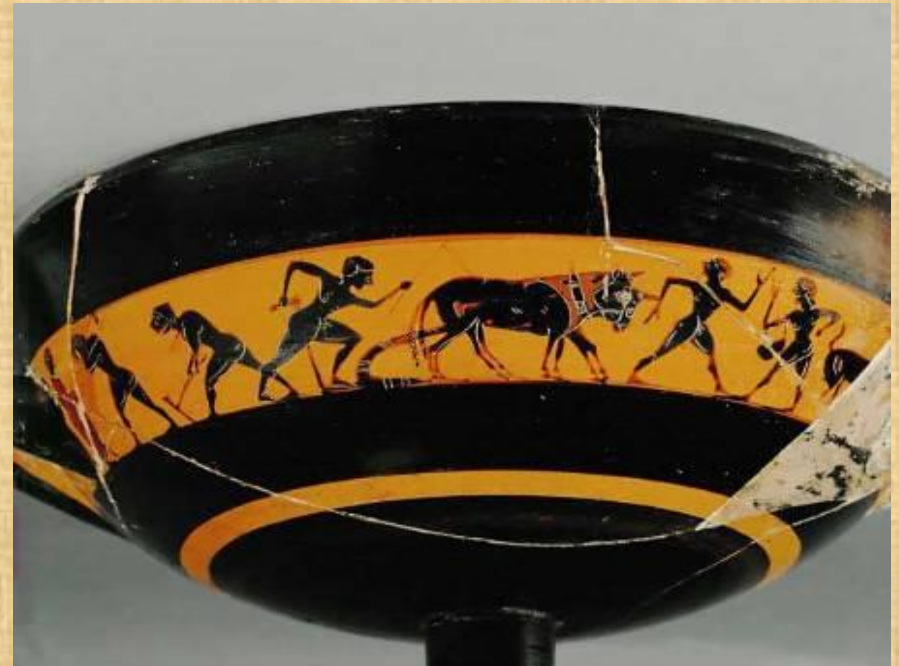
“For as soon as autumn ends, all men, I suppose, look anxiously to God, to see when he will send rain on the earth and make them free to sow... “But,’ said Ischomachus, ‘when we come to the question whether sowing is best done early or very late or at the mid-season, we find much difference of opinion, Socrates.’ by fixed laws; but in one year it may be advantageous to sow early, in another very late, in another at mid-season.’ ... ‘For my part, Ischomachus, I think it is best to sow for succession throughout the season. For in my opinion it is much better to get enough food at all times than too much at one time and not enough at another.’ - **Xenophon** *Oeconomicus* 17.2, 4, 6.

Equipment – Plough and Hoe

- ▣ Plough used is *ard* leaves a scratch in the soil for destroying weeds and airing the top soil so plants can take root.
- ▣ Hoe useful in stony ground for weeding it and removing small sections of soil.



Boeotian terracotta – c. first-half of the sixth century BC



Black Figure vase c.525 BC

Harvesting and Threshing

- ▣ Advice from Xenophon (*Oec.* 18.1ff) about harvesting:
 - Reaper should stand with his back to the wind.
 - If straw short cut it at the root, if long in the middle.
 - Stubble can be burnt or brought to compost heap.
 - Beasts trample on the corn, kernels trodden free followed by winnowing.

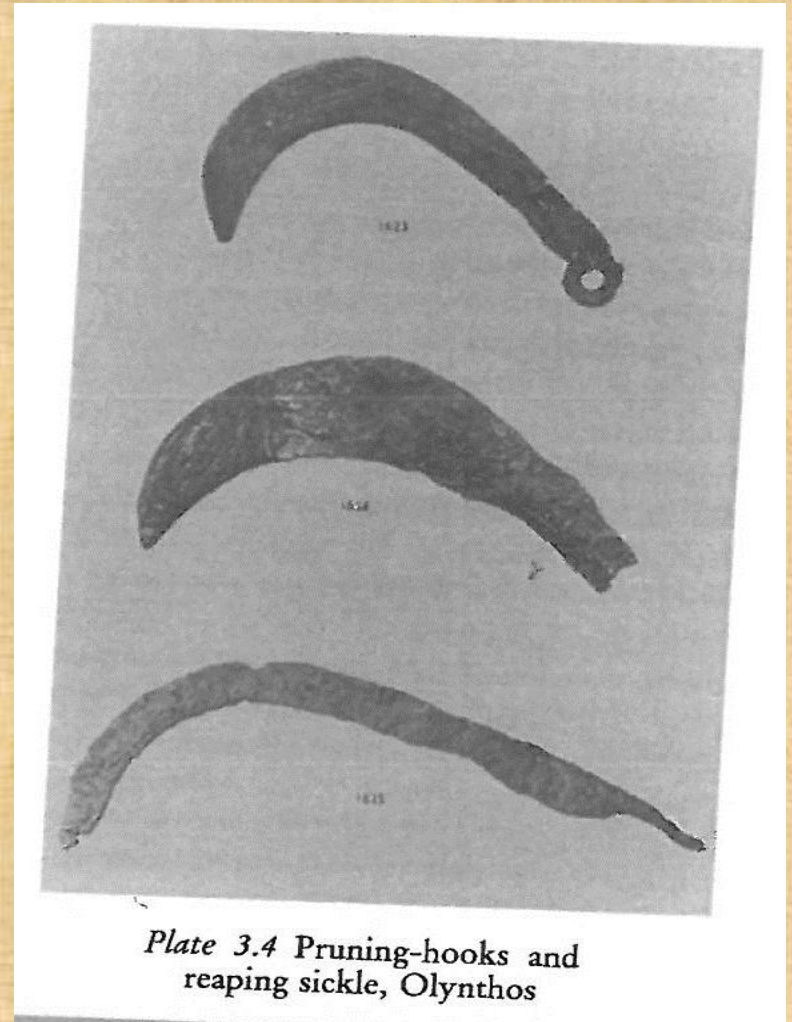


Plate 3.4 Pruning-hooks and reaping sickle, Olynthos

Legumes – “Green Manure”

- ▣ Pulses and legumes a supplement to the Mediterranean triad (grain, olive oil, wine):
 - Vetch, lentils, chickpeas, broad beans, garden peas.
- ▣ Thought of as food for poor as survived drought and preserved well.
- ▣ Good for providing protein in diets often deficient of them.
- ▣ Legumes helped nitrogen-recovery in the soil (though this was not fully understood by the ancients).

“The Egyptians sow no beans in their country; if any grow, they will not eat them either raw or cooked; the priests cannot endure even to see them, considering beans an unclean kind of legume.” – **Herodotus 2.37.5.**

Viticulture

- ❑ Cutting of vines used to propagate new fields.
- ❑ Vines growing as separate stems and climbing upon other trees.
- ❑ Digging holes at beginning of spring recommended – pruning takes place “after setting of Pleiades” (end of October).
- ❑ Inter-cultivation used – planting of beans or barley between the vines.
- ❑ Hoeing the soils so thin layer of dust may cover the grapes – delaying ripening of grapes to increase sugar content.

Making Wine

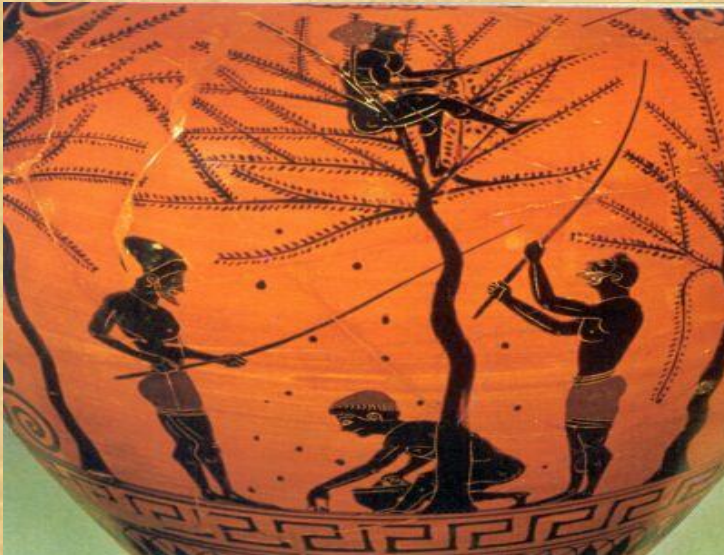
- After grapes collected in baskets, and the then placed onto wooden/stone pressing boards.
- Grapes worked with feet and knees and juice flowed in containers.
- Must separated from grape-skins and seeds and fermented separately to make white wine, must kept in to make red.



Red Figure Krater

Olive Culture

- ▣ Olive trees only give substantial yields every other year using dry-farming.
- ▣ Picking olives takes place from autumn till early spring.
- ▣ Labour input very low except at harvest time.



Black Figure vase c.530-510 BC

“For I am sure you see that a deeper hole is dug for the olive (it is constantly being done on the roadside); you see also that all the growing shoots have stumps adhering to them; and you see that all the heads of the plants are coated with clay, and the part of the plant that is above ground is wrapped up.” - **Xenophon**
Oeconomicus 19.13.

Making Olive Oil

- ❑ Olive fruits have to be crushed before they can be pressed.
- ❑ May have been necessary to crush with feet, using heavy shoes prior to development of the mill (*trapetum*), around fifth century.
- ❑ After crushing olive fruits need to be exposed to heavy pressure – either stacking on top of each other in woven bags or with an olive press.

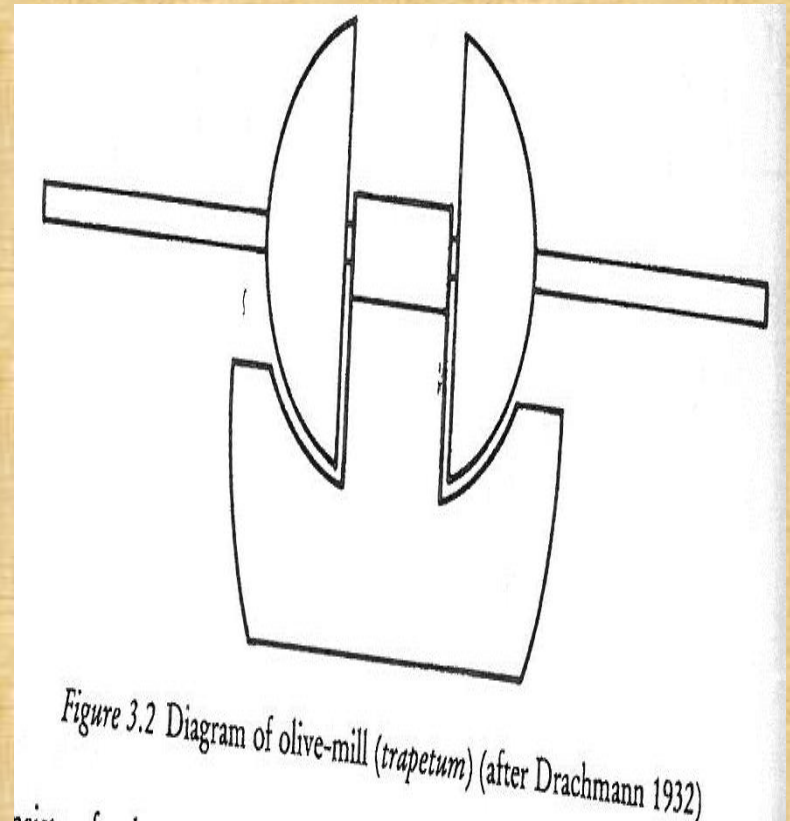


Figure 3.2 Diagram of olive-mill (*trapetum*) (after Drachmann 1932)

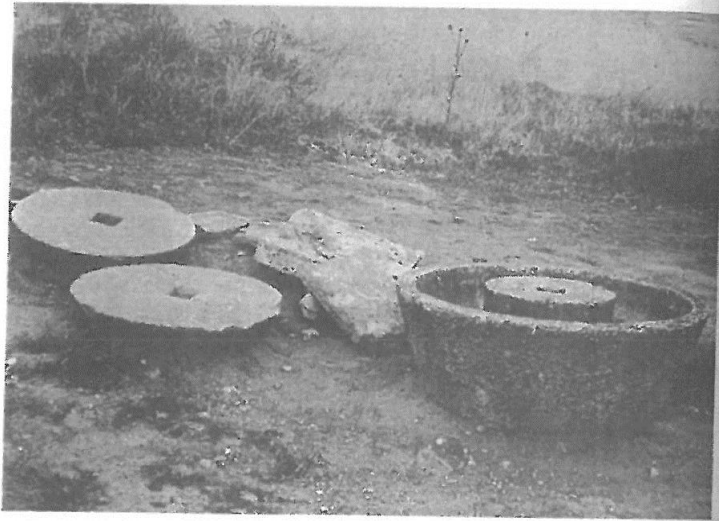


Plate 3.10 Oil-mill (*trapetum*), Olynthos

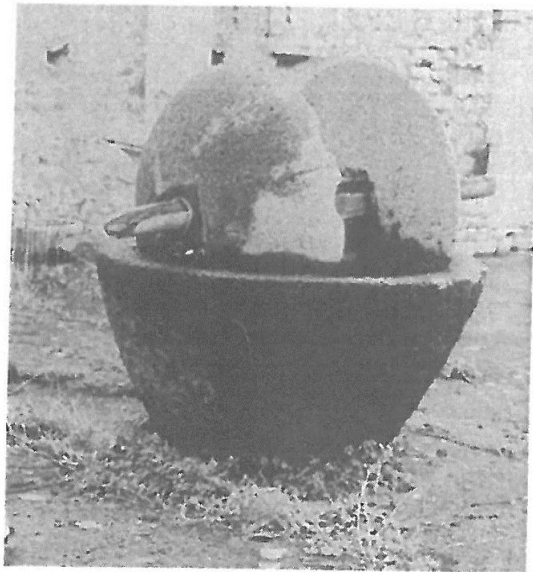


Plate 3.11 Oil-mill (*trapetum*), Pompeii

- ▣ Pressure is applied by means of a pressing beam, assisted by heavy counterweights.
- ▣ A man stands at the end of the beam while another jumps on to it, forcing it down with his weight.
- ▣ Screw-press invented in Hellenistic period.



Plate 3.12 Olive-press, Attic black-figure skyphos, Boston (M.H. Hansen)

Stock-Rearing?

- How common were domesticated and farm animals? – rarely mentioned in leases or Xenophon's *Oeconomicus* – but flocks of sheep and goats normal components of lists of property in Attic orators.
- All yield manure and meat – eggs (poultry), haulage (equids), milk, hides/wool, and bones (cattle, sheep, goats), racing and warfare (horses).
- Finding grazing space – public/common land, mountains, hills, woodlands, scrub-lands, arable-land left fallow, land after the harvest.

Agriculture in the Roman World

Style of Agriculture

- ▣ Inter-cultivation rather than single crop and fallow – former helps reduce problems of weeds.
- ▣ Columella motions Italian cropland producing fourfold returns vs. Cicero's statement for Sicily for 8 to 10 fold.
- ▣ Importance of kitchen gardens and some animal husbandry – transhumance from coastal flats in mild winter to Apennines in the summer.
- ▣ Most farmers seem to live in urban or semi-urban settlements, rather than scattered throughout the countryside.

Spread of the Olive and the Vine

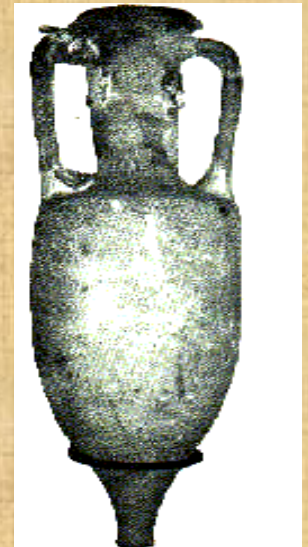
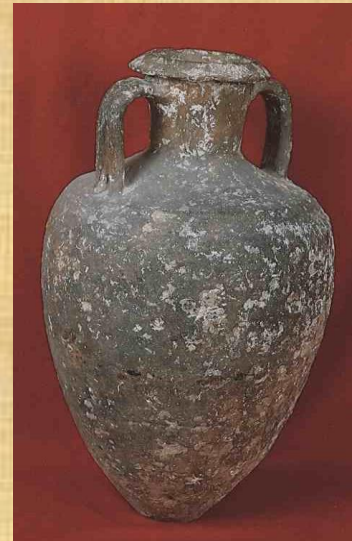
- ▣ Relatively consistent picture of spread of olive and vine cultivation spreading to western Mediterranean as a result of Greek and Phoenician trade and colonisation.

“Theophrastus, one of the most famous among the Greek writers, who flourished about the year 440 of the City of Rome [313 BC], has asserted that the olive does not grow at a distance of more than forty miles from the sea. Fenestella tells us that in the year of Rome 173 [580 BC], being the reign of Tarquinius Priscus, it did not exist in Italy, Spain, or Africa; whereas at the present day it has crossed the Alps even, and has been introduced into the two provinces of Gaul and the middle of Spain.” – **Pliny NH 15.1.1.**

“...that regions which formerly, because of the unremitting severity of winter, could not safeguard any shoot of the vine or the olive planted in them, now that the earlier coldness has abated and the weather is becoming more clement, produce olive harvests and the vintages of Bacchus in the greatest abundance. But whether this theory be true or false, we must leave it to the writings on astronomy.” – **Columella *De Re Rustica* 1.5.**

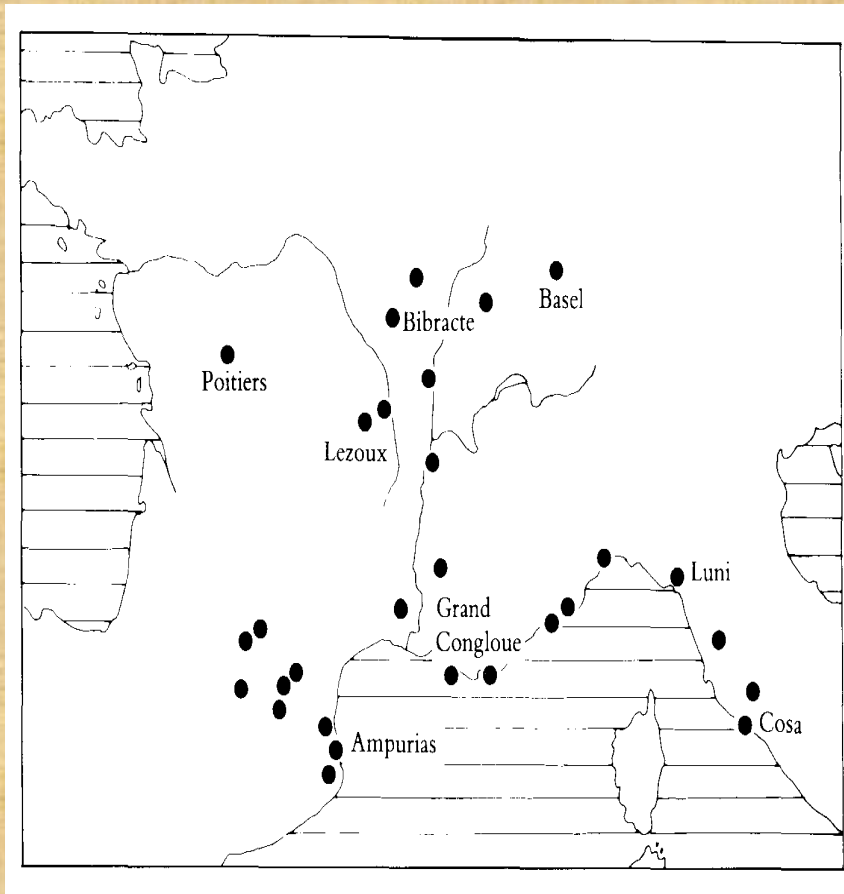
Growth of “Slave Villas”

- ❑ Important changes in Italian agriculture during second century – increasingly large scale commercial production of wine, olives and cash crops in central Italy.
- ❑ Intensive agriculture displacing extensive nomadic rearing – *elogium* of Polla (Forum Popilii).
- ❑ Shift from Greco-Italic amphora to Dressel 1A.
- ❑ Increasingly popularity of agrarian manuals – translation of Mago’s work, and Cato’s *De agri cultura*.



“And when the rich began to offer larger rents and drove out the poor, a law was enacted forbidding the holding by one person of more than five hundred acres of land. For a short time this enactment gave a check to the rapacity of the rich, and was of assistance to the poor, who remained in their places on the land which they had rented and occupied the allotment which each had held from the outset. But later on the neighbouring rich men, by means of fictitious personages, transferred these rentals to themselves, and finally held most of the land openly in their own names. Then the poor, who had been ejected from their land...But his brother Caius, in a certain pamphlet, has written that as Tiberius was passing through Tuscany on his way to Numantia, and observed the dearth of inhabitants in the country, and that those who tilled its soil or tended its flocks there were barbarian slaves, he then first conceived the public policy which was the cause of countless ills to the two brothers” – **Plutarch *Life of Tiberius Gracchus* 8.2-3, 7.**

Wine for Slaves



Distribution of the stamp of Sestius on Dressel 1 amphorae.

“Consequently many of the Italian traders, induced by the love of money which characterizes them, believe that the love of wine of these Gauls is their own godsend. For these transport the wine on the navigable rivers by means of boats and through the level plain on wagons, and receive for it an incredible price; for in exchange for a jar of wine they receive a slave, getting a servant in return for the drink.” – **Diodorus Siculus 5.26.3.**

Rise in Provincial Production

- During the 1st century AD, Italy appears to have experienced a decline of trade, as opposed to the rise of the provinces (at least in the case of those products we can identify today).



Italic wine amphorae
distribution



Imperial Measures

“Once upon the occasion of a plentiful wine crop, attended with a scarcity of grain, thinking that the fields were neglected through too much attention to the vineyards, he made an edict forbidding anyone to plant more vines in Italy and ordering that the vineyards in the provinces be cut down, or but half of them at most be left standing; but he did not persist in carrying out the measure.” – **Suetonius** *Domitian* 7.2.

“...[Probus] granted permission to all the Gauls and the Spaniards and Britons to cultivate vineyards and make wines, and he himself planted chosen vines on Mount Alma near Sirmium in Illyricum, after having had the ground dug up by the hands of the soldiers.” – **SHA** *Probus* 18.8.

Olive Oil

- Requisitions and redistribution, supplies for the army - distribution of Baetican olive oil?



Imperial Estates

- ▣ The emperors were the largest landowners – estates across the Empire.
- ▣ Frequent procedure (at least in Africa at Egypt) was to lease parcels of land to *coloni* (farmers).

“Bassaeus Rufus and Macrinus Vindex to the magistrates of Saepinum [in south-central Italy], greetings. We have appended a copy of a letter written to us by Cosmus, freedman of the emperor and financial secretary... we warn you to refrain from abusing the lessees of the flocks of sheep to the serious detriment of the fiscus...” – *CIL* 9.2438 (AD 169-172).

Rome as a Parasite?

- ▣ Impact of Rome gravitational pull – Ostia prospers as part of Rome's supply chain.
- ▣ Port of Cosa important for export of produce from Ager Cosanus – urban centre in decline from 1st century BC – wealth of villa owners spent elsewhere?
- ▣ Decline in urban centre in Sabine and Latin areas – produce being sent directly to Rome rather than local markets – satellite communities: “Trebula, Eretum, and other such settlements might be ranked as villages rather than cities.” – **Strabo Geog. 5.3.1.**

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