Gabriel Alonso de Herrera, whose treatise *Obra de agricultura* (1513) has long been considered the first original writing on agriculture in the vernacular in Spain, cites in his “Prologo” four reasons why his critics and detractors scorned his undertaking. First, there was the argument that the Latin authorities, who perforce served as sources for any would-be compendium on agriculture, wrote about the subject in accordance with the rules governing the soil and climate of Italy, and, since these differed substantially from those of Spain, were therefore useless. Second, some considered any written or scholarly approach to agriculture as superfluous and suspect. Herrera writes “I'm not surprised at the murmurings of those who say that any rude peasant knows more about the labors of the field than did Columella, Pliny, Cato, Palladius, and the great Marcus Terentius Varro”; one notes reflected in these words the disdain felt by noblemen and Conquistadores toward both the lowly farmer and the lofty Latin texts of the classic writers on agriculture. Third, there were those who argued that “the precepts of agriculture cannot be made an art”; i.e., could not be codified, implying perhaps that agriculture, like, say, shoemaking, fishing or sewing did not merit the prestige that attached in those times to being put down into writing. Such detractors further claimed that “nothing ever written about [agriculture] serves any good use.” Finally there were those who argued “Why write it down, since farmers can’t read anyway?”

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1 «Por ende reprehenden esta obra algunos que poco miran y calan las cosas. No carecen deste error algunos letrados que dizien que las reglas de los agricultores que en ytalia scriuieron, no pertenecen a la region de espana: o por la disconformidad de la tierra, o por la discordancia o de climas o de estrellas que de una manera influyen en unas regiones, y de otra manera obran en otras» (zr).

2 «No me espanran murmuraciones de otros que dizien que mas sabe qual quier rustico labrador en las cosas del campo que supieron columella, plinio, caton, palladio, y aquel doctissimo marco terencio varron» (2v).

3 «Esto digo por que avn ay otros que dizien que ni los preceptos de agricultura se pueden trazer a arte» (sv).

4 «no aprouecha cosa alguna quanto dello se scruiue» (sv).

5 «para que se scruiue pues los labradores a quien esto mas pertenece no saben leer» (sv).
These arguments go a long way toward explaining why, before the end of the Middle Ages, there is very little original writing on agriculture. Notable exceptions stand out, such as Walter of Henley's *Husbandry* in thirteenth-century England (Lamond xxi-xxii), Gottfried's *Pelzbuch*, in fourteenth-century Germany (Eiss 19), and Crescenzi's *Trattato della agricoltura* (1304) in Italy (Olson 35), but even the earliest of these comes after a hiatus of nearly 1,000 years, following the *Opus Agriculturae* of Palladius at the close of the classical period. In Spain much original writing on agriculture was carried out by the Spanish Moors (Ibn al-Bassal, Ibn al-Awwam, Ibn Wafid), but it has long been known that no original texts on agriculture were written by Spaniards before Herrera, and certainly not in the vernacular.

However, two witnesses have recently been discovered, both in fifteenth-century manuscripts, of a text which by its *incipit* might be titled *Capitols singulars dels llavors que devra sembrar* ("Chapters one-by-one of the seeds which you should sow"), and which seems to suggest that a school of native agronomists flourished in Spain in the fifteenth century or earlier, well over a hundred years before Herrera, perhaps inspired by the example of their former Arabic masters. Neither witness has been the object of study before now. The intention of the present writing is to bring this text to the fore in the hope that it may serve as a model against which future textual discoveries may be compared, and in the hope that greater scrutiny by agricultural historians may establish its proper place in history.

The agricultural menology, i.e., the ordering of planting and harvesting instructions by the months of the year (and by other astrological considerations within each month) has been a respected tradition in agricultural writing for centuries and even millennia. The ease of composing such chronological calendars, and the ease of grasping and implementing such logic, has no doubt ensured the survival of this type of writing, especially among non-scientists and the uneducated, right up to the yearly supermarket almanacs of our own times. In the Iberian peninsula this tradition can be traced back through the almanac tradition of the Arab world, through the Arabic writers on agriculture such as Ibn al-Awwam's *Kitab al-Felaba* (12th-13th c.), Ibn Wafid (11th c.) and the *Calendar of Cordova* (10th c.); through Palladius's *Opus Agriculturae* (5th century), to Book 11 Chapter 2 of Columella's *De re rustica* (1st century A.D.) and finally back to the lost Greek *Geoponika*, at least as it is preserved in translation. All these works contain at least a section in which the agricultural labors of the year are treated month by month. Many other examples of the sequential treatment of the yearly agricultural labors could be given from scientific, literary and artistic sources. Yet another type of agricultural menology is represented by the present edition. This is an extremely brief and eminently practical month-by-month prescription of the times and seasons for sowing, planting and transplanting (and some harvesting) of numerous crops (vegetables predominating, with grains, fruit trees and herbs besides) contained in two fifteenth-century Iberian manuscripts. The text is anonymous, bears neither toponyms nor anthroponyms, is remarkably devoid of superstitious elements and shows no evidence of translation. We suppose it to have been composed originally in the vernacular—not translated from Latin or Arabic—as a handy planting guide for farmers and estate-owners in eastern Spain. One version is written in Spanish and the other in Catalan. While these two versions are the only known texts of this "menology" type, they are closely related to several other opuscles on agriculture dating from the same period which likewise originate in the Spanish Levant: seven chapters on diverse agricultural topics, the *Memoria de les maneres de les llavors* ("Account of diverse crops") and the *Tractat* of BCB.

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9. See José Simón Díaz y 9. 83-86 for a complete list of the many editions of the *Lunario* Crescenzi's menology occupies his Book xii (see Ross 198: 310-318). For Ibn Wafid, see the ed. by Millás Vallicrosa of the Old Spanish trans. of this 11th c. Toledan scholar and doctor, whose calendar appears in fragmentary form in this unique ms. (322-324). For Ibn al-Awwam, see *Baqi* (1979): 476-489. The Calendar of Cordova see *Dozy*. For Columella's menology, see *Alvarez de Soto* (1917): 317-318. For the *Menologija* of Geoponika as preserved in Arabic translation, see *Vázquez de Benito* (1921). An example from literature of the agricultural menology tradition is the well-known 13th-century *Libro de Alexandre* stanzae 340-340, which describe the labors of each month as they are depicted on decorative tapestries lining the inside of the royal tent of Alexander the Great (Alvar 199-200). See also Pedro Meja's explication of his *Silva de Varia Lecion* (1973) of the traditional depiction of the twelve months of the year and their agricultural associations (1: 369-371).

10. On arboriculture, weather prognosis, seed storage and sowing, contained in BN Madrid MS ro21 beginning at folio 210v (Capuano 1987).

11. The *Memoria* is contained in a codex in the private collection of the American Hispanist Joseph Gwara. A fragment of this *Memoria* can also be found in BN Madrid MS 10.211 ff. 213-214v (see Capuano 1994).

The *Tractat* is an unpublished miscellany of agricultural instructions contained in Biblioteca de Catalunya - Barcelona MS 754. An edition of this work is in preparation by
The menology taken together with these other opuscules on agricultural attests to the fertility and prosperity of the huerta area around Valencia, and to a flourishing culture of agricultural development in the Kingdom of Aragon in the fifteenth century and before.

The Catalan version is the better preserved of the two and so is used as the base text for this edition. The Spanish version, which may be a translation from the Catalan, has been consulted and its variant readings registered in the critical apparatus below. The Catalan text begins on folio 95r (line 15) of manuscript number 6437 of the “Fons Serrano Morales” housed in the Biblioteca Serrano Morales of the Municipal Library of Valencia, Spain, and extends just two folios to 97v. The Spanish version occupies folios 214v to 218r of manuscript io.2II of the Biblioteca Nacional of Madrid. Both versions appear, along with various other minor works on agricultural topics, at the end of a fifteenth-century copy of Ferrer Sayol’s translation (1385) of Palladius’s Opus agriculturae. Although the Capitols singulars may be a later accretion in this compendium of agricultural writings, Sayol’s mention of consulting other “palladios arromançados” (Capuano 1987 181v14-15) suggests an intense interest in agricultural writing in the late fourteenth-century, and it is perhaps to this period that the present text owes its existence.

Although I have already published the Spanish version in my semi-paleographic edition of manuscript 10.211 (Capuano 1987), this manuscript copy is deficient and cannot stand alone as our sole witness to this curious medieval planting calendar. Most significant in this regard, the Spanish version fails to give the headings which would indicate the months during which the prescribed labors should be performed. To further complicate our reading of this text, the scribe of ms. 10.211 fails to separate the text from the other minor works that precede and follow it. Indeed, it is only in light of the Catalan text that we can discern the presence, in the Madrid manuscript, of the same text in its Spanish version. However, because the physical condition of the Catalan manuscript renders the text almost illegible in places, the Spanish version, despite its deficiencies, has been indispensable in establishing the present reading.

To facilitate its consultation by modern scholars I have taken a number of editorial liberties with the Catalan text. Punctuation has been modernized (but not spelling), capitalization and non-capitalization have been standardized as per modern conventions, and column boundaries (symbols used to indicate paragraphs) have been removed. Column boundaries have not been respected. Although the enumeration of many crops is presented in list-form at the left margin, with instructions regarding their cultivation given in a separate column in the middle of the page, this layout is not reproduced below, but with no loss of meaning. Word and morpheme boundaries have not been modernized. Line numbers have been added for ease of reference to critical apparatus. My expansions of scribal abbreviations are indicated by underlining, and editorial corrections have been indicated by italics. The rationale for the latter should be sought by line number in the brief critical apparatus. Finally, an English translation has been provided at the end.

**CAPITOLS SINGULARS DELES LLAVORS QUE DEURAS SEMBRAR ENTOT LANY CASCUN MES**

1 Capitols singulars deles llavors que deuras sembrar entot lany cascun mes
   Janer
   Ciurons sembraras en la minuant luna de giner y tot altre legum saluant | fesols. Los millors ciurons sembraras en luna minua de febrer.
   Cebes peja llavor fan a plantar en luna crexent de giner y deuen esser elegides gro-| ses y que no hagen sino hun groell o ijj o iji y no pus auant, car com mes grall l hauran,
   valen mens; solament fan llavor de cebes porrer. Y quant les planta- | ras fes les prop dels graelles iij tallats fets en creu.
   Alls plantarars enterra magra y nols cal moltregar.
   Auena mesclada ab los grans | de ordi pots sembrar enla luna noua, tempera tant tot que sea sembrada faze luego a reggar.
   Carabaces | Cogombros [tempranos] | poras sembrar en aquest mes de giner en la luna noua y hauras l planta primerench.
   Comins, | llavor de porros, | llavor de albarginies
   poras sembrar enla luna creixent diginer.
   Llavor de ceba sembraras en luna minua, mas al plantar no guarts luna.
   Arros fa a sembrar ala exida de aquest mes en luna minuaj.
   Ceba redona fa en aquest mes a trepsantar.
   [fol. 95v] Erbolas, | cols, | bledes, | almols, | spinach, | ciurons | sembraras en luna minua.
   [Cebolla reondona se deue trasplantar en aquesta mes.]
Febrer
Linós se sembrara en febrer car es millor que de tothomany
empero que la llavor sia del estiu per passat.

Alfalc’ pots sembrar ab alguns grans de ordi en camp que sia ben llaurat.

Empeltar arbres, sembar celiandre en luna noua.

Març

Melons, cogombros, albuqueques, auena, dacça, ceba, fosols, porras sembrar en lluna mjunya. Llavor de cols, rauens, en lluna vella.

Fosols, dacça, o tramella; porras sembrar en lluna mjunya. Empeltar figueres, o altres arbres en lluna mjunya.

Maig


[fol. 96r] Juny


Agost

Spinax sembraran per tal manera: hages llavor vella de espinax y metras la en hun y canter y ompliras 10 canter daygua y remullaras iiij o v dies y trauras la del canter y leixala exugar al sol no deltot y sembre las. Tantost exiran ab quel loch que sia ben femat, y Letuges fan sembar. Canem fa a colliur.

Setembre

Ordí sembraran pera ferratja y pera meses. Alberginies: pren la alberginia ben madura y fendas la en quatre parts per llonch y prendras la pasta qui es dins y fora gitaras y paradura y aquella pasta remullar enaygua per viij o x jorns y trauras los graus dela pasta y llavor los has ab aygua y exugaras lo al sol y quant seran ben sechs estochals pera sembar en lo mes de giner. Cogombros: pren la llavor y fes ne semblant deles alberginies. Ceba poras sembar en aquest mes dela sement, y rauens.

Octubre

Ferratge poras encara sembar y quant lo hauras collit poras hi sembar dacça o mill. Faues poras sembar. Spinax poras sembar dela llavor vella y si non has de vella poras sembar dela nouella remullada aixi com damunt hauem dit, car non li noura res puix sent míquel sia passat. Herp pots sembar enquest mes.

[fol. 96v] Novembre

Arbres que pert fulla es pot hau de tresplantar en aquest mes [mas que en otro tiernpo del anyo].

Rosers, saluja, ruda, noquer, l’anemen poras ora tresplantar en lluna mjunya.

Ordi, faues, segol en lluna que sia noua. Arbres que tenen fulla, terongers, limoners, l’orros, [sitres], olúera y semblants fan ora a tresplantar en la luna creixent prop de plena.

Als, letuges en en lluna mjunya.

Dehembre

Carabaças primerenques sembraras per tal manera: faras hun gran clot llarich y estret y fendo fins al genoi y sia en lloch que haia abrich y defenssio dela terruita y dins lo clot metras fems de estable fins al mig lloch y sobre aquells fems de estable posarals y altres fems de bassa ben podrits y calçigars los huna gran estona com millor poras.

Que sien ben pijats y ompliras aquell clot de aygua y quant sia ple tul leixara star fins al altre dia y quant los fems se hauran beguda laguya, ab huna estaua qui es fust tu faras forats en aquells fems hau hun paln luny lo hu del altre y en cascun forat metras dos graus de carabaças.

Axi mateix poras metre dins lo clot dos graus de melons y dos graus d’albari- nies y de cogombros dins cascun forat que faras ab la estaqua y com hauem semt, ab facres les dites llavors aixi carabaças com los altres sements cobriras denit lo clot ab estores o rama o altres coses conajuntes y de dia tuls descobrias perque lo sol los pu- ga ben ferir.

Empero si de dia no feya sol sino que neusas o fes gelada o vent fret y de tremuntana no fan ha descobrir y en aco ha mester diligencia car huna mati nada de fret fara perdre tot lo maltret passat y nols cal molt regar souint si donchs no neyes que la cara dels fems fos molt exuta, o que no haues plogut.

Ceba rodena sembraran en aquest mes de dehembre en la luna mjunya en lloch que [fol. 97r] sia ben humit y regat y que y haia molt fems. E se muchas vezes rregada. Lo fret le fa gran dampnatge mas po- l ras lo cobrir ab palla de...
[\textquote{n}panic\textquote{] o semblant.}

Forment, l'ordi, l'espelt, l'guixes, l'pesols \textquote{podras sembrar en polvo. Ca non se lo prescian si bien la tierra es
vndaja.} Almolls, l'huaro de cols, l'hledes, l'spinat i

\textquote{poras sembrar en luna.mjnu a tost justats en huna era.} Alls,\nl'celiandre \textquote{simbraras en luna.mjnu a. Mes val sembrar}
celiandre \textquote{en giner i en febrer.}

Cebes redones \textquote{pera llauor pots ara plantar y guarda que l'hagen pochs graells i \textquote{\ce} es que non hagen mes de hu o ij i l'car aquells que han molts fan la llauor de \textquote{c-e l bes porreres, y l'fan a plantar tantost com comencen a grillar y fals hom \textquote{huna creu i ab coltell en la part dels graells.}

\textquote{January. Garbanzos you shall sow in the waning moon of January, and all other legumes except beans. The best garbanzos are sown in the waning moon of February. Onions for seed crop should be planted in the waxing moon of January and the fat ones should be chosen, and they should only have one or two or three shoots and no more, because the more shoots they have the less they're worth, producing only seed for leek-like onions. And when you plant them make two small cuts near the shoots in the shape of a cross. Plant garlic in weak soil; it doesn't need to be irrigated much. Oats mixed with barley seed can be sown in the new moon, [but as soon as they're sown irrigate them], Squash and [early] cucumber can be planted in this month of January in the new moon and you'll have early yields. Cumin, leek seed and eggplant seed can be sown in the waxing moon of January. Onion seed should be sown in the waning moon but when setting them out the moon doesn't matter. Rice should be sown at the end of the month in waning moon. Round onions should be transplanted in this month. Salad greens, cabbages, chard, orache, spinach, and garbanzos should be sown in waning moon. [Round onion should be transplanted in this month.]

February. Linseed is sown now in February because it's better than anytime in the year, although be sure the seed is from flax from the previous winter, and if you sow it in winter be sure the seed is from the previous summer. Alfalfa can be sown with a few grains of barley in well-worked soil. Graft trees, [sow] coriander in the new moon.

March. Melons, cucumber, gourds, oats, sorghum, onions, and green beans can be sown in the waning moon. Cabbage seed and radishes in the old moon. Green beans and sorghum or spelt can be sown in the new moon. Graft fig trees or other trees in waning moon.

[April] May. Olive trees can be grafted in the new moon. Eggplant, round onions should be planted [in the new moon]. Mustard is picked in this month and other plant seeds. Candied walnuts can be made in this month. Millet, Italian millet, henna and cabbage seed should be sown in the new moon.

June, July. Turnips should be sown in July, but be sure the soil is humid and tempered by rain. Carrots should be sown in loose soil and in waning moon, and water them immediately, and sow them sparsely. Water them every third day until they have sprouted. Onions, cabbages and leeks should be transplanted in July. Cabbage seed should be sown for September.

August. Spinach should be sown like this: take old seed from
spinach and put it in a container and fill the container with water and let it soak for four or five days and take it out of the container and let it dry in the sun but not completely, and sow it. They will sprout immediately, as long as the ground is well fertilized. Sow lettuce. Harvest lettuce.

September. Barley should be sown for forage and for grain. Eggplant: take the well-ripened eggplant and cut it in four parts lengthwise and take the paste inside and throw away the peel and soak the paste in water for eight to ten days and take the seeds out of the paste and wash them with water and dry them in the sun and when they are well dried store them to sow in the month of January. Cucumbers: take the seeds and do as with eggplants. Onions can be sown in this month from seed, and also radishes.

October. Forage crops you can sow now and when you have mown it you can sow maize or millet. Beans can be sown. Spinach can be sown from old seed, and if you don't have any old you can sow new seed, soaked just as we said above, because nothing will damage it after Michaelmas has passed. Vetch can be sown in this month.

November. Trees that lose their foliage can and should be transplanted in this month. Rose bushes, sage, rue, walnuts and almonds can now be transplanted in waning moon. Barley, beans and rye in new moon. Trees that keep their foliage, orange trees, lemon trees, bay-laurel, olive and similar trees trasplant in waxing moon close to full. Garlic and lettuce in waning moon.

December. Early garbanzos should be sown like this: make a large hole, long, narrow and knee-deep, and make it in a sheltered place, protected from the north wind, and fill the hole half-full with stable manure, and on top of the stable manure put well-rotted pond waste and trample it for a good long while as best you can, so that its well stomped down and fill the hole with water, and once filled let it sit till the next day. And when the manure has soaked up the water, with a wooden stick make holes in the manure, one hand-length away from each other, and in each hole put two garbanzo seeds.

In the same way you can put in the hole two melon seeds and two eggplant or gourd seeds and in each hole that you make with the stick, and once you have sown the aforesaid crops both garbanzos as well as the other seeds you should cover the hole with matting or branches or other things handy and during the day you should uncover them so the sun can warm them well. However if the day is not sunny, or if it snows or frosts or the North wind blows do not uncover it and be very careful in this regard because one morning of cold will cause you to lose all your work, and you should not water them much unless you see the surface of the manure dry out or unless it does not rain.

Round onion you should sow in the month of December in a humid and well-watered spot, and it should be well-manured. They should be watered often. The cold will damage them greatly but they can be covered with straw from Italian millet or similar material.

Wheat, barley, spelt, vetch and peas [you can sow in dry soil, because they aren't valued if planted in humid soil.] Orache, cabbage seed, beets, spinach you can sow in waning moon all together in the same bed. Garlic, coriander should be sown in waning moon, but it's better to sow coriander in January or February.

Round onions for seed can be planted now and see that they put out few stalks, that is, they should not have more than one or two because those that have more produce seed of leek-like onions, and plant them as soon as they start to sprout and make a cross on them with a knife where the stalks emerge.

APPENDIX III: TENTATIVE GLOSSARY OF PLANT NAMES

All scientific names given here are taken from Alcover; English equivalents followed by the symbol "("P)" are taken from Polunin, "("G)" from Grieve. This glossary is not meant to be precise, since many different species and often various genera shared and often even exchanged denominations in the Middle Ages, depending on locale and numerous other factors.

adaçca - sorghum (P), Sorghum vulgare.
alberginia - eggplant (P), Solanum esculentum Dun.
 albudeca - [a sort of tasteless, watery melon].
alfals - alfalfa (P), Medicago sativa L.
 all - garlic, Allium sativum L.
 armolles - orache (P), Atriplex hortensis L., or all-good (P), Chenopodium Bonus Henricus.
 alquena - hemp, Cannabis sativa.
adadutte - pumpkin, squash, gourd; either Cucurbita or Lagenaria.
cantem - hemp, Cannabis sativa L.
carabassa - pumpkin, squash, gourd; either Cucurbita or Lagenaria.
celad - onion, Allium cepa L.
 celian - coriander, Coriandrum sativum L.
cicer - chickpea, Cicer arietinum L.
cogombre - cucumber, Cucumis sativa.
com - cabbage, Brassica oleracea L.
comi - cumin, Cuminum cyminum.
dacca - sorghum, *Sorghum vulgare*.
espelta - spelt, *Triticum spelta* L.
ferratge - forage, grasses, fodder.
forment - wheat, *Triticum aestivum* L.
guixa - chickling pea (P), *Lathyrus sativus*.
herbolam - a mixture of various edible potherbs, such as spinach.
erb - vetch, *Ervum ervilia* L.
letuques - lettuce, *Lactuca* sp.
limoner - lemon tree, *Citrus limonum*.
millo - common or broom-corn millet (P), *Panicum miliaceum*.
mostassa - mustard, *Sinapis alba*.
nap - turnip, *Brassica napus*.
noguer - walnut tree, *Juglans regia*.
now - walnut, fruit of *Juglans regia*.
olivera - olive tree, *Olea europaea*.
ordi - barley, *Hordeum vulgare*.
pastenaga - carrot, *Daucus carota*.
panis - foxtail or Italian millet (P), *Setaria italica*.
pesol - pea, *Pisum sativum*.
porro - leek, *Allium porrum*.
rave - radish, *Raphanus sativus*.
salvia - sage, *Salvia* sp.
segol - rye, *Secale cereale*.
trameila - here, apparently a synonym of espelta.
taronger - orange tree, *Citrus* sp.

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