THE CARE AND NURTURE OF THE HORSE IN ANCIENT ROMAN TIMES

A Thesis

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by

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INTRODUCTION

Modern monographs on the horse in classical antiquity are not many. Hancar's work takes the story only as far as 1000 BC, and deals, in part, with the Near East. ¹ More recently, Anderson has published a competent work on the horse in ancient Greece. ² No work however, except for short articles and entries in classical dictionaries, has yet appeared on the horse in Roman times.

This essay is a modest beginning towards such a project. It restricts itself to a discussion of the care and nurture of the horse, and does not attempt to discuss veterinary science or the use of the horse as an instrument of war among the Romans. Neither is an attempt made (except incidentally) to use as evidence such representations of the horse as appear in the art of Roman times.

Hippiastrici is the Greek for veterinarians, especially those who treat animals of the farm, and includes those who minister to other domestic animals as well as the horse, since, as Varro says, "De medicina vel plurima sunt in equis et signa morborum et genera curationum . . . itaque ab hoc in Graecia potissimum medici pectorum


The Corpus Hippiatricorum Graecorum is a compilation no earlier than the ninth century A.D., and nothing is known of the authors mentioned. Xenophon's treatise *per iatrikes* was written to supplement his work *iatrike* on the duties of a cavalry commander. The *per iatrikes* discusses not only horsemanship, but also shows how a man is to avoid being cheated in buying a horse, how a horse is to be trained, and the like. It is the oldest extant complete professional treatment of the subject.

There is nothing in Latin comparable to Xenophon's essay on horsemanship. The only professional treatment of the veterinary science in Latin is that of Vegetius. However, other authors discuss the care and nurture of the horse among the Romans in works devoted to larger subjects. Among them, the more important are Columella, who discusses the horse in Book VII of his *De Re Rustica*; Varro in Book II of his *Rerum Rusticarum*; Palladius,

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5Xenophon mentions a certain Simon, author of an earlier treatise on horsemanship, but of him and his work nothing further is known.


7Columella, *De Re Rustica* (in *Scriptores Rei Rusticae Veterum Latinarum*, V. 2, ed. J. G. Schneider), 1794. Hereinafter referred to as Columella.
Book VIII of his *Opus Agriculturae*; and Vergil in Book III of his *Georgics*. Other information of a diverse nature is found in Book VIII of Pliny's *Historia Naturalis*; passim in Aelian's *De Natura Animalium*; and in Oppian's *Cynegastica*.

It remains to enumerate the several uses for which the horse was bred in Roman times. First and foremost, the horse was bred as an instrument in warfare. The Romans, to be sure, except in the earlier Republic, did not support a significant cavalry arm; nonetheless, they depended upon the *socii* and *auxilia* for cavalry in later Republican and early Imperial times, and the horses for this cavalry were undoubtedly bred, if not in Italy principally, certainly in other parts of the Roman dominion, particularly Spain and North Africa.

The horse was also bred as a draft animal for agricultural usage. In this connection, since the mule is more efficient for many purposes than the horse, the horse was often crossedbred with

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11 Aelian, *De Natura Animalium* (Teubner, ed. R. Hœcher), 1864-1866.

the ass to produce the mule. Columella tells us that it was very profitable to hire out the horse as a stud animal for breeding mules. 13 Ausonius Pompe enumerates three uses for the horse in domestic economy, i.e., pulling, tilling, and breeding. 14 No doubt, the most common domestic use of the horse was as a draft animal. 15

Among other uses of the horse among the Romans were: (1) for the spectacles (e.g. the circus); (2) for the public post (currens publicans); and (3) for hunting.

In the following pages the horse in Roman times will be discussed under these headings: (1) the desirable qualities of the horse; (2) the principles of breeding; (3) the care of the foal; (4) the stable; (5) nurture; (6) hoof and horseshoe; and (7) the aging of the horse.

13Columella, VII.27.
14As quoted in A. Hauser, Zur Römischen handwirtschaft und Haustierzucht, Hannover, p. 36.
15See Vergil, Georgica, III.170-171.
QUALITIES OF A GOOD HORSE

Columella divides horses into three classes: thoroughbred stock (materies generosa); the stock used for mule-breeding (materies malaris); and the common stock (materies vulgaris). ¹
The first of these supplied animals for the circus and races. As much as possible these horses were purely bred, with rigid family trees being kept, and foals being named and branded. ²
The second group, or materies malaris, was profitable to raise. Columella remarks that the offspring of these animals sold for as much money as those of the first group. ³ Yet they were not purely bred, but the product of many stocks incorporating cross-bred offspring of pure material with others. ⁴ Military horses stemmed from the materies malaris. Finally, the common (materies vulgaris) work-horses originated in the materies vulgaris group.

¹VI.27.
²Alphonse Hauger, op. cit., p. 59.
³VI.27: Est malaris, quae pretio fetus sui comparatur generoso.
⁴Hauger, loc. cit. See also Georgics, III, 157: Post partem cura in vitulos traducitur omnis; continuoque notas et nomina gentis imbrunt.
Of the desirable physical characteristics of the thoroughbred, Vegetius points to a full and hooked head, outstanding eyes, narrow nostrils, and a wide jaw. Palladius mentions short, acute ears.

5 III. 6: grande et aduncum caput. See also Palladius, IV. 13; Columella, VI. 29: exiguum caput; Virgil, Georgias, III. 80: argutum caput; Varro, II. 7: caput habet non magnum; Oppian, I. 180: Πηδον... Καρυον. See also H. Horace Hayes, Points of a Horse, London, 1897, p. 140. "Although it is impossible to draw any hard and fast rule on this subject, we may infer that a comparatively small head is not a desirable point in horses whose success depends on their power of breathing."

6 III. 6: extantes oculi; see also Palladius, IV. 13; oculi magi; Columella (VI. 29) and Varro (II. 7) also stress the color of the eyes: oculis nigris. See Hayes, op. cit., p. 151: "Horses which show a good deal of white in their eyes, as the term is, are usually suspected of being vicious...." Oppian calls for clear and fiery eyes (I. 180): ὁρμα τρόπον πυγματον.

7 III. 6: angustae nares. But see Oppian, I. 180: ἐφερεῖν ὅψεις. Varro, II. 7: naribus non angustis; Palladius, IV. 13: narebus patulis; Columella, VI. 29: naribus aperta. See Hayes, op. cit., p. 140: "...the broader and more open the nostrils are,...the more perfect the breathing power."

8 III. 6: latae maxillae.

The neck is to be strong and rigid, and upright. The mane should be thick, long, dark, and it was to hang down on the right side of the neck. Oppian calls for a neck curved as the crest of a plumed helmet.

A broad and muscular chest was greatly desired. Vegetius mentions large ribs (maiores costae). Shoulders were to be big, straight, and broad. The horse's belly should be short, and

Vegetius, III.6: robusta et rigida; Columella, VI.29: cervice mali lataque nec longa.

Georgics, III.79: ardua cervix.

Aelian's story about the mane of the proud mare is interesting. She would not consent to mate with an ass until the mane was cut off. Aelian, De Natura Animalium, II.8. A similar story is told in Columella, VI.25.

Georgics, III.86: densa iuba; Columella, VI.29; Varro, II.7: iuba cruba; Palladius, IV.13: coma profusior.

Vegetius, III.6: iubae ultra gemma pendentes.

Varro, II.7: iuba fusca.

Georgics, III.86: dextro iactata; Varro, II.7: implicata in dexteriorum partem cervicis; Columella, VI.29: per dextram partem profusa.

I.180: δεινη ... χατηξωλα λόφον νεισει τριφέλεω.

Columella, VI.29: lato et musculorum toris numero so pectore; Palladius, IV.13: pectus late patens; Varro, II.7: pectus latum et plenum; Virgil, Georgics, III.81: luxuriatique toris animalum pectus; Oppian, I.180: τουλυ πεταν ατρον.

Columella, VI.29: grandibus armis.

Id., VI.29: rectis armis.

Varro, II.7: umerais latis.

Georgics, III.80: brevis alvos.
24 drawn in, 25 his flanks curled, 26 long, and should converge downward. 27 The tail is to be full, 28 long, 29 curly, and bristly. 30

The legs are to be straight, 31 tall, and flexible, with

large bones; 32 the knee well-turned, 33 small, 34 round, and not

turned inwards. 35 The horse's forearms are to be very powerful. 36

The hoof is important. Its essential characteristics are hardness, 37

\begin{itemize}
\item \textbf{24}Columella, VI.29: ventre substricto; Varro, II.7: ventre modico; Vegetius, III.6: venter exhaustus.
\item \textbf{25}Columella, VI.29: lateribus inflexis.
\item \textbf{26}Palladius, IV.13: latus longissimum.
\item \textbf{27}Varro, II.7: lumbris deorsum versus pressis.
\item \textbf{28}Oppian, I.185; πόλλα ... ὕποπνίν.
\item Vegetius, III.6: cauda silvosa; Palladius, IV.13: cauda profusior; Varro, II.7: coda ampla.
\item \textbf{29}Columella, VI.29: cauda longa
\item \textbf{30}Ad., cauda crispa; Varro, II.7: coda subcrispa.
\item \textbf{31}Columella, VI.29: cauda setosa.
\item \textbf{32}Ad., cruribus rectis; Varro, II.7.
\item \textbf{33}Columella, VI.29: cruribus altis.
\item \textbf{34}Ad., cruribus mollibus.
\item \textbf{35}Vegetius, III.6: ossia grandia.
\item \textbf{36}Columella, VI.29: tereti genu.
\item \textbf{37}Ad., genu parvo; Varro, II.7: genibus ne magnis.
\item \textbf{38}Varro, II.7: genibus rutundis.
\item \textbf{39}Columella, VI.29: neque introrsum spectanti.
\item \textbf{40}Vegetius, III.6: tibiae validissimae.
\item \textbf{41}Columella, VI.29: duris ungulis.
\end{itemize}
height, roundness, width, and fullness. The crown above the hoof is to be of moderate size.

As for the body as a whole, Palladius is interested in the muscular qualities, and Vegetius wants a long, rather than high appearance. Columella favors a body that is large, high, and erect, nimble in appearance, and rounded so far as the shape permits.

Finally, qualities other than physical, are recognized as contributing to the making of a good horse. Palladius is interested

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42 Id., ungulis altis.
43 Id., ungulis rotundis: Palladius, IV.13; ungularum rotunditas.
44 Vegetius, III.6: ungulae diffusae.
45 Id., ungulae plenae.
46 Columella, VI.29: quibus coronae mediocres superpositae sunt. Oppian wants a round hoof which runs high over the ground and close-grained, bony, and strong. I.190: . . . περίπρομος διπλή δύνα μαλιτρών τυχίνη, κεραστέκε κρατάται.
47 IV.13: corpus omne musculorum densitate nodosum.
48 III.6: stature magis in longitudine quam in altitudine. Oppian too, likes a long body. I.185: διοικότειν διέγεσιν. But see Hayes, op. cit., p. 159: "...a short body is a desirable point in the race-horse and jumper. In draught, also, any undue length of body, is a disadvantage."
49 VI.29: Sic universam corpus compositum, ut sit grande, sublime, erectum, ab aspectu quoque agile, et ex longo, quantum figura permittet, rotundum.
in goodhumor, an animated spirit, and agility. Varro emphasises the importance of good stock, and relates that a horse is good if it vies with its mates in racing out on the pasture. Also, if a river is to be crossed, the excellent stallion will run with the leaders, and not wait for the rest of the herd. Similarly, he will cross a ditch or bridge or a river without flinching. Columella lists two further points of a noble animal: it will not be alarmed as strange sights of sounds; it can be readily aroused when quiet and readily quieted when aroused.

50 IV.13: hilaritas, laesitas, agilitas.
51 II.7: de stirpe magni interest qua sint.
52 Ad., equi boni futuri signa, si cum gregalibus in pabulo contendit in currando; Columella, VI.29: ante gregem proculurit.
53 Ad., si cum flumen travelsum est gregi in primis progriditur et non respectat alicos.
54 Columella, VI.29: fossam sine cunctatione transiit, potem flumenque transcendit.
55 VI.29: si nec quae conspectu novae rei nec qua auditu terretur.
56 Ad., qui sunt ex placido concitati, et ex concitato mitissimi.
PRINCIPLES OF BREEDING

Good horse breeding was of particular interest to ancient writers concerned with agriculture. As a result, we can examine principles of breeding as practiced in Italy in ancient times.

To begin with, Columella stresses the necessity of a good general overseer (actor).\(^1\) For the actual coupling process the help of a groom (origa) is advocated.\(^2\)

The stud horse (admissarius) or pecus equinum) is to be well cared for; kept in the grassiest pastures; and exposed to sun in winter and cool places in summer.\(^3\) Before mating he is to be especially well fed;\(^4\) after mating to be given extra barley, and also water two times a day.\(^5\) The stud is to be given the most

\(^1\)VI, 27: actorem industrium.

\(^2\)Varro, II, 7: per origem; sic appellatur qui qui admittit. Note that in Varro (II, 7, 9) the form auriga is used. Origa was an older and popular form of auriga (Loeb edition, p. 386).

\(^3\)Palladius, IV, 8: sed his armentis pascua legamus pinguisima hieme aprica, frigida et opesa provideamus aestate. Also Varro, II, 7: equinum pecus pascendum in pratis potissimum herba, in stabulis et praesepibus arido faeno.

\(^4\)Columella, VI, 27: appropinquante vere hordeo ervoque saginandum.

\(^5\)Varro, II, 7: cum peperunt, hordeo adiecto, bis die data aqua.
careful attention as well as an ample diet. It is important to separate the valuable stallions from the mares when they were not breeding, either in separate pastures or in the stables. This is not necessary in the case of the common stock however: they are allowed to pasture together for the entire year.

Our authorities differ as to the number of mares a stallion can conveniently serve in a breeding season. Palladius suggests twelve to fifteen; Columella as many as twenty; Varro not more than ten; and Pliny less than fifteen.

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6Columella, VI.27: summam sedulitatem et largam satietatem.

7Ad, equos autem pretiosos relique tempore anni removere oportet a feminis...longinquus pascua...ad prassephis continentur. Also Palladius, IV.8: mediis aliquibus spatiis separantur. Note that the most important word in the passage from Columella is pretiosos. These, and other strict rules do not apply to the common stock. When the ancients talk of breeding, they refer almost exclusively to thoroughbreds.

8Columella, VI.27: vulgaribus equis passim maribus ac feminis pasci permittitur; Palladius, IV.8: eterae passim toto anno inter pascua.

9IV.8: non amplius quam duodecim vel quindecim debemus admittere.

10VI.27: nec minus quam quindecim nec rursus plures quam viginti unus debet implere.

11II.7: singulos in feminas denas.

12VIII.65: nec tamen quindecim initus eiusdem anni valet tolerare.
With regard to the age at which a horse can breed, Varro is most general, maintaining that from three to ten years is best. Pliny thinks that one can begin breeding at two years but that it is better at three. Palladius and Columella specify the age of the mare as well as the stallion. Palladius would not use a stud before the fifth year; while he would have the mare impregnated at two years, and warns that after the mare’s tenth year the issue will be inferior. Columella advises the use of the stud from the third to the twentieth year; while the mare can start bearing at three, but should not be used after ten lest her offspring be slow and lazy. Although mares of the common stock were to breed each year, the better horses were to foal only every other

13 line: videmus ne sint minores trimes.
14 line: coitus vero sequinottie bimo utrimque vulgaris, sed a trimatu firmior partus.
15 line: actas incipientis admissarii quinti anni initio esse debebit.
16 line: Ec. 8. He copies Columella almost word for word here. See note 18 below.
17 line: isque admissurse post trimatum usque in annos viginti plerumque idemus est. Pliny (VIII.66) says that horses breed until thirty-three years of age. He is talking of the race horses which are relegated to study farms at the age of twenty; generat mas ad annos XXXIII, utpote sum a circo post vicesimum annum mittantur ad subolem.
18 line: feminam binam recte concipere, ut post tertium annum enixa fetum educet; samdesque post decimum non esse utilem, quod ex annosa matre tarda sit atque imere proles.
19 line: Columella VI.27: vulgari feminae solanne est omnibus annis purere.
year to insure good quality milk for the offspring. Varro thinks that the mare will last longer for breeding and will produce better colts if bred every other year.

The best time to breed the thoroughbred stock is in March, about the time of the vernal equinox, so that the foal will have good pasture immediately upon being born. The mare is delivered in the twelfth month. An unwilling horse is aroused artificially. Columella suggests stirring up a mare by letting an inferior horse approach her, and then substituting a better stallion. But the

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20 Id., generosam convenit alternis continere quo firmior pullus lacte materno laboribus certaminum praesperetur; Palladius, IV.6: alternis annis...ut pullis puri et copiosi lactis.

21 II.7: alternis qui admittant, diurniores equas, meliores pullos fieri dicunt.

22 Palladius, IV.8: hoc mense (March).

23 Columella (VI.27) sees no such need regarding common stock: nec admisserae certa tempora servatur.

24 Columella, VI.27: generosis circa vernum equinocatum mares inmaenterunt, ut eodem tempore, quo conceperint, iam lactis et herbidas campis post annum parve ems labore fetum educant; Pliny, VIII.66: coitus verno equinoccio; Varro, II.7: horum fœtûs initium admissionis facere oportet ab equinoccio verno ad solstitium ut parvús idoneo tempore sit.

25 Pliny, VIII.66: duodecimo gignunt. Columella, VI.27: mense duodecimo partum edunt; Palladius, IV.8: ecurum natura est partum spatio duodecimi mensis absolvere. Varro (II.7) says it will be the tenth day of the twelfth month; duodecimo anim mense die decimo aitn nasci.

26 VI.27: nonnumquam ignobilis quoque ac vulgaris elicet epidinem eosundi...et iam patientiori generosior equus imponitur.
more common way is to anoint her parts with a crushed squill. 27
To arouse a stallion, touch a sponge to the parts of a mare in
heat and then apply it to his nostrils. 28 Varro recommends the
same but adds the use of a crushed squill to the process. 29 During
the mating season, the stud is to be admitted twice daily. 30 To
facilitate copulation, the mare may be tied down. 31 Pliny records
a case in which a stallion was so old that he has to be lifted
upon the mare, 32 but this was surely rare.

Great care is to be taken with a pregnant mare (praegnans 33 or
gravida 34). In addition, Columella advocates a good supply of

27 Id., rursus si aqua marem non patitur, detrita scilla
naturalis eius linuntur, quae res ascendet libidinem; Palladius,
IV.8: trita scilla naturalis eius infecta libidinem contrahunt.

28 Columella, VI.27: quod si admissurium inere in venerem est,
odore proritatur, detersis spongis feminae locis, et ad moto
naris equi.

29 II.7: scillae medium conterunt cum aqua ad mellis crassit-
tudinem; tum ea re naturam equae, cum menses ferunt, tangunt;
contra ab locis equae narès equi tangunt.

30 Varro, II.7: admittere operet, cum tempus anni venerit,
bis die, manè et vesperè.

31 Id., aqua alligata.

32 VIII.66: Opunte et ad quadraginta durasse tradunt adiutum
modo in attellenda priore parte corporis.

33 Columella and Varro.

34 Pliny and Palladius.
fodder. She should not be overworked. Cold weather is considered to be injurious. Miscarriage can be caused by enclosing the pregnant horse in too narrow a space. Varro recommends that in the stables, the ground be kept dry; the doors and windows shut; and the poles separate each mare to prevent fighting.

We cannot be certain whether or not inbreeding was practiced by the Romans. The fact that the ancient sources have nothing to say on the matter would seem to show that it was not.

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35VI.27: inde major praegnantibus adhibenda cura est, largeque pasco firmandae; Varro (II.7) warns against over-feeding or under-feeding: praegnatam neque implere cibo neque esurire oportet. Palladius (IV.8) says that she will not endure hunger: nec famem... tolerat.

36Columella, VI.27: ac neque opere neque cursu exercantur; Varro, II.7: videndum ne aut laborent plusculum; Palladius, IV.8: deinde gravidae non urgeantur.

37Columella, VI.27: tacto contineantur et neque frigori committantur; Varro, II.7: aut ne frigida locis sint; Palladius, IV.8: nec frigus tolerant.

38Columella, VI.27: nec in angusto clauso, ne aliae aliarum conceptus elidunt; Palladius, IV.8: nec inter se loci comprimantur angustiis.

39II.7: itaque in stabulis et umore prohibere oportet humum, clausa habere ostia et fenestras, et inter singulas a praessepe intericere longurios, qui eas discernant, ne inter se pugnare possint.

40There are stories in Pliny (VIII.64) and Oppian (240-270) of horses going mad and killing themselves upon finding out that they had been mated with their dam. Hauger, op. cit., (p. 60) uses these stories as evidence that inbreeding of thoroughbreds was practiced by the ancients, as it is today.
CARE OF THE FOAL

As stated previously, it was planned that the foal (Fetus,\textsuperscript{1} partus,\textsuperscript{2} or pullus\textsuperscript{3}) be born in the spring because of the availability of good pasture. Since the qualities desired in a horse are apparent already when the animal is a foal and indicate a good colt as well as an outstanding matured horse, the Romans were concerned with the care of the foal. It is important that the foal not be touched upon birth in order to avoid harming it.\textsuperscript{4} The young animal is to live with its mother in a roomy and warm place so that the foal be not injured by the cold or by its mother in narrow quarters.\textsuperscript{5} Care must be taken that the dung in the barn not burn the foal’s hooves.\textsuperscript{6}

\textsuperscript{1}Pliny.
\textsuperscript{2}Varro and Pliny.
\textsuperscript{3}Columella and Palladius.
\textsuperscript{4}Columella, VI.27: minime manu contingendus pullus erit; Varro, II.7: pulli ecurarum nati manu tangendi non sunt, quia eos tactus laedit assiduus.
\textsuperscript{5}Columella, VI.27: tantum cura adhibetur, ut et ampio in angustiis sum obterat. Palladius refers to the danger of coldness too (IV.8); defendantur a frigore.
\textsuperscript{6}Columella, VI.27: providendumque, ne stercore ungulas adurat; Varro, II.7: ne ungulas comburat stercus tenelles.
Gradually the colt must be induced to leave the stable. Varro would have him in the pasture with its mother within ten days after birth. Columella thinks that the union of the colt with its mother in the pasture should come when the colt is stronger. He alludes to the love of the mare for her colt, as does Fliny in a more affirmative manner.

Varro gives instruction regarding the handling of the colt once it is stabled at the age of five months. There should be barley-meal with bran and whatever other food they fancy. Barley and bran is to be continued during the nursing period. As long as the colt is with the mare, handle it occasionally so that it

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7 Columella, VI.27: paulatim deinde producendus erit.
8 II.7: in decem diebus.
9 VI.27: mox cum fumior fuerit.
10 Id., in eadem pascua, in quibus mater est, dimittendus, ne desiderio partus sui laborat aqua.
11 VIII.66: praeterque ceteras fetum diligit.
12 II.7: quinquemestribus pullis factis, cum redacti sunt in stabulum.
13 Id., obiciendum farinam bordaciam militam cum furfuribus, et siquid aliud terra natam libenter edent.
14 Id., anniculis iam factis dandum bordum et furfures, usque quoad erunt lactantes.
will not be scared when taken away from its mother. Also, a harness should be suspended so that it becomes accustomed to the sight and sound of it.

Palladius recommends breaking a horse in at two years, but Columella allows this age for draft animals only. Varro recommends three years, as does Columella for those steeds to be used in the races (cortamen). It is at this age that the horse is growing fastest and is strengthening its muscles. A boy should mount the horse occasionally, first lying on its back, then sitting up.

Varro points out that horses must be trained differently according to their uses. A gelding (pantherius) is more steady than a stallion.

15 Id., interdum tactandum, ne, cum sint deimi, exterreantur.
16 Id., eademque causa ibi frenos suspendendum, ut oculi consuecant et videre corum faciem et e motu audire crepitus.
17 IV.8: nunc domandi sunt pulli, ubi tempus bimae aestatis exsererint. As does Pliny (VIII.65) for service other than circus use: itaque cum bimis alio subiungantur imperio.
18 VI.29: equus bimus ad usum domesticum recte domatur.
19 II.7: sed melius post trimm; although he admits that some breeders advocate the age of eighteen months.
20 VI.29: certaminibus autem expleto triennio; and Pliny, VIII.65; non ante quinque annos ibi certamen acipient.
21 Varro, II.7: tum enim maxime crescere as lacertosum fieri.
22 Id., interdum imponere iis puerum bis aut ter proum in ventrem, postea iam sedentem.
23 II.7.
and can be better used for road service, while more spirited horses are needed for the military.  

24

\[ \text{Ad.}, \quad \text{quod qui ad rem militarem, quod ut ibi ad castra haverer}
\]
\[ \text{Volunt acres, sic contra in viis habere malunt placidos.} \]
As Vegetius points out, domestic horses, unlike wild animals are unable to endure the vicissitudes of nature. Therefore they are kept in stalls in the winter. Among the Romans, these enclosures were an important factor in maintaining the health of the animals. Vegetius remarks that they often afford a good insurance against illness. Their significance is seen in the concern of the emperors who decreed that although under certain conditions construction on other buildings could not be undertaken, stables could be erected.

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1 Vegetius, II, prae: prae quod barbarorum animalium alia natura et ad omnes innumerum durium corpus est.

2 Lafay (Daremberg-Saglio) maintains that *equile* is the technical term used for horse stall in classical literature while *stabulum* is a more general term meaning an enclosure for any animal. The evidence bears him out. Cato (de agri cultura, VIII.14) and Suetonius (Caligula, IV) use *equile* to mean a horse stable or stall. *Stabulum* is used to refer to a horse compound by Varro (II.7) and in the Codex Theodosianus (15.1.16, et alibi). But *stabulum* is also used by Virgill (Georgics, III.295) to mean a sheep enclosure and by Columella (VI.23) to refer to a cowshed. Lafay, however, omits to note that Varro (II.7) also uses the term *pressarium* when talking of a horse stable. This too is a general term for an animal enclosure. Cato (Id., XIV) uses it in connection with cattle.

3 Vegetius, II, prae: nostra vero iumenta et moliors generis sunt et tectis frequentioribus assuetae calidisque stabulis imbata.

4 Id., I.56: melius enim est diligentiore studio conservare saepe quam aegritudinibus praestare remedia.

5 Codex Theodosianus, 15.1.16; 15.1.35; 15.1.37.
There is to be free space in and around the stable; best exposure is to the south; but an opening to the north is necessary for airing in the summer. Falldius recommends sun in the winter, and shade and cool places in the summer. Vegetius also stresses the importance of light.

Inside the stable, the floors are to be made of wood. The object is to get a hard surface. It was extremely important to keep the floor dry for protection of the hoof. Columella advocates periodical cleaning, and the spreading of chaff over the ground. There should be a ditch (fossa) to receive the urine, which should then be drained away by a canal (cuniculum).

6 Vegetius, I. 56: aperit locis; Columella VI. 27: nec in angusto loco. See also M. Horace Hayes, Stable Management and Exercise, p. 224: "A stable should not only be roomy so as to afford the horses a comfortable abode, but should also be fairly lofty...."

7 Falldius, I. 21.

8 IV. 8: hieme aprica, frigida et opâca provideamus aestate.

9 I. 56: luminis plurimum stabule infundi oportet.

10 Columella, VI. 30: stabula roboreis axibus constrata.

11 Vegetius, I. 56: sed roboris vivacis dunitia et soliditate compactum. Nam hoc genus ligni equorum ungulas ad saxorum instar obdurat.

12 Varro, II. 7: umore prohibere oportet humum; Columella, VI. 30: curaque fuerit ut stabulentur sicco loco, ne humore inadescent ungulas. See also Hayes, op. cit., p. 226: "...the whole of the ground surface should be laid down with a material which is thoroughly damp proof...."

13 VI. 30: diligentia subjinde emundata fuerit humum...palaeae superiectae.

14 Vegetius, I. 56: Fossa praeterea, quae lotium recipiat, deductorium debet habere cuniculum, ne pedes iumentorum redundane urina contingat.
After a mare foaled, Varro felt, warmth was essential to the well-being of the animals and, to secure this, the doors and windows should be kept shut.\textsuperscript{15} If necessary, a fire should be built.\textsuperscript{16} Poles (longurii) should separate each mare to prevent fighting.\textsuperscript{17} A harness should hang in the stable to enable a colt to get accustomed to its sight and sound.\textsuperscript{18}

The individual compartments (loculi) or the feeding crib (patena) were made either of marble, stone, or wood,\textsuperscript{19} probably depending on the wealth of the owner. Schlieben reports a stable near the Bay of Centurii in Sicily.\textsuperscript{20} Here, the feeding trough is of brick, and is divided into compartments, as Vegetius suggests. In addition, there is a small hole in the wall above each space, probably for putting the halter through. Vegetius also mentions a

\textsuperscript{15}II.7: clausa habere ostia ac fenestras.
\textsuperscript{16}Id., si frigus erit, in aquile faciendus ignis.
\textsuperscript{17}Id., inter singulas a praesepibus interiicere longurios, qui eas discernant, ne inter se pugnare possint.
\textsuperscript{18}Id., frenos suspendum, ut eculi consuecant et videre corum faciem et e motu audire crepitus.
\textsuperscript{19}Vegetius, I.56: Patena quae a pullatur, hoc est alveus ad hordeum ministrandum, sit munda semper, ne sordes aliqua cibariis admiscantur.
\textsuperscript{20}A. Schlieben, \textit{Die Pferde des Altertums}, Neusied and Leipzig, p. 128.
feeding rack (cratis). It must be neither too high nor too low.

No doubt, wealthy owners maintained attendants to care for their stables. Overbeck tells of a stablehand's room adjoining the stable at Pompeii.

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21 Vegetius' interest in the common farmer is indicated when he provides the terminology for certain features of the stable in the common tongue. For example, I, 56: he tells us that occa is the word for cratis, a stable.

22 I, 56: Cratis...nec nimis alta sit, ne cum iniuria guttur extendatur, nec nimis humilis, ne conterat oculos et caput.

NOURISHMENT

Ancient agricultural writers felt that a horse's nourishment was best taken in grass-rich pastures. Varro recommends grassy meadows for stud, while Palladius advocates the grassiest pastures for mares. Columella gives an excellent description of the ideal feeding ground. It is to include a large amount of marshy and rolling land. Water is essential, and the grass is to be soft rather than high and straight.

As has been noted, Varro urges caution against over-feeding a pregnant mare, and Columella would have the animal fed generously. The latter gives the same advice regarding studs. Before a stallion is to be used for breeding purposes, its generous diet should include barley (hordeum) and bitter vetch (ervum). Increased feeding

1II.7: equum pecessum in pratis potissimum herba, in stabulis ac præseepibus arido faeno.

2IV.3: pascua pinguisima.

3VI.27: gregibus autem spatiose et palustria montana pascua eligentia sunt, rigus nec unquam siccanae...mollibus potius quam proceris herbis abundatia.

4II.7: praegnatem neque implere cibo neque esurire oportet.

5VI.27: largeque pascuo firmandae.

6Id., largam satiatement.

7Id., eoque tempore quo vestatur a feminis, reborandus est large cibo, et appropinquante Vere hordeo ervoque saginandus.
increases a stallion’s strength in mating and transmits stronger seed to its offspring. Once a mare has given birth, Varro recommends, she is to be allotted extra barley, and water twice a day. When a foal is in the stable, barleymeal (farinum hordeacium) ground with bran (furfur) is to be given to it, together with whatever other product of the soil they crave.

Varro suggests feeding a stud horse on dry hay (stido faena), but barley seems to be the most common form of nourishment in the stables. Vegetius warns the stablehand to take care that the food not be dirty, stony, or mouldy, nor too fresh. The barley is not to be stale. Horses should be fed slowly. Water is to be available, and should be clear and cool, and running.

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6 Id., ut veneri supersit, quantoque fortior inerit, firmiora semina praebat futurae stirpi.

9 II.7: cum pepererunt, hordeo adiecto, bis die data aqua.

10 Id., cum redacti sunt in stabulum, obiciendum farinam hordeacium molitum cum furfuribus, et siquid aliud terra natum libenter edunt.

11 Id.

12 I.56: ne aut pulverulentum sit aut lapidosum aut mucidum.

13 Id., non...certe recens de aereis sumptum et ipsa novitate praefervidum.

14 Id., vetustate corruptum.

15 Id., quidquid anim paulatinum acceperint, legitima digestiones conficiunt.

16 Id., aqua etiam limpida ac frigida et perennis ac profluens ministranda est....
In order to fatten a lean horse, Columella recommends roasted wheat (*torrefacto tritico*) rather than barley. The horse is also to have wine to drink, until little by little a diet of beans and pure barley is substituted.\(^{17}\)

Varro recommends feeding a horse a mash (*farrago*) at three years old in order to "purge" the horse.\(^{18}\) Isidore tells us that this *farrago* is a mixture of green barley.\(^{19}\)

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\(^{17}\) *Columella*, VI.27: si sanis est macies, celerius torrefacto tritico, quam hordeo reficitur. Sed et vini potio danda est, ac deinde paulatim eiusmodi cibi subtrahendi immixtus hordeo furfuribus, dum consuus est faba et puro hordeo ali.

\(^{18}\) *II.7*: a quo tempore farrago dari solet. Hanc enim purgationem maxime necessaria quino pecori.

\(^{19}\) *Stymologicorum sive Origenum*, XVII.3.14: farrago a farre dieta. Est enim herba hordeacea adhuc viridis, nee dum granis ad maturitatem turgentibus. See also *Nemisionus*, *Synagogica*, 283: *...sub vere novo farragine molli cornigades....*
HOOF AND HORSESHOE

Great concern about the horse's hoof (ungula) is to be found among ancient writers. Indeed, the ringing sound of a clanging hoof was music to the ears of the poet Virgil.\(^1\) The hoof is the most delicate and at the same time the most indispensable part of a horse.\(^2\) Vegetius stresses the need of caring for the hoof.\(^3\)

Moisture is recognized as harmful, as is the presence of dung in the stable.\(^4\) Palladius recommends putting a horse on hard ground to improve the durability of the hoof.\(^5\) Protective coverings for the hoof are also used. The *solea espartea* is a kind of shoe made of esparto grass.\(^6\) Nero went so far as to shoe his horses with silver.\(^7\) But the *solea* was not a horseshoe in the modern sense; it was not nailed to the horse's foot.

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\(^1\) *Aenidae*, VIII.595-6: ...*it clamor, et agmine facto quadrapedante putram sonitu quatit ungula campum.*

\(^2\) Reischach (Daremberg and Saglio, *s.v.*mulomedicus) p. 2011.

\(^3\) Jub., *prudentius consilium est pedum tueri sanitatem quam passionem curare.*

\(^4\) *Id.*, *corroborantur autem ungulas, si fumenta mundissime et sine stercore vel humore stabulentur; Varro, II.7: ne ungulas comburat sterco tenellas; Columella, VI.30: stabula roboreis axibus contrata.*

\(^5\) *IV, 8: ne adeae mollibus locis nata ut ungularum firmitas de asperitate nil sentiat.*

\(^6\) *Columella*, VI.12.

\(^7\) *Reischach, loc. cit.*

\(^8\) *Seutonius*, *Nero*, 30.
This raises the question whether or not the ancients had horseshoes in the modern sense of the word. The arguments against its existence are as follows: (1) in no case in Roman art is a horseshoe represented on a horse's foot, even where the artist shows attention to the smallest detail. 9 (2) those shoes that have been found among Roman remains probably date from medieval, and not ancient, times. 10 (3) shoes are not essential in mountainous areas. Wild asses are able to subsist on rocky ground. 11 (4) Suetonius records a muledriver stopping along the road to shoe his mules (ad haliendam mulas). 12 This would be impossible if he were using horseshoes of the modern kind. 13

Those who maintain that the nailed-on-shoe did exist in Roman times argue as follows: (1) according to a notice in the Revue Archéologique a shoe which was apparently attached with nails was found in strata of Hallstatt II. 14 (2) Fraser argues that shoes have


11Fraser, loc. cit.

12Suetonius, Vespasian, XXIII.


been found under medieval paving and thus belonging to ancient
times. 15 (3) a shoe was found in Salsburg that has been dated not
later than Trajan's reign. 16

The probabilities are that horseshoes of the modern type were
used in Roman times, but to an extremely limited degree. However,
we cannot maintain that there were no horseshoes at all. It is
ture that Vespasian's muleteer could not have been nailing shoes
to his animals, but this proves that Vespasian's mules were not
shod with shoes of the modern kind and nothing more. Fraser's
conjecture that more horseshoes have not been found because they
may have been resoled for further use is not implausible. 17 Yet
he is probably incorrect in identifying the soles with a nailed-on
shoe.

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15 Fraser, loc. cit.
16 Id.
17 A. D. Fraser, "The Roman Horseshoe," Classical Journal, 32
THE AGING OF THE HORSE

A horse's age is determined by an examination of its teeth. It is essential to study its mouth from the earliest period up to old age. As far as the age of six years, one can be very precise, making judgment on the basis of the shedding and regaining of certain teeth. After this, one can only guess by examining the amount of wear on the permanent teeth. The ancients never attempted to study attrition, but they were aware that the horse lost and regained his teeth at regular times.

Varro places the first change at thirty months. It is then that the horse loses its central incisors, two on the top jaw, and two on the bottom. Columella and Palladius also correctly place it at about two and one-half years.

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2. Id., p. 321.
3. A horse has six incisors ("nippers") on each jaw.
4. VI.7: quod equus triginta mensibus primum dentes medios dicitur emittere.
5. VI.29: nunc dum bimus et sex mensium est medio dentes superiores et inferiores cadunt. See also Walsh, op. cit., p. 319.
6. IV.8: bimo et sex mensium dentes medii superiores cadunt.
Canine teeth in the horse are the four sharp-pointed teeth between the incisors and rear molars. Varro, quite accurately, says that in the fourth year these canines begin to grow. Columella and Palladius incorrectly talk of a "change" of canine teeth, as there is no "change" but rather a beginning of growth.

By the end of the fifth year, there is no more shedding of teeth. All our sources agree that during the sixth year the teeth reach maturity, and, at the seventh year the process is completed.

Today, specialists can estimate the age of a horse with a fair degree of accuracy up to about nine years. The ancients could go no further than seven, although they had criteria for

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7 See diagram in Walsh, loc. cit.

8 Although he probably is not precise in placing this at the beginning of the fourth year. See Walsh, sp. cit., p. 320. Varro II.7: ...quartum annum...incipiunt nasci, quos vocant columellares.

9 Walsh, loc. cit. Columella, VI.29: cum quartum annum aget his, qui canini appellantur, deiectis aliis afferit; Palladius, IV.8: quadrino canini mutantur.

10 Walsh, sp. cit., p. 321.

11 Columella, VI.29; and Palladius, IV.8: sexto anno, quos primos mutavit, exaequet; Varro, II.7: si (fresh teeth) sexto anno impleri.

12 Columella, VI.29: septimo omnes explentur aequaliter; Varro, II.7: septimum omnes habere solet renatos et completos; Palladius, IV.8: septimo anno omnes dentes ejus explentur.

13 Walsh, sp. cit., p. 322.
determining signs of old age. Varro thinks that at sixteen years, the horse's teeth become prominent; the brows get grey; and hollows form under them.  

14 Palladius, repeating Columella, mentions as signs of age the recession of the temples, the graying of the eye-brows, and the crookedness and projection of the teeth.  

14II,7: sum dentes sint facti broexhi et supercilia cana et sub ea lacunae, ex observatu dicurat sum eum habere annos sedecim.

15 Palladius, IV,8: sed propectioribus tempora cavari incipuint, et supercilia nonnum quam canescere, et dentes prominere; Columella, VI,29: decimo tamen anno tempora cavari incipunt et supercilia nonnum quam canescere, et dentes prominere.
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