

Livestock Breeding and the Cultural Construction of the Mule in the Greco-Roman World*

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This paper moves in a somewhat different direction from others in this volume since it considers the question of the care of the equids in anthropological rather than practical terms. Only in a very broad sense will it deal with the hippiatric practices of the ancients¹, as discussion will mainly focus on Greek and Roman attitudes towards the generation of the mule and the central role this animal played in both agricultural economy and military logistics².

More specifically, one purpose of this paper will be to show how some of the zoo-technical practices implemented by the ancients to achieve the forced coupling of mares and donkey studs can also be read as 'zoo-poietic' strategies. The term 'zoo-poiesis' was coined in the 1990's by the Italian zoo-anthropologist Roberto Marchesini and refers to the process of the cultural construction of the animal. This implies the assignment of values, identities and images to species other than human that are generally the result of markedly human expectations, needs and fears. Anthropomorphism, for example, is just one of the many possible forms of zoo-poiesis³.

As for the cultural attitudes of the Greeks (and, in part, the Romans) towards the equids, it is worth mentioning a well-documented contribution by Mark Griffith, that shows how ancient aristocratic ideology affected the ways in which horses, donkeys and mules are represented⁴. Though I agree with most of Griffith's premises and conclusions, I question his idea that the mule was perceived by the ancient Greeks as a sort of 'middle-class hero,' or a simple 'intermediate' between the 'aristocratic' horse and the 'servile' donkey. In

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¹ For a recent overview of ancient veterinary medicine, see Goebel-Peters 2014, 589-605 and bibliography (esp. 599-600 for equine species).

² On these aspects, see, e. g., Howe 2014a, 99-108; Kron 2014, 109-135 and bibliography.

³ On 'zoo-poiesis' as cultural construction of the animal, see Marchesini 2002, 123-128 (but see also Marchesini-Tonutti 2007, 123-152; and the zoo-anthropological glossary by Alessandro Arrigoni at <http://www.vitapertutti.org/L'uomo%20e%20gli%20altri%20esseri%20vivent%201.pdf> [p. 15]).

⁴ See Griffith 2006a, 185-246 and *Id.* 2006b, 307-358.

this respect, I will show that the ancients (both Greeks and Romans) considered the mule to be an 'adulterated' horse, whose generation potentially threatened the order of nature. In this paper it will be argued that some zoo-technical practices are adopted precisely to avoid the violation of this order.

I am well aware that Greek and Roman attitudes towards equids might differ in many respects, and that author-specific peculiarities should be highlighted when analyzing the ancient sources on horses, donkeys and mules. However, as far as attitudes towards equine miscegenation are concerned, I assume that similarities and analogies far outnumber the differences, and that we can speak of an enduring Greco-Roman perspective.

As for the structure of this paper, after reviewing some of the data regarding the use and exchange value of the mule, the horse and the donkey, it will address the theories of hybridization according to which the process of adulteration of equine blood lines might be explained as a 'zoo-poietic' construction of the animal.

Finally, in the third and last section, it will be briefly shown how Aristotle's explanation of the mule's inborn sterility may be read as a reflection of some of the folk prejudices against its creation.

1. A valuable beast: the role of the mule in the ancient economy

The Greeks and the Romans used horses, donkeys, and mules for several tasks: warfare, transportation, carrying loads, and, especially in the case of the horse, sport (*e. g.*, the chariot races in ancient Greece and Rome)⁵.

To achieve optimal results in breeding and to create equine varieties intended for specific purposes, we know of specific mating strategies and widely used methods to control blood lines. In this area, Aristotle, Varro and Columella are our main sources for classical antiquity⁶.

Mules are used as beasts of burden as well as transport animals and, for these specific tasks, they are considered much more reliable than horses. They are better tempered and have a safer gait on slopes, where horse hooves tend

⁵ For horses in sport, see, *e. g.*, Bell-Willekes 2014, 478-490 and bibliography. We also know of races with mules in ancient Greece. Arist. *Rh.* 1405b,23-27 relates a perhaps apocryphal anecdote about Simonides, who refused to compose an epinician poem in honor of a mule-chariot victory at the Olympic games, both because *δυσχεραίωνων εἰς ἡμιόνους ποιεῖν* (1405b,25: «he took a poor view of writing in honor of mules») and the fee offered in the first instance was too low. Then, after receiving an adequate fee, he is told to have finally written the poem (see Griffith 2006b, 341).

⁶ See, *e. g.*, Varro *rust.* 2,7,8; 8,4; Colum. 6,27 ff.; Arist. *HA* 572a,12; b,11; 576a,2; 577b,5-578a,4. On the control of blood lines and birth assistance in ancient veterinary science, see, *e. g.*, Doyen 1981, 533-556; Goebel-Peters 2014, 603 and bibliography.

to slip. Their bones are more robust than those of the horses and therefore less likely to fracture. In comparison with horses, mules are less prone to panic, can be used more easily in war, and tend to live longer than other equids⁷. Moreover, as many ancient accounts attest, mules are perceived as able to work in couple with co-specifics, and more incline than other equids to cooperation. The following anecdote, in Aelian's version, is worth mentioning in this respect:

Ἡμίονος γέρων Ἀθήνησιν ὑπὸ γε τοῦ δεσπότητος τοῦ ἰδίου τῶν ἔργων ἀπολυθείς, ὡς Ἀριστοτέλης λέγει, τοῦ μὲν φιλοπόνου καὶ ἐθελουργοῦ καθ' ἡλικίαν ἑαυτὸν οὐκ ἀφήκεν. ἡνίκα γοῦν Ἀθηναῖοι κατεσκεύαζον τὸν Παρθενῶνα, οὔτε ἐπισύρων οὔτε ἀχθοφορῶν ὅμως τοῖς νέοις ὀρεῦσι προφοροῦμένοις τὴν ὁδὸν ἄκλητος καὶ ἐκῶν οἰοῖνι παράσειρος ἦει, δορυφορῶν ὡς ἂν εἴποις καὶ παρορμῶν τὸ ἔργον τῇ βαδίσει τῇ κοινῇ δίκην τεχνίτου παλαιοῦ τοῦ μὲν αὐτουργεῖν ὑπὸ τοῦ γήρωσ ἀπολυθέντος, ἐμπειρία δὲ καὶ διδασκαλία ὑποθήγοντός τε ἅμα τοὺς νέους καὶ ἐπαίροντος. ταῦτα οὖν μαθόντες ὁ δῆμος τῷ κήρυκι ἀνειπεῖν προσέταξαν, εἴτε ἀφίκοιτο ἐς τὰ ἄλφια, εἴτε ἐς τὰς κριθὰς παραβάλοι, μὴ ἀνείργειν, ἀλλ' ἐὰν σιτεῖσθαι ἐς κόρον, καὶ τὸν δῆμον ἐκτίνειν ἐν Πρυτανείῳ τὸ ἀργύριον, τρόπον τινὰ ἀθλητῆ σιτήσεως δοθείσης ἤδη γέροντι.

At Athens an aged Mule was released from work by its master, so Aristotle tells us, but declined to abandon its love of labour and its willingness to work on the score of age. Thus, at the time when the Athenians were erecting the Parthenon, though it neither drew nor carried burdens, yet it would unbidden and of its own free will walk by the young mules as they went back and forth, like a trace-horse, acting as guard, so to speak; and by treading a common path it encouraged their work, like some old craftsman whom age has released from labour with his hands but whose experience and knowledge are a stimulus and incitement to the young. Now when the people got to hear of this they directed the herald to proclaim that if it came in quest of barley-meal or approached to get corn, it was not to be prevented but was to be allowed to eat its fill, and that the populace would defray the cost by depositing money in the Prytaneum, as in the case of an athlete who in his old age was given free meals there⁸.

Procuring a mule, however, is not easy. Aristotle, for instance, says that ὅταν δ' ἵππος ὀχεύῃ ὄνον ἢ ὄνος ἵππον, πολὺ μᾶλλον ἐξαμβλοῖ ἢ ὅταν τὰ ὁμογενῆ ἀλλήλοισι μιχθῆ, οἷον ἵππος ἵππῳ ἢ ὄνος ὄνῳ («when a horse covers a she-ass or an ass a mare, a miscarriage is more likely to occur than when two animals of the same kind have intercourse, horse with horse and ass with ass»)⁹.

⁷ See, e. g., Griffith 2006a, 233-239; Howe 2014a, 102 (and bibliography).

⁸ Ael. NA 6,49 (English translation by A. F. Scholfield, adapted by Griffith 2006b, 352); see Arist. HA 577 b 30.

⁹ Arist. HA 577b, 5-7: all the English translations of HA books 1-6 are by Peck 1965-1970; all the translations of the other books are by Balme 1991. The Greek text here quoted is that established by Balme 2002.

Additional factors worth considering are the long gestation period of approximately one year, the uniparous nature of both horses and donkeys, and, above all, the sterility of the offspring. In fact, as the ancients quickly learned from direct experience, only in very exceptional cases can mules give birth to other mules¹⁰. This means that to ‘produce’ a mule, either a mare and a donkey stud, or – in the case of hinnies – a horse stallion and a donkey mare are always needed.

This involves another set of problems, because, in order to preserve the fertility of the mare destined to generate mules, a farmer cannot allow continuous mating with the stallion ass:

ἂν δὲ συνεχῶς μίσηται καὶ μὴ διαλίπη χρόνον τινὰ οὕτως ὀχευόμενα, ταχέως ἄγονον τὸ θῆλυ γίνεται· διὸ συνεχῶς οὐ μίσηουσιν οὕτως οἱ περὶ ταῦτα πραγματευόμενοι, ἀλλὰ διαλείπουσι τινα χρόνον.

If such intercourse goes on without intermission, the female soon becomes sterile; and that is why those who are engaged in this sort of business do not allow them to have intercourse continuously but space it out¹¹.

Furthermore, in addition to the physiological impediments, there are also noteworthy ethological issues to be addressed: as Aristotle notes, οὐ προσδέχεται δ’ οὔτε ἡ ἵππος τὸν ὄνον οὔτε ἡ ὄνος τὸν ἵππον («no mare will allow an ass to copulate, nor will a she-ass allow a horse»)¹². This means that a set of devices and strategies are needed to force the two animals of the different species to couple, and specialized practitioners, such as the *aurigae* (or *origae*, ‘grooms’), are usually employed to achieve this end¹³.

More specifically, the donkey stud chosen for the coupling must be prepared from birth for this task. The donkey colt is usually taken from its natural mother and given to a horse mare where it is bred and suckled together with other horses. Then, after weaning, it is fed equine food¹⁴. The following is what Varro says in this regard:

Pullum asinum a partu recentem subiciunt equae, cuius lacte ampliores fiunt, quod id lacte quam asinum ad alimonia dicunt esse melius. praeterea educant eum paleis, faeno, hordeo. matri suppositiciae quoque inserviunt, quo equa ministerium

¹⁰ For these exceptions, see, e. g., Arist. *GA* 748b,30 ff. For a well-known case of a female mule giving birth, see e.g. Hdt. 3,151-160 (also Strong 2010, 458-459).

¹¹ Arist. *HA* 577b,11-15.

¹² Arist. *HA* 577b,15-16.

¹³ See Varro *rust.* 2,8,4.

¹⁴ On the equine suckling of the colt, see, e. g., Arist. *HA* 577b,16 ff.; Varro *rust.* 2,8,2; Colum. 6,37,8; Plin. *nat.* 8,171.

lactis cibum pullo praeberere possit. hic ita eductus a trimo potest admitti: neque enim aspernatur propter consuetudinem equinam.

When an ass colt is newly born it is placed under a mare and becomes fatter on her milk, as they claim that such nourishment is more nutritious than the ass's milk. They are reared, in addition, on straw, hay, or barley. Special care is also taken of the foster-mother, so that the mare may furnish the colt with an abundant supply of milk. A jack so reared may be used for breeding after three years, and because it is accustomed to horses it will not refuse to mate¹⁵.

In the Roman era, the use of the so-called *machina*, which facilitated the mating between the donkey stud and the mare, is also worth mentioning:

Locus est ad hos usus extractus, machinam vocant rustici, duos parietes adverso clivulo inaedificatos qui angusto intervallo sic inter se distant, ne femina concludatur aut admissario ascendenti avertere se possit. Aditus est ex utraque parte, sed ab inferiore clatris munitus: ad quae capistrata in imo clivo constituitur equa, ut et prona melius ineuntis semina recipiat, et facilem sui tergoris ascensum ab editiore parte minori quadrupedi praebet.

A special place is constructed for these purposes – the countryfolk call it a “machine” – it consists of two lateral walls built into gently-rising ground, having a narrow space between them, so that the mare cannot struggle or turn away from the donkey when he tries to mount her. There is an entrance at each end, that on the lower level being provided with cross-bars, to which the mare is fastened with a halter and stands with her forefeet at the bottom of the slope, so that, leaning forward she may the better receive the insemination of the donkey and make it easier for a quadruped smaller than herself to mount upon her back from the higher ground¹⁶.

In the light of these examples, it is clear that to achieve optimal results, the animal the farmer chooses cannot be left to chance. In fact, every mare and every stud has to be selected, and, especially in the case of the donkey, trained and bred for a very specific purpose. This means that the demand for these animals and their economic value can be very high. Varro notes, for example, that a good donkey stud can cost up to 100.000 sesterces, whereas an ordinary ass can be bought for 60.000 sesterces, and Columella ranks the value of the mule-breeding mares second only to horses provided for circus and sacred games¹⁷.

¹⁵ Varro *rust.* 2,8,2 (the text and the English translations of this work are by Hooper-Ash 1934).

¹⁶ Colum. 6,37,10: the English translations of this work are by Forster-Heffner 1954, whose Latin text is here followed. It is worth noting that the MSS present slight variations: *claris* instead of *clatris*; *quod* instead of *quae*, and *pronam* instead of *prona*.

¹⁷ Varro *rust.* 2,1,14; Colum. 6,27,1.

Consequently, because of the difficulties found in ‘manufacturing’ them, mules may also be used as status symbols for the wealthy¹⁸. Not only were mules stronger and more robust than donkeys, but they were also considered much more elegant. They could also be used to tow carts as a means of daily transport for affluent families, but also, in some cases, for ceremonial parades (especially in Rome): Plutarch recounts Lucullus’ triumph of 63 BC, where there were 107 mules bearing around 2,700,000 silver coins, 8 mules carrying golden couches, and 56 other mules transporting silver ingots¹⁹. In this case, «the animals gave visual effect to the mass of spoils that Lucullus brought into the city», thereby symbolically quantifying the success of Rome’s military force and its vast riches²⁰.

2. Cultural attitudes

2.1. Parental paths: mother, father(s)

Against the backdrop of the significant economic value of the mule (as well as the animals selected to generate it), the widespread cultural attitudes towards the animal seem ambivalent and double-edged. This is what Griffith 2006b points out:

indispensable and highly valued for their versatility, endurance, and longevity, yet always kept separate from the most prestigious activities that were exclusively reserved for horses (most notably, cavalry action, ceremonial riding, and chariot racing), they [*scil.*, the mules] did not fit comfortably into any obvious cultural niche²¹.

As I will try to show in this chapter, there is a peculiar ‘cultural niche’ that can explain Greek and Roman ambivalence towards this animal, and is closely related to folk theories about adultery and, more generally speaking, to the ancient anthropology of reproduction.

As for the double-edged perspectives on the mules, the Aesopic fable produces some interesting evidence, as fables 272 and 128 Chambry quoted in the following lines show:

Ἵνος καὶ ἡμίονος ἐν ταύτῳ ἐβάδιζον. Καὶ δὴ ὁ ὄνος ὄρων τὸν τοὺς ἀμφοῖν γόμους ἴσους ὄντας ἠγανάκτει καὶ ἐσχετλιάζειν, εἶγε διπλασίονος τροφῆς ἠξιωμένη ἢ ἡμίονος

¹⁸ See Howe 2014b, esp. 140. On the many images of mules drawing affluent and well-dressed men on light wagons or chariots in ancient Greek vase pottery, see e.g. Griffith 2006a, 217-219 and 233-239. For evidence of female mules used for drawing carriages as a status marker in Imperial Rome, see e.g. Adams 1993, 45-51 (who shows that the castrated *mulus* is perceived as a humble beast of burden instead).

¹⁹ Plut. *Luc.* 37,4.

²⁰ See Östenberg 2014, 494.

²¹ Griffith 2006b, 308.

οὐδὲν περιττότερον βαστάζει. Μικρὸν δὲ αὐτῶν τῆς ὁδοῦ προϊόντων, ὁ ὄνηλάτης ὀρῶν ὄνον ἀντέχει μὴ δυνάμενον, ἀφελόμενος αὐτοῦ τὸ φορτίον τῇ ἡμίονῳ ἐπέθηκεν. Ἐτι δὲ αὐτῶν πόρρω προβαιόντων, ὀρῶν ἔτι μᾶλλον ἀποκάμνοντα, πάλιν ἀπὸ τοῦ γόμου μετετίθει, μέχρι τὰ πάντα λαβῶν καὶ ἀφελόμενος ἀπ' αὐτοῦ τῇ ἡμίονῳ ἐπέθηκε. Καὶ τότε ἐκείνη ἀποβλέψασα εἰς τὸν ὄνον εἶπεν· ὦ οὗτος, ἄρα σοι οὐ δοκῶ δικαίως τῆς διπλῆς τροφῆς ἀξιωθῆναι; Ἀτὰρ οὖν καὶ ἡμᾶς προσήκει μὴ ἀπὸ τῆς ἀρχῆς, ἀλλ' ἀπὸ τοῦ τέλους τὴν ἐκάστου δοκιμάζειν διάθεσιν.

A donkey and a mule were walking along together. When the donkey saw that they were carrying equal loads, he got angry and complained that the mule was awarded a double portion of food even though she carried a load that was no bigger than his own. After they had journeyed a little further down the road, the driver saw that the donkey could not hold up under the weight, so he took part of the donkey's load and placed it on the mule. Later, when the driver saw that the donkey had grown even more tired, he again transferred some of the donkey's load to the mule, and so on. Finally the driver took the entire load and shifted it from the donkey to the mule. At that point the mule glanced over at the donkey and said, 'What do you say now: don't I deserve a double portion of food?' It is the same when we pass judgment on one another's situations: instead of looking at how things start, we should look instead at how they turn out in the end²².

Ἡμίονός τις ἐκ κριθῆς παχυνθεῖσα ἀνεσκίρτησε καθ' ἑαυτὴν βοῶσα· Πατὴρ μου ἐστίν ἵππος ὁ ταχυδρόμος, κἀγὼ δὲ αὐτῷ ὄλη ἀφωμοιώθην. Καὶ δὴ ἐν μιᾷ ἀνάγκῃς ἐπελθούσης, ἠναγκάζετο ἡ ἡμίονος τρέχειν. Ὡς δὲ τοῦ δρόμου ἐπέπαυτο, σκυθρῶ-πάζουσα πατρός τοῦ ὄνου εὐθὺς ἀνεμνήσθη.

A mule once happened to be eating the food of idleness in her manger. Feeling her oats, so to speak, she burst into a run, whinnying and shaking her head to and fro. 'My *father* is a horse,' she shouted, 'and I am no worse at racing than *he* is!' But suddenly she drew to a halt and hung her head in shame, remembering that her *father* was only a donkey»²³.

The meaning of the first fable quoted is – so to say – 'utilitarian' and economically oriented: the mule is worth more than the ass and deserves more investment in terms of food because it works more. The second fable, however, is worth mentioning both for philological and anthropological reasons.

As for the state of the text, it is worth saying that the manuscripts attest a sort of 'gender chaos' with regard to the parent the mule is proud of, since

²² Aesop. 272 Chambry = 204 Hausrath. All the English translations of the Aesopic fables are by Gibbs 2008.

²³ Aesop. 128 Chambry = 285 Hausrath. In translations of the Aesopic fables I have referred to the mule as 'she', but it is worth mentioning that ἡ ἡμίονος is the generic term for 'mule' in Greek. Therefore I revert to the neuter 'it' in sections of the paper dealing with other authors and texts. The use of *mula* as generic term instead of *mulus* develops even in Imperial Rome (see Adams 1993, 35-61).

both ‘my father is a horse’ and ‘my mother is a horse’ are attested²⁴. Here it is how Griffith 2006b has explained this fluctuation:

Clearly the perennial anxiety surrounding the possibility of miscegenation between upper and lower classes, and especially between male slaves and free women (as between donkey-jack and mare), has contributed to this ongoing textual confusion²⁵.

Further on in the paper, he proposes a strong socio-psychological reading of the fable in this respect:

“middle-class mules” are shown facing that definitive choice: “which is my natural – or proper – role and social rank? Am I for show, or for work? Am I really (should I be) more like Mom, or like Dad?”²⁶.

Finally, the author concludes with a sort of glorification of the hybrid animal, when he says that the mule «has much to teach us – a creature who would work collaboratively, patiently, and unpretentiously to carry on the day-to-day labor and social interaction of the community, a loyal partner and companion to fellow-mules and humans alike: an unsung – or now, I hope, at least half-sung (ἡμι-ὑμνητος) hero»²⁷.

In the light of this reading, the Aesopic character (which is feminine in the Greek text established by Hausrath) is facing a sort of identity crisis. However, the conclusion of the fable leaves no doubt: there is no uncertainty about the parental path to follow. After bragging about her noble equine ancestry, faced with the evidence of her ineptitude at racing, the mule remembers that, as the etymology of her name attests, she is ‘half-ass’ (ἡμίονος). Therefore, she is definitely ashamed that her father (or – as we shall see – *one of her fathers*) is a donkey, *i.e.*, an animal that in many other fables is usually presented as lazy, voracious, vainglorious, and seems to be affected by all the repertoire of ancient servile vices²⁸. This means that this story does not deal

²⁴ See the apparatus of Hausrath 1956 (and Griffith 2006b, 346).

²⁵ Griffith 2006b, 346.

²⁶ Griffith 2006b, 347.

²⁷ Griffith 2006b, 355.

²⁸ See Aesop. 262-279 Chambry. The laziness of the donkey is proverbial even in Colum. 6,36,3. Conversely, the horse, even though it is not without defects, is always seen as the nobler animal (see, *e. g.*, Aesop. 142 Chambry): it is because of its nobility as well as its proficiency in the races, however, that it tends to get too proud and vain (see, *e. g.*, Aesop. 138 and 139 Chambry). Similar ethological features for both animals are also confirmed in the ancient physiognomic tradition: see, *e. g.*, Arist. *Phgn.* 808b,35-7 and 813a,31 f. (ὑβρις and intemperance of the donkey); 811a,25 f. and b,23 f. (stupidity of the donkey); 811b,7 (the donkey’s cowardice); 811b,9 f. (the donkey’s sluggishness); 811b,30 f. and 812a,7 f. (the donkey’s poor sense of perception); 810b,32

with an animal that is in doubt – so to say – whether to be noble or not. It deals with an animal who would really like to be noble, but actually cannot. To put it simply, the mule's 'middleness' between the horse and the donkey is not the result of a free choice but has to be accepted as an inevitable necessity.

Although the cultural representations of the equids – and Aesopic fables in general – might be (and, as Griffith has masterfully shown, *are*) affected by the hidden social tensions and anxieties circulating in the ancient world, although it is true that there is some evidence of symbolic links between mules and freedmen in Greek culture²⁹, however, it would be anachronistic to say that the Aesopic mule may be worried by the fears and the identity problems of a typical 'middle-class' hero. Rather, she seems affected by the peculiar pains and frustrations that a *nothos*, *i.e.*, an illegitimate child, could face in Greek society. And for sure the frustrations of a *nothos* cannot be read in the simplistic terms of a 'middle-class' crisis³⁰.

As for the textual fluctuation, it is extremely hard to determine whether the mule is proud of her father or her mother. I intend to deal with this question in a separate paper. Here, I confine myself to reproducing the text of Hausrath 1956, which seems to imply that the mule is the daughter of both a donkey father and a horse father. As I will try to show in the following sections, I wonder if the idea is counter-intuitive but not as impossible as it seems.

f. (the foolishness of the horse); 813a,11 f. (the pride and snobbery of the horse). Analogous ethological descriptions recur in *De phusiognômonia liber*, attributed to an anonymous Latin author (see, *e. g.*, 118-119). More in general, see Griffith 2006a, 198-228 for the uses and the cultural representation of the donkey in ancient Greece. On the horse and the donkey in ancient physiognomy, see *e.g.* Li Causi 2008, 117-118.

²⁹ In connection with the symbolic links between mules and freedmen in Greek culture (which are over-stressed in Griffith 2006b 336-352), it is worth remembering that Aesopus himself was compared to a mule in *Vita Aesopi* 18 f. (see *e.g.* Lefkowitz 2015, 19, and, for a deep reading of the *versio G* of *Vita Aesopi*, Kurke 2011). Another piece of evidence is the image of Ephaiustus riding a mule in the François Vase. According to Griffith 2006b, 348-351, here «we see the parvenu craftsman and his crew of silens confidently asserting their newly-acquired status at the expense of – yet in a new collaboration with – the aristocratic Olympian family».

³⁰ On the status of illegitimate children in ancient Greek world, it is worth mentioning the seminal work by Daniel Ogden (Ogden 1996). We should remember that the figure of the mule is frequently used by Herodotus as a metaphor good to refer to half-breed children, whose loyalty towards their family cannot be completely trusted (see Strong 2010, 455-464).

2.2. Mules as ‘adulterated’ animals: between Aesopic fable and natural philosophy

Descent from the donkey as source of shame is not only typical of the Aesopic tradition but can also be found in philosophical and natural history texts. Here is a passage taken from *De natura animalium* in which Aelian quotes Democritus on the generation of the mule:

μη γὰρ ἔχειν ὁμοίας μήτρας τοῖς ἄλλοις ζώοις, ἕτερομόρφους δέ, ἥκιστα δυναμένας γονῆν δέξασθαι· μη γὰρ εἶναι φύσεως ποίημα τὴν ἡμίονον, ἀλλὰ ἐπινοίας ἀνθρωπίνης καὶ τόλμης ὡς ἂν εἴποις μοιχιδίου ἐπιτέχνημα τοῦτο καὶ κλέμμα. δοκεῖ δέ μοι, ἢ δ’ ὅς, ὄνου ἵππον βιασαμένου κατὰ τύχην κυῆσαι, μαθητὰς δὲ ἀνθρώπους τῆς βίας ταύτης γεγεννημένου εἶτα μέντοι προελθεῖν ἐπὶ τὴν τῆς γονῆς αὐτῶν συνήθειαν. καὶ μάλιστα γὰρ τοὺς τῶν Λιβύων ὄνους μεγίστους ὄντας ἐπιβαίνειν ταῖς ἵπποις οὐ κομῶσαις ἀλλὰ κεκαρμέναις· ἔχουσα γὰρ τὴν ἑαυτῆς ἀγλαΐαν τὴν διὰ τῆς κόμης οὐκ ἂν ὑπομείνειε τὸν τοιόνδε γαμέτην οἱ σοφοὶ τοὺς τούτων γάμους φασίν.

Mules however, he says, do not give birth, for they have not got wombs like other animals but of a different formation and quite incapable of receiving seed; for the mule is not the product of nature but a surreptitious contrivance of the ingenuity and, so to say, adulterous daring of man. And I fancy, said Democritus, that a mare became pregnant from being by chance violated by an ass, and that men were its pupils in this deed of violence, and presently accustomed themselves to the use of the offspring. And it is especially the asses of Libya which, being very big, mount mares that have no manes, having been clipped. For those who know about the coupling of horses say that a mare in possession of the glory of her mane would never tolerate such a mate³¹.

Many centuries later, this same metaphor for the hybridization of horses and donkeys - first used by the Greek atomist - recurs in Isidore of Seville's *Origines*:

Industria quippe humana diversum animal in coitu coegit, sicque adulterina commixtione genus aliud repperit («it is human industry that has forced different animals to mate and in this way, through an adulterous commixtion, discovered a new genus»)³².

In both authors, rather than being a phenomenon we can observe in nature, the creation of the mule is seen as something artificial and attainable only through τέχνη, *industria* or, even worse, βία (*i. e.*, ‘violence’). Even more,

³¹ Ael. *NA* 12,16 (English translation by Scholfield 1959, whose text is here followed. At least three textual questions are worth noting: 1) Reiske reads μοιχιδιον instead of μοιχιδίου; 2) whereas βιασαμένου is attested in the rest of the MSS, *H* reads βιάσασθαι; 3) κυῆσαι is deleted in *H*).

³² Isid. *orig.* 12,1,58 (English translation mine, text by Lindsay 1911).

the artificiality of the process is seen as linked with the violation of the rules of nature and is, therefore, considered in terms of rape and adultery³³.

As further proof of the 'adulterous' nature of the mule in the ancient Greco-Roman world, there is also the etymology of the Latin *mulus*, which is assumed to be cognate with the Greek μυχλός, a very rare term which, according to Hesychios of Alexandria, means 'curved', 'lecherous man', 'lewd person', 'intemperate person', 'stallion ass' (in the Phocian dialect) or even μοιχός (*i.e.*, adulterer)³⁴.

But in the ancient world what exactly does being an artificial product of adultery mean? And above all, are we sure that when the ancient Greeks and the ancient Romans speak of μοιχεία or *adulterium* they are speaking only in a metaphorical sense?

2.3. How can an animal be 'adulterous'?

Before answering the question asked in the previous section, a preliminary explanation is necessary.

To begin with, we must remember that ancient biology is crossed by a crucial debate concerning the existence of female seed as well as the role of the father and the mother in the reproductive processes. Because of the fragmentary state of our sources and testimonies, it is extremely difficult to understand the real positions of the Presocratics in this respect, but it is clear that, whereas Hippocratic physicians agree in granting an important role to the maternal seed in the formation of the embryo³⁵, Aristotle's theories follow a different path. Especially in *De generatione animalium*, he denies the very existence of maternal seed, and points out that the contribution of the female to the process of reproduction is to be spoken of in terms of rude matter, whereas it is the male that παρέχεται τό τε εἶδος καί τήν ἀρχήν τῆς κινήσεως («furnishes the form and the principle of motion»)³⁶. As several scholars have recently pointed out, this means neither that males and females are different in species, nor that mothers play no role at all within the reproductive process. To put it simply, Aristotle's theory «identifies the power of the male as precisely that power to initiate the process of generation». In other terms, this means that «it is the male [...] that has the power to start things going, to ini-

³³ For a deeper reading of the text of Ael. NA 12,16 (and the zoo-anthropological mirroring between humans as learners and donkey as 'rapists'), see esp. Li Causi 2008, 75-76 (and Li Causi 2014, 66).

³⁴ See Hesych. s. v. μυχλός; TLG, s. v. μυχλός; *Vocabolario Etimologico della Lingua Italiana*, s. v. *mulo*.

³⁵ See e.g. Bonnard 2013, 23-25 (and bibliography).

³⁶ Arist. GA 729a,9f.

tiate and thus in this genetic causal sense to bring about the generation of a new animal»³⁷.

Even though there is no evidence, it is not unreasonable to suggest that the textual fluctuations of the aforementioned Aesopic fable (128 Chambry) could have been affected by the several positions expressed within the ancient debate on the reproductive roles of father and mother. At any rate we may note that in their different ways both the Hippocratic and the Aristotelian positions seem to mirror a widespread attitude in the ancient world, according to which reproduction is more closely associated with fatherhood than with motherhood. Especially in the Aristotelian accounts, as some scholars have pointed out, the idea that reproduction may be thought as a sort of 'reproduction of the father' became widespread and hegemonic in the whole ancient world down to the Roman era³⁸.

Secondly, it is worth saying that whereas for us adultery is the generic betrayal of conjugal fidelity, in the ancient world it is basically – as the etymology testifies – a process of contamination of a blood line. If the Latin term *adulterium* refers to the act of *adulterare* (*i. e.*, 'polluting' or 'adulterating'), the Greek *μοιχεία* has been connected by several scholars to the verb *ομείχω*, slang for 'to urinate' or 'to make water'³⁹.

Within the cultural framework of ancient folk biology, both *ομείχω* and *adultero* are related to the 'vital fluid dynamics' inherent in the processes of reproduction. Indeed, when the ancients say that an *adulter* or a *μοιχός* is committing his particular crime, they assume that his semen (which is perceived as 'dirty', or simply inferior) is polluting the purity of another male's seminal fluid. This happens because, as several scholars have pointed out, there is a widespread folk theory in the ancient world according to which the uterus of a woman can retain the semen of the men she mates with. It is due to this retention that agglutinations of seeds of different partners are thought to be possible in the female womb⁴⁰. In other words, every time an adulterer makes love to a forbidden woman, the identity of the offspring of that union becomes dubious and confused.

More specifically, three different threats arise in case of adultery: 1) the offspring may come from the wrong partner (*i. e.*, the adulterer); 2) twins may

³⁷ Kosman 2010, 162-163 (also Salmieri 2017, 188-206 for a critical overview of the most common positions). For a recent re-assessment of the generative role of the female in Aristot. *GA*, see *e.g.* Connell 2016, esp. 91-160.

³⁸ See *e.g.* Pomata 1994, 229-234; Grimaudo 2003, 6-36.

³⁹ See Chantraine 1999², s. v. (and bibliography) and Adams 1982, 142 (and bibliography). For the idea of adultery in ancient world, see, *e. g.*, Guastella 1985, 52-65; Mencacci 1996, 37-47; Beltrami 1998, 42-82; Bettini 2002, 93-98; Li Causi 2008, 75-90.

⁴⁰ Bonnet-Cadilhac 1997, 111-114; Bettini 2002, 93; Wilgaux 2006, 344-346.

occur, each twin coming from a different male seed; and 3) there may be an agglutination of two different seeds (*i. e.* of two different blood lines), so that the newborn is the son of two biological fathers.

An example of the latter case is the Minotaur. The name of this mythical beast, composed of the terms Μίνωος and ταῦρος ('bull'), literally means 'hybrid of Minos and bull', *i. e.*, the biological son, simultaneously, of a human and an animal father⁴¹.

In the light of these facts, if we accept the reading 'my father is a horse' in Fable 128 Chambry, then it becomes clear why the mule first boasts of her equine father (more specifically, a racing-horse!), and is then forced to admit to being the daughter of a donkey father. In fact, having discovered her inability to race, the animal might be simply remembering that she has a biological horse father *as well as* a biological donkey father.

In order to understand how this is possible, it is worth mentioning that whereas nowadays we tend to think of hybrids as intermediate products of parents who belong to different species (a common mistake made even by Griffith 2006b in the case of the mules), the ancients see them as animals which are either polluted or corrupted by other animals perceived as agents of contamination. Of course, this means that when we speak of ancient folk biology, we must reason in terms of *scala naturae* (or of polar perspectives)⁴². But if there is a *scala naturae* at work, then every time two animals of different kinds mate, one pollutes, and the other is polluted, or *vice versa*, one ennobles, and the other is ennobled. More specifically, in the case of the 'half-ass', the effect of cross-breeding is literally, and not metaphorically, adultery, or, in other words, the corruption of the horse's seed and blood line with the seed and the blood line of the ass. And this corruption is one of the main causes of the double-edged attitude of the Greeks and the Romans towards the mule, an animal that maintains some of the horse's specific traits while lumping them together with the features of the 'slavish' donkey, its nature being a by-product of the agglutination of both equine and asinine seed.

2.4. *Machina*, mane, milk: zoo-technics/zoo-poiesis of the mule

In the light of all this, it is possible to attempt an alternative reading of the animal husbandry practices mentioned at the beginning of this paper: suckling future donkey studs, facilitating their mounting with the *machina*, and cutting the mare's mane before the mating. These cunning procedures are intended not only for utilitarian purposes, but also, in an indirect way, as a

⁴¹ See Bettini 2002, 93-98.

⁴² For polar perspectives in ancient science, see Lloyd 1971. For the idea of *scala naturae*, see *e.g.* Granger 1985, 200; duBois 1991, esp. 129-149; Zucker 2005, 158-168.

powerful means to culturally construct the mule itself. In other words, they are zoo-poietic as well as zoo-technic arrangements with the symbolic goal of assimilating and giving equal status to animals that are perceived to be on different hierarchical (or polar) levels.

Whereas the *machina* lifts up what is lower and lowers what is higher (of course for goals that are practical but also have strong symbolic implications), even more telling is the cutting of the mare's mane. This is intended to humiliate, and thus lower the pride and the reluctance of a being perceived as nobler, just before it is forced to mate with an animal perceived as inferior.

Such an act seems of little practical use, but it is nonetheless deeply evocative. For those with a literary background (including many owners of Roman villas), a mare that is subjected to a donkey exemplifies for a moment a well-established imagery. It recalls the *Troades* of Euripides and Seneca, where, after the burning of the city, the Trojan noblewomen are shorn of their hair before being forced to mate with the Greek conquerors. It recalls Euripides' *Electra*, where the princess, married off by Aegisthus to a low-class laborer, appears on stage short-haired and dirty⁴³. It recalls Sophocles' *Tiro*, whose main character is compared to a mare whose hair has been clipped⁴⁴. It recalls Menander's *Περικειρομένη*, where Glykera's lover Polemon cuts off her hair because he believes she betrayed him with a *μοιχός*. Last but not least, it is worth remembering that cutting off hair is one of the humiliating punishments publicly inflicted on *μοιχοί* in Greek society⁴⁵.

What these cultural facts have in common is the idea that hair can function as an identity marker, and manipulating, changing or cutting hair can be a way either to modify inner nature (the shorn mare becomes something else or perhaps inferior) or to make visible a shameful inner essence, as in the case of the punished *μοιχοί*. In zoo-poietic terms, however, the equine suckling of the donkey is even more remarkable and can be better explained, once again, by the folk biology of the ancients.

According to Aristotle, milk is nothing but menstrual blood concocted by means of the formative impulse of the male seed⁴⁶. This belief also recurs in Latin contexts. Varro, for example, says that the milk is actually *spuma sanguinis* ('blood foam')⁴⁷, and just like blood and semen, milk plays a creative role in the transmission of the 'formal essence' of the newborn. As the Italian scholar Roberto Danese puts it:

⁴³ See vv. 108 and 184.

⁴⁴ See Fr. 659 Radt = Ael. *NA* 2,10; 11,18.

⁴⁵ See Li Causi 2008, 75.

⁴⁶ See Arist. *GA* 776a,15 and ff.

⁴⁷ See Varro, *Catus de liberis educandis* fr. 8 Riese.

il latte, come il sangue che lega i membri della stirpe, porta in sé e trasmette, secondo i vari usi che se ne fanno, l'intensità dell'impronta formatrice del genitore quale si rivela nei caratteri acquisiti dal figlio, traducendosi anche in potenziale forza fecondatrice⁴⁸.

We also know that milk kinship, formed during nursing by a non-biological mother, is considered by the Greeks and the Romans to be a common form of fostering biological as well as psychological affinities among children. In this connection, Plutarch says that the wife of Cato nursed the children of her slaves because by doing so, κατεσκεύαζεν εὖνοιαν ἐκ τῆς συντροφίας πρὸς τὸν υἱόν («she established their good feelings towards her son through their shared nourishment»)⁴⁹. An analogous idea occurs in Favorinus of Arelate, a Roman philosopher who flourished during the reign of Hadrian:

Quamobrem non frustra creditum est, sicut valeat ad fingendas corporis atque animi similitudines vis et natura seminis, non secus ad eandem rem lactis quoque ingenia et proprietates valere. Neque in hominibus id solum, sed in pecudibus quoque animadversum. Nam si ovium lacte haedi aut caprarum agni alantur, constat ferme in his lanam duriores, in illis capillum gigni teneriores.

Therefore it is believed not without reason that, just as the power and nature of the seed are able to form likenesses of body and mind, so the qualities and properties of the milk have the same effect. And this is observed not only in human beings, but in beasts also; for if kids are fed on the milk of ewes, or lambs on that of goats, it is a fact that as a rule the wool is harsher in the former and the hair softer in the latter⁵⁰.

It is thus possible to conclude that if mother's milk, formed by the coction of the male seed, possesses a sort of creative and formative force, then the donkey suckled by the horse undergoes a process of 'horsification'. In Aristotelian terms, this is because the milk exchange has the power of assimilating 'in form', more than 'in matter', what is not similar, and of transmitting part of the 'genetic make-up' of a second father to the newborn.

Assimilation, however, can be achieved not only upwards – as in the case of Cato's wife and the children of the slaves – but also downwards. The following lines of Favorinus are noteworthy in this regard:

Quae, malum, igitur ratio est nobilitatem istam nati modo hominis corpusque et animum bene ingeniatis primordiis inchoatum insitivo degenerique alimento lactis

⁴⁸ Danese 1997, 51 n. 38 (whose essay on the formative power of lactation in the ancient world I am following here).

⁴⁹ Plut. *Cat. ma.* 20,5 (the English translation is mine; text by Ziegler 1969).

⁵⁰ Fav. fr. 38 Barigazzi, quoted in Gell. 12,1,14-15 (all the English translations of Gellius' work are by Rolfe 1927, whose text is here followed).

alieni corrumpere? Praesertim si ista, quam ad praebendum lactem adhibebitis, aut serva aut servilis est et, ut plerumque solet, externae et barbarae nationis est, si improba, si informis, si inpudica, si temulenta est; nam plerumque sine discrimine, quaecumque id temporis lactans est, adhiberi solet. Patiemurne igitur infantem hunc nostrum pernicioso contagio infici et spiritum ducere in animum atque in corpus suum ex corpore et animo deterrimo? Id hercle ipsum est, quod saepenumero miramur, quosdam pudicarum mulierum liberos parentum suorum neque corporibus neque animis similes existere [...] quoniam videlicet in moribus inolescendis magnam fere partem ingenium altricis et natura lactis tenet, quae iam a principio imbuta paterni seminis concrectione ex matris etiam corpore et animo recentem indolem configurat.

What the mischief, then, is the reason for corrupting the nobility of body and mind of a newly born human being, formed from gifted seeds, by the alien and degenerate nourishment of another's milk? Especially if she whom you employ to furnish the milk is either a slave or of servile origin and, as usually happens, of a foreign and barbarous nation, if she is dishonest, ugly, unchaste and a wine-bibber; for as a rule anyone who has milk at the time is employed and no distinction made. Shall we then allow this child of ours to be infected with some dangerous contagion and to draw a spirit into its mind and body from a body and mind of the worst character? This, by Heaven! is the very reason for what often excites our surprise, that some children of chaste women turn out to be like their parents neither in body nor in mind [...] And there is no doubt that in forming character the disposition of the nurse and the quality of the milk play a great part; for the milk, although imbued from the beginning with the material of the father's seed, forms the infant offspring from the body and mind of the mother as well⁵¹.

The practice of surrogate breastfeeding entrusted to women of the lowest rank implies, therefore, the risk of the contamination of both the body and the behavior of the child, whose essential nature can be reconfigured and even reshaped because milk, as a by-product of the male seed, is thought to transmit 'genetic' as well as 'moral' make-up.

Within this folk biological framework, it is clear that if we apply the model of human nursing to other non-human mammals, suckling a donkey stud means reshaping and 'horsifying' (or ennobling) it. As Varro testifies, the mare's milk allows the colt to grow better than other asses⁵², which, in the polar (or gradualist) perspective of ancient folk biology, can also mean that the future donkey stud can be elevated to a rank similar to the superior animal with which it is going to mate. As in the case of clipping the mare's mane, clever animal husbandry can be transformed into a zoo-poietic means to culturally construct the symbolic status of a living being.

In the light of all this, the following conclusions reached by Griffith 2006 b on the symbolic status of the mule need to be partially re-thought:

⁵¹ Fav. fr. 38 Barigazzi: Gell. 12,1,17-19 and 20.

⁵² Varro *rust.* 2,8,2.

On the one hand, the facts of equine (sexual and reproductive) life, that is, the recurring need for sexual union between “high-class” mares and “low-class” donkey-jacks, a dynamic that raised for the Greeks the deeply repressed, and usually unmentionable, specter of human miscegenation between male slaves and free citizen women; and on the other hand, the ancient Greek reluctance to consider most kinds of “work” as anything but demeaning, whether for a free man or for a noble equid⁵³.

To sum up, the view according to which the mule is ‘caught in the middle’ between noble horses and humble donkeys can be confirmed, so long as we understand the genetic process in question. In fact, the mule can be perceived (and culturally constructed) as the biological son of two fathers: a horse and a donkey. This could be true even if we accept to read ‘my mother is a horse’ in Fable 128 Chambry, since according to a biological view widespread in antiquity the fact of having a mare as mother does not exclude that this mare could have been impregnated by two different fathers of two different species.

In a way, the mule is an ‘adulterated horse’ that is eager to do equine things (parades or even, occasionally, races), but can do them only to a limited extent, since the donkey’s seed flowing in its veins affects in a negative way its performances (and its identity). But that is not all.

We must remember that in both Greek and Roman society *moicheia* and *adulterium* are strongly linked with the ideas of *miasma* and *contagium* / *contaminatio*. And *miasma* and *contagium/contaminatio* usually imply a threat to purity and a violation of the moral order of Nature, whose consequences can affect (and even destroy) an entire community⁵⁴.

In the light of this widespread belief, it is easy to understand why the ‘adulterated’ identity of the mule (as well as the identity of its donkey father and its mother) needs to be disguised by a sort of symbolic camouflage. In terms of material culture, all the zoo-technical strategies adopted undoubtedly have practical purposes. However, from a zoo-poietic perspective, all the practical achievements can be read in a different way: it is to escape *miasma* and *contagium* that ‘horsification’ of the donkey-stud and ‘donkeyfication’ of the mare are needed. In other terms, if on the one hand the mule is thought of as an ‘adulterated’ or ‘polluted’ animal, its adulteration and pollution need to be deeply concealed at a very symbolic level. Of course, I am well aware that this move might seem counter-intuitive, but, as cultural anthropology shows us, cultures often move in counter-intuitive ways. In this respect, in the last section of the paper I will show how traces of this counter-intuitive way of

⁵³ Griffith 2006b, 309.

⁵⁴ On the Greek *miasma* (and adultery as pollution), see e.g. Parker 1983, 95; Petrovic-Petrovic 2016, 9,60,110,120. On the ‘cultural disorder’ generated by the action of *contaminare*, see Guastella 1985, 52-65; Guastella 1988, 25-35.

thinking about the mules are hidden even in the Aristotelian account of their sterility.

3. The mule and its exceptional sterility: the theories of Aristotle

We mentioned *en passant* that one problem for farmers who want a mule is its proverbial infertility. In fact, even the occasional birth of a mule from another mule is seen as a τέρας, an *omen*, or a prodigy⁵⁵.

It is worth noting that, unlike 19th century zoologists such as Buffon, both Greeks and Romans thought the sterility of hybrid beings was the exception rather than the rule. Especially in peripheral zones of the οικουμένη like Africa, crossbreeding usually gave rise to many new species both in the wild and in captivity. There are several accounts of dogs mating with wolves, with foxes, and even with tigers, and of animals which, after mating with heterophile beings, generated all kinds of strange creatures⁵⁶. In the light of this, the difficulty of mule reproduction is seen as a hard-to-resolve biological problem, and Aristotle, for instance, speaks of πήρωσις or ‘deformity’ in this respect:

Ἐν μὲν οὖν τοῖς ἀνθρώποις καὶ τοῖς ἄλλοις γένεσιν, ὥσπερ εἴρηται πρότερον, κατὰ μέρος ἢ τοιαύτη συμβαίνει πήρωσις, τὸ δὲ τῶν ἡμιόνων γένος ὅλον ἀγονόν ἐστίν.

As I said earlier, this particular deformity occurs in man and in the other kinds of animals to some extent, but with mules it is the whole race that is infertile⁵⁷.

In other words, the mule is seen as the victim of a sort of congenitally incurable disease that, from the viewpoint of speciation, leads to a biological dead-end. To explain the congenital defect of this animal species, Aristotle first examines the causes of accidental sterility in other species (absorption of semen in the body of exceptionally strong males, a male seed which is exceptionally fluid or cold, weak menstruation in females, etc...). He then argues against the thesis of other natural philosophers, including Empedocles and Democritus and, in the end, presents his own theory⁵⁸:

⁵⁵ See, e. g., Hdt. 1,55,2 and 91,5-6 (see Li Causi 2008, 74 and 86; Strong 2010, 455-464); Varro *rust.* 2,1,27-28; Cic. *div.* 1,36.

⁵⁶ On hybridization as speciation in ancient folk biology, see Li Causi 2014, 63-79. A recent contribution on Aristotle’s viewpoint on hybridization is Groisard 2017, 153-170 (esp. 158-166 on mules).

⁵⁷ Arist. *GA* 747a,23-25 (see also 746b,13-17). All the English translations of *GA* are by Peck 1942, whose text is here followed.

⁵⁸ On Aristotle’s criticism of Democritus and Empedocles, see e.g. Goisard 2017, 162-166.

ἐκ δὲ τῶν ὑπαρχόντων τῷ γένει τῶ τῶν ἵπων καὶ τῶ τῶν ὄνων θεωρῶν ἄν τις μᾶλλον λάβοι τὴν αἰτίαν, ὅτι πρῶτον μὲν ἐκάτερον αὐτῶν ἐστὶ μονοτόκον ἐκ τῶν συγγενῶν ζῴων, ἔπειτ' οὐ συλληπτικά τὰ θήλεα ἐκ τῶν ἀρρένων αἰεὶ, διόπερ τοὺς ἵππους διαλείποντες ὀχεύουσι [διὰ τὸ μὴ δύνασθαι συνεχῶς φέρειν]⁵⁹. ἀλλ' ἢ μὲν ἵππος οὐ καταμηνιώδης, ἀλλ' ἐλάχιστον προΐεται τῶν τετραπόδων· ἢ δ' ὄνος οὐ δέχεται τὴν ὀχείαν, ἀλλ' ἐξουρεῖ τὸν γόνον, διὸ μαστιγοῦσιν ἀκολουθοῦντες. ἔτι δὲ ψυχρὸν τὸ ζῶον [ὁ ὄνος]⁶⁰ ἐστὶ, διόπερ ἐν τοῖς χειμερινοῖς οὐ θέλει γίνεσθαι τόποις διὰ τὸ δύσριγον εἶναι τὴν φύσιν, οἷον περὶ Σκύθας καὶ τὴν ὄμορον χώραν, οὐδὲ περὶ Κελτοὺς τοὺς ὑπὲρ τῆς Ἰβηρίας· ψυχρὰ γὰρ καὶ αὕτη ἡ χώρα. διὰ ταύτην δὲ τὴν αἰτίαν καὶ τὰ ὀχεία ἐπιβάλλουσι τοῖς ὄνοις οὐχ ὡςπερ τοῖς ἵπποις κατ' ἰσημερίαν, ἀλλὰ περὶ τροπᾶς θερινᾶς, ὅπως ἐν ἀλεινῇ γίνηται ὥρα τὰ πωλία (ἐν τῇ αὐτῇ γὰρ γίνεται ἐν ἧ ἂν ὀχευθῆ· ἐνιαυτὸν γὰρ κύει καὶ ἵππος καὶ ὄνος). ὄντος δ' ὡςπερ εἴρηται ψυχρὸν τὴν φύσιν, καὶ τὴν γονὴν ἀναγκαῖον εἶναι τοῦ τοιοῦτου ψυχρᾶν. (σημεῖον δὲ τούτου· διὰ τοῦτο γάρ, ἐὰν μὲν ἵππος ἀναβῆ ἐπὶ ὠχευμένην ὑπὸ ὄνου, οὐ διαφθεῖρει τὴν τοῦ ὄνου ὀχείαν, ὁ δ' ὄνος ἐὰν ἐπαναβῆ, διαφθεῖρει τὴν τοῦ ἵππου διὰ ψυχρότητα τὴν τοῦ σπέρματος.) ὅταν μὲν οὖν ἀλλήλοις μιχθῶσι, σώζεται διὰ τὴν θατέρου θερμότητα, θερμότερον γὰρ τὸ ἀπὸ τοῦ ἵππου ἀποκρινόμενον· ἢ μὲν γὰρ τοῦ ὄνου ψυχρὰ καὶ ἡ ὕλη καὶ ἡ γονή, ἢ δὲ τοῦ ἵππου θερμότερα. ὅταν δὲ μιχθῆ ἢ θερμὸν ἐπὶ ψυχρὸν ἢ ψυχρὸν ἐπὶ θερμὸν, συμβαίνει αὐτὸ μὲν τὸ ἐκ τούτων κύημα γενόμενον σώζεσθαι καὶ ταῦτ' ἐξ ἀλλήλων εἶναι γόνιμα, τὸ δ' ἐκ τούτων μηκέτι γόνιμον ἀλλ' ἄγονον εἰς τελειογονίαν. Ὅλως δ' ὑπάρχοντος ἐκατέρου εὐφυοῦς πρὸς ἀγονίαν, τῷ τε γὰρ ὄνῳ ὑπάρχει τὰ ἄλλα τὰ εἰρημένα, καὶ ἐὰν μὴ μετὰ τὸν βόλον τὸν πρῶτον ἄρξηται γεννᾶν, οὐκέτι γεννᾷ τὸ παράπαν· οὕτως ἐπὶ μικροῦ ἔχεται τοῦ ἄγονον εἶναι τὸ σῶμα τῶν ὄνων. ὁμοίως δὲ καὶ ὁ ἵππος· εὐφυῆς γὰρ πρὸς τὴν ἀγονίαν, καὶ τοσοῦτον λείπει τοῦ ἄγονος εἶναι ὅσον τὸ γενέσθαι τὸ ἐκ τούτου ψυχρότερον· τοῦτο δὲ γίνεται, ὅταν μιχθῆ τῇ τοῦ ὄνου ἀποκρίσει. καὶ ὁ ὄνος δὲ ὡσαύτως μικροῦ δεῖν κατὰ τὸν οἰκεῖον συνδυασμὸν ἄγονον γεννᾷ, ὥστε ὅταν προσγένηται τὸ παρὰ φύσιν, εἰ τότε ἐνὸς μόλις γεννητικὸν ἐξ ἀλλήλων ἦν, τὸ ἐκ τούτων ἔτι μᾶλλον ἄγονον καὶ παρὰ φύσιν οὐθενὸς δεήσει τοῦ ἄγονον εἶναι, ἀλλ' ἐξ ἀνάγκης ἔσται ἄγονον.

We shall be more likely to discover the reason we are looking for if we consider the actual facts with regard to the two species, horse and ass. First, then, both horse and ass, when mated with their own kind, produce only one at a birth; secondly, the females do not on every occasion conceive when covered by the male, and that is why breeders after an interval put the horse to the mare again [because the mare cannot bear it continuously]. Mares do not produce a large amount of menstrual discharge; indeed they discharge less than any other quadruped; she-asses too do not admit the impregnation, but pass the semen out with their urine; and that is why people follow behind, flogging them. Further, the animal is a cold subject; and as it is by nature so sensitive to cold, it is not readily produced in wintry regions, such as Scythia and the neighbouring parts, or the Keltic country beyond Iberia, which is also a cold quarter. For this reason they do not put the jack-asses to the females at the equinox, as is done with horses, but at the time of the summer solstice, so that the asses' foals may be born

⁵⁹ On the text in square brackets, see Peck 1942 in *apparatus*.

⁶⁰ ὁ ὄνος is deleted in *Btf* (see the *apparatus* of Peck 1942).

when the weather is warm. (Since the period of gestation in both horse and ass is a year, the young are born at the same season as that when impregnation takes place.) As has been said, the ass is by nature cold; and a cold animal's semen is, of necessity, cold like itself. (Here is a proof of it. If a horse mounts a female which has been impregnated by an ass, he does not destroy the ass's impregnation; but if an ass mounts her after a horse has done so, he does destroy the horse's impregnation – because of the coldness of his own semen). Thus when they unite with each other, the impregnation remains intact by reason of the heat resident in one of the two, viz., that of the horse, whose secretion is the hotter. Both the semen from the male and the matter supplied by the female are hotter in the case of the horse; with the ass, both are cold. So when they unite – either the hot one added to the cold, or the cold added to the hot – the result is (a) that the fetation which is formed by them continues intact, i.e., these two animals are fertile when crossed with each other, but (b) the animal formed by them is not itself fertile, and cannot produce perfect offspring. Besides, both horse and ass have a general natural disposition to be infertile. I have already mentioned several points about the ass, and another is that unless it begins to generate after the first shedding of teeth, it never generates at all; so close does the ass come to being infertile. It is the same with the horse; it is naturally disposed to be infertile; all that is wanting to make it such is that its secretion should be colder, and this occurs when it is united with that of the ass. In the same way the ass comes within an ace of generating infertile offspring even when it mates with its own kind; so that when there is the additional factor of unnatural mating beside the difficulty it has in producing even a single young one in the normal way, the resultant offspring is still more infertile and unnatural; in fact, it will lack nothing to make it completely infertile, and will be infertile of necessity⁶¹.

To sum up, horses and donkeys, whose crossbreeding gives birth to mules, are cold animals, and for this reason naturally predisposed to infertility⁶².

⁶¹ Arist. GA 748a,14-b,18.

⁶² Varro *rust.* 2,1,27 and Colum. 6,37,3-4 seem to confirm this theory: because of the heat, *mularum fetus regionibus Africae adeo non prodigiosos haberi, ut tam familiares sint incolis partus earum, quam sunt nobis equarum* (Colum. 6, 37, 3: «in Africa the production of offspring by mules is so far from being considered a prodigy that their offspring is as familiar to the inhabitants as those born from mares are to us»). In some respects, this *locus* seems to match with Arist. HA 580b,1-9: Εἰσὶ δ' ἐν Συρίᾳ οἱ καλούμενοι ἡμίονοι, ἕτερον γένος τῶν ἐκ συνδυασμοῦ γινομένων ἵππου καὶ ὄνου, ὅμοιον δὲ τὴν ὄψιν, ὥσπερ καὶ οἱ ἄγριοι ὄνοι πρὸς τοὺς ἡμέρους, ἀπὸ τίνος ὁμοιότητος λεχθέντες. Εἰσὶ δ' ὥσπερ οἱ ὄνοι οἱ ἄγριοι καὶ αἱ ἡμίονοι, τὴν ταχυτῆτα διαφέροντες. Αὗται αἱ ἡμίονοι γεννῶσιν ἐξ ἀλλήλων. Σημεῖον δέ· ἤλθον γάρ τινες εἰς Φρυγίαν ἐπὶ Φαρνάκου τοῦ Φαρναβάζου πατρός, καὶ διαμένουσιν ἔτι. Εἰσὶ δὲ νῦν μὲν τρεῖς, τὸ παλαιὸν δ' ἑννέα ἦσαν, ὡς φασὶν («in Syria there are the so-called 'mules', a different animal from those which are the offspring of horse and ass, though similar in appearance, just as wild asses are, compared with domesticated ones, and this accounts for their name. Like the wild asses, these 'mules' are exceptionally swift of foot. They breed with their own kind, as is proved by the following incident: some of them

Donkeys are even colder than horses, and their sperm is so cold that it not only presents difficulties for generation, but can also destroy the seed of other mates retained in the womb.

These latter details might seem minor, but they are not. In fact, Aristotle's insistence on the hygro-thermal differences between both animals is closely linked to the hierarchical concept of living beings that emerges in several sections of his biological corpus. An iconic model of this concept has been developed by Arnaud Zucker and is shown in the table below⁶³:

Categories	Wet	Dryness	Heat	Cold	Earth
Humans, quadrupeds, viviparous, cetaceans	+	-	+	-	-
	(viviparous)		(complete product)		
Birds, serpents, viviparous quadrupeds	-	+	+	-	-
		(egg)	(complete product)		
<i>Selaké</i>	+	-	+	-	-
	(viviparous)		(complete product)		(soft egg)
Cephalopods	-	+	-	+	+
		(oviparous)		(incomplete product)	(soft egg)
Insects	-	+	-	+	+
		(larviparous)		(incomplete product)	

In Aristotle's view, the more the animals are the result of a harmonic *kra-sis* (i. e. 'temperate fusion') of hot and wet, and the less they are compounded with earth, the higher the position they hold in the *scala naturae*. Humans, herbivorous quadrupeds, viviparous animals and cetaceans are at the top of this special ranking since their bodies come from the fusion of wet and hot, and their physical make-up is poor in earthy substances. Moreover, these top-ranking animals are more 'perfect' than others because they bring forth creatures whose bodies are already complete and well-defined at the moment of birth. Conversely, at the very lowest level of the *scala naturae* are insects and other larviparous beasts which give birth to σκώληκα (*larvae*, or maggots). They are the bodily compound of cold and dry and are full of earth.

came to Phrygia in the time of Pharnakes the father of Pharnabazus, and some are there still. There are three of them there now, though in the old days there were nine, so it is said»: I have slightly changed Peck's translation). In this last passage, it seems that Aristotle hesitates to believe the possibility that mules can be fertile, and is inclined to think that the Syrian ἥμιονος is a different kind of living being.

⁶³ See Zucker 2005, 162. The English translation of the table reproduced here is mine.

Within this framework, it is clear that highlighting the coldness of the horse and the donkey, as well as specifying that the donkey is colder than the horse, means that although they occupy a very high position in the *scala naturae*, 1) neither animal is at the top, and 2) the donkey holds an inferior position to the horse.

What happens is that in Aristotle's *De generatione animalium*, the biological explanation of the sterility of the mule becomes, in a way, the scientific version of a widespread and die-hard common sense understanding emerging in folk knowledge and in the Aesopic fables, as well as in other philosophical accounts: the horse is nobler (because is less cold) than the donkey, and the donkey, while fecundating the mare, can destroy the horse's seed. In a way, the prejudices against the generation of that boastful, hybrid animal which is the mule (and against its parents too) are thus confirmed and reinforced on a hygro-thermal basis⁶⁴.

4. Conclusions

In conclusion, the picture that emerges from the texts examined here confirms a widespread trend emerging in ancient Greco-Roman culture, according to which the market economy and profit-oriented practices (as well as human τέχνη) are seen as ambivalent and double-edged. From this perspective, the buying and selling of animals is nevertheless considered morally superior to dealing in common goods. While the latter is seen as shameful and ignominious, the former is linked to agricultural production, which is usually associated, both for the Greeks and the Romans, with a vague idea of primeval ethical virtue⁶⁵.

In the light of these conceptions, the mule is not only a multi-functional and efficient 'living tool' but, because of the objective difficulties in its 'manufacture', it is both a tangible measure of wealth and a status symbol.

Against the background of this animal's economic value, it seems that its mere existence is implicitly perceived as a threat to the moral order established by nature, especially because it is seen as a living artefact produced by human τέχνη, or even by human violence. It may be for this reason that the origins of the mule need to be downgraded on a symbolic level. In the light of

⁶⁴ I am not sure I can agree with the anonymous referee of this paper when he says that Aristotle is «reflecting a deep-seated Indo-European anxiety over hybridity and miscegenation». As far as I understand O'Flaherty 1985, 493-498, the cultural representations of the mule in Sanskrit culture, as well as the Sanskrit anthropology of reproduction *tout court*, only partially seem to match the Aristotelian accounts of hybridity and sterility.

⁶⁵ Howe 2014b, 136-150 (esp. 139-140).

their folk biological theories as well as their hierarchical (or polar) perspective of the world, the ancients ‘construct’ this hybrid being as the by-product of the adulteration of a relatively noble animal, the horse, whose blood line is polluted by the ‘dirty’ seed of the relatively inferior equid donkey.

Such ideas also emerge in Aristotle’s biology, where a set of popular prejudices against the equids seem to be incorporated in the hygro-thermal scientific framework of *De generatione animalium*. Here the mule is culturally constructed as the defective agglutination of two extremely cold seeds, that of the horse and that of the donkey. The donkey’s seed, however, is even colder than the horse’s, and can destroy the horse’s vital and creative heat.

In the light of all this, it becomes clear that the livestock breeding strategies aimed at ‘manufacturing’ the mule not only have a utilitarian goal, but also need to achieve, from a zoo-poietic perspective, the artificial assimilation of what is dissimilar and unequal by nature. The need to ‘horsify’ the stallion asses or humiliate the mares before mating may hide a type of ‘religious’ fear. If it is clear that μοιχεία and *adulterium* are sources of moral as well as natural disorder, the ‘donkeyfication’ of the horse and the ‘horsification’ of the donkey become an apotropaic expedient. By changing the nature of both animals *before* the ominous contact of their seed, it may be possible to avoid the μίασμα, *i. e.*, the contagion with which the gods can affect an entire society whose members have ‘sinned’ against nature⁶⁶.

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⁶⁶ On the link between *miasma* and *moicheia*, see also Li Causi 2008, 82-92.

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PIETRO LI CAUSI

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Abstract: After reviewing some of the data regarding the use and exchange value of the mule, the horse and the donkey, the paper focuses the symbolic meaning of these animals for the ancients. More specifically, it addresses the theories of hybridization according to which the process of adulteration of equine blood lines might be explained as a 'zoo-poietic' construction of the animal. Finally, it shows briefly how Aristotle's explanation of the mule's inborn sterility may be read as a reflection of some of the folk prejudices against its creation.

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