

THE CAMEL, THE WAGON, AND THE DONKEY
IN LATER ROMAN EGYPT

1. The Problem

It is a central thesis of Richard Bulliet's well-known book *The Camel and the Wheel*¹ that the camel supplanted wheeled transportation over a wide area of the Near East and North Africa during the Roman period, before the Arab conquest. Much of the book is devoted to explaining and describing this spread of camel use (and wagon disuse) through the various countries concerned. The present article attempts (in fulfillment of Bulliet's urgings on p. 6) to investigate the relationship to one another of these (and other) forms of transportation in Egypt in the period from the fourth century to the eighth, with a certain amount of necessary consideration of earlier periods.

Egypt does not occupy a particularly central point in Bulliet's discussion. Beginning with a general premise (p. 14) that the disappearance of the wheel antedated the Islamic conquests, he asks when this phenomenon can be dated in each area. For Egypt, he writes as follows:

Roman Egypt (30 B.C. onwards) had both wagon transport and camel transport, the latter being a relatively recent and growing phenomenon. A specialist on the economy of this Roman province [A. C. Johnson] has written: "Transportation by land was usually by camel or donkey. Wagons were seldom used, although a tax found in Upper Egypt on wagons was paid by a private company engaged in transport, and some of the large estates had wagons for farm work of various kinds." In addition, figures have been preserved from the first century A.D. detailing the specific cost of carrying sheaves of grain by wagon, rents for wagons, and the price for which a wagon was sold. Therefore, the disappearance of the wheel in Egypt must have been subsequent to the first century A.D. even though the process would appear to have begun before that time.

The range in which Bulliet considers the change to have occurred is indicated (p. 27) as the fourth to sixth centuries. As for the other chronological *terminus*, he suggests (p. 118) that "the practice of camel breeding began in Egypt in the desert east of

¹ Cambridge, Mass. 1975. I am grateful to Bulliet for reading a draft of this article.

Thebes...for purposes of trade, developed in a military as well as a commercial direction, and spread southward..." This trade he assigns to the second and first centuries B.C. (p. 116; he was intent on showing that the introduction was pre-Roman, which it was). The gradual adoption of the camel had to be accompanied by the greater integration of camel breeders into Egyptian valley society.

2. Some Facts and Figures

The wagon did not disappear from Egypt in the fourth to sixth centuries. Wagon drivers (*hamamelatai*) appear still in documents as late as *P. Apoll.* 98.12 and 99.4, probably of the later seventh century.² The sixth-century Aphrodito archives yield wagons also, in *P. Lond.* V 1698.6 (mid-sixth century), *P. Cair. Masp.* III 67279.20 (around 570) and 67303.7,13,20 (553). The last of these is an elaborate lease of a wagon for gathering crops from three properties, with a very full description of the wagon itself: "the transport wagon belonging to you, covered with iron and equipped, that is, the two wheels with the iron outer coverings and the hubs and the rims and basket seat with rings and pole and yoke with chains and axle and wooden wagon box." The harness was obviously an ancient throat-and-girth harness (Bulliet, p. 179), not some more modern variety which might have been imported from Tunisia and competed more effectively.

Though poorly dated (seventh century, probably), the so-called *etmulon* Coptic ostraka provide numerically more substantial evidence. These receipts or memoranda for transportation of grain to a mill, some 165 in number, mostly include a number of wagons, of sacks, and of artabas (with one wagon usually holding about fifteen artabas, or some five times what a donkey could). A single text refers to as many as twenty-one wagons.³ The presence of wagons at the time of the Arab conquest and after, then, is firmly established by the documents. When they *did* disappear (as they apparently did), I do not know, but it must have been eighth century or later.

This information, of course, does not help us to evaluate the relative importance of camels and wagons in the sixth to eighth

² Rémondon dated them to the early eighth century along with the rest of the find, but Gascou and Worp have recently made out a case for an earlier dating of much of it, in *ZPE* 49 (1982) 83-95.

³ See *BASP* 16 (1979) 6-7 for references and an example. The twenty-one wagons occur in *Zaës* 66 (1931) 51-68, 122-38, as no. 60.

centuries. I do not see how to do this definitively with the available evidence. *P. Oxy.* XVI, with its wealth of sixth- and seventh-century texts (especially connected with the Apions) contains nine documents which refer to camels, none which refer to wagons. But this fact ought not be overplayed. The three volumes of *P. Cair. Masp.*, a sixth-century archive also, turn up three for each. Regional differences, variation in type of documents preserved, or something else?

Once again, the early eighth-century *P. Lond.* IV has seven camels, no wagons. But *P. Apoll.*, contemporary or just prior, has two camels, two wagon drivers. Some perspective is needed. It can at least partly be provided by looking at total figures over a long period. *Wörterbuch* I and its Supplement have a total of twenty-two documentary references for wagons, seventy-nine for camels.⁴ Over a millennium, camels were referred to in the papyri a lot more than wagons were.⁵

If we turn to the earlier end of the chronological range and look at the Zenon archive, we find the camel already well-established in Egypt in the middle of the third century B.C. Of thirteen documents mentioning camels, eight are Egyptian (the others refer to operations in Palestine). By comparison, there are nine references to wagons and one to a wagon driver: a sort of rough parity. Moreover, two of the Zenon camel references are to fairly sizable numbers: more than sixty in *P. Lond.* VII 2179, eighty in *P. Cair. Zen.* V 59835. It is worth pointing out that camels do occur quite commonly in the documents dealing with Zenon's activities on behalf of his employer in Palestine and Jordan, and from this fact one might surmise that the introduction of camels on a substantial scale into Egypt came about under Ptolemy II and from his possessions adjoining Egypt in Palestine. The reign is famous for introducing new species of plants and animals, and camels may have been one of the more lasting of those imports. The Palestinian Ptolemaic possessions would also have offered a body of camel breeders, an essential part of any continuing transplant of the animal.

⁴ A crude statistic. Many of the references in *WB* I are volumes rather than documents; but this is true for both words. I have not refined the figures by looking them all up, except for the Supplement's references to *SB* VII.

⁵ Sales of camels are listed in *Aegyptus* 19 (1939) 49-50, with supplementary references in O. Montevacchi, *La papirologia* (Turin 1973) 212.

There is something wrong with the terms of reference of this discussion, however. The choice is not between the camel and the wagon. Even apart from horses,⁶ there is a more important contender: the donkey. There are almost twice as many references for donkeys as for camels (143 vs. 79 in the same body of material), and that crude count may understate things considerably.⁷ If, as I believe the evidence cited shows, the cart was never a large part of Egyptian land transport, did the camel instead oust the humble ass? A hasty look might provide some comfort to this suggestion: *P. Oxy.* XVI has only one donkey reference to its nine camels, and *P. Lond.* IV none for its seven camels.

That view too seems to me untenable. *P. Cair.* *Masp.* has four donkeys to three camels. Moreover, a look at Diehart's *Prosopographia Aegyptiaca* for the sixth to eighth centuries⁸ turns up five *kamelari* and *kamelitari*, but thirteen *oneiatari* (and no wagon drivers). Once again, local differences and the character of documentation may affect the figures, but we are put on warning that even the absence of some form of transportation from a major archive may not mean that it was generally lacking in Egypt.

In sum, then, as far as we can trust our evidence, we find (a) camels already present in numbers in the Nile valley in the third century B.C.; (b) wagons throughout the millennium as a comparatively minor presence; (c) wagons nonetheless present in the sixth and seventh centuries in as respectable numbers as at any other period; (d) camels and wagons coexisting in documents from the third century B.C. to the seventh or eighth A.D.;⁹ and (e) a more important role for donkeys than either camels or wagons in every period up to the latest.

⁶ I note that the figure for references to horses from *MB I* and *Suppl.* is fifty, more than twice that for wagons and almost two-thirds that for camels.

⁷ It is true that donkeys were in universal use in the region in question, and one might ignore them (as Bulliet did) as a constant. All the same, the impact of the camel on the wagon in any particular setting was affected by the relative roles not only of these two but of the donkey as well.

⁸ Vienna 1980 = *MPPER* N.S. XII. The index of occupations and titles is on pp. 371-89.

⁹ Cf. *P. Cair.* *Zem.* II 59207 and *P. Apoll.* 98.

3. Some Explanations

Land transportation played only a secondary role in Egypt. As in other aspects of life, the Nile was central. All long-distance transportation (except to oases or Red Sea ports)¹⁰ was carried out by boat, which was far more efficient. We must ask, then, what roles land transport played in the Nile valley. Perhaps most important was movement of goods from farms to river ports for shipment, especially in the case of tax payments in kind. Such distances were, however, short except in the Fayum, as the cultivable land along the Nile is generally a very narrow band. The Fayum was a special case, with considerable distance to any port, and it is no accident that so much of what we know about transportation by land--donkeys, camels, and wagons alike--pertains to this one region. There was also local transportation of other sorts: to the nome capital and back, and to one's scattered farmsteads and back.

It would take a detailed study of the documents relevant to all types of land transport to permit definitive conclusions, but a few suggestions may be in order. First, the Egyptian countryside was extremely cut up with canals, drainage ditches, dikes, and other irrigation works. Animals are easier to get around with than wagons in such an environment. Secondly, wagons are expensive, camels cheaper, donkeys cheapest. The more expensive means of transportation may be more efficient if used much of the time, but only if one's use is great enough to allow the capital invested to be put to work with this sort of efficiency. A real consideration of relative efficiency would require more information about costs, carrying capacity, and durability than we possess. In any case, most Egyptian farmers neither needed transportation much of the time nor had the financial resources to own it; a donkey was probably as much as they could afford,¹¹ and even donkeys were to a large degree owned by professional donkey drivers.

¹⁰ Camels certainly played an important role in this cross-desert travel, and it is probably no accident that the use of the deserts and desert ports increased after the introduction of the camel. Even there, however, it would be a mistake to assume that the wagon is absent. Two of the Wadi Fawakhir ostraka (*SB* VI 9017, nos. 9 and 17) mention wagons, one in a context referring to its coming *and*, i.e. into the desert from the valley.

¹¹ Some rough indexes: male donkeys in the second century cost an average of about 250 dr., females about 160 dr. (based on A. C. Johnson, *Roman Egypt* [Baltimore 1936] 230-31). For camels, the figures are males, 611 dr. (only three examples), females,

Moreover, the camel's superiorities to the donkey will have had limited use in an environment like the Nile valley. Greater range and endurance, the ability to go long stretches between watering--this is all irrelevant for short trips in a well-watered valley. ¹²

The camel competed against both donkey and wagon in the Nile valley; it was dominant in the cross-desert trade (including that from the Memphis Nome to the Arsinoite). But as far as Greek and Coptic documents take us, it drove neither out of use. Rather, the economic niches occupied by each seem to have become better defined, and the wagon, never in very common use, became still less common, while higher volume and longer distance donkey traffic was probably replaced by camels. A detailed history of patterns of usage remains to be written; it would be worth the trouble.

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634 dr. (Johnson, p. 231). I cannot offer comparable wagon costs. Even a donkey was a major capital investment for someone whose annual income might be no more than the price of a female donkey.

¹² It is thus no surprise to find that payments for grain transportation in *P. Col.* II I recto 4 to donkey drivers amount to more than three times those to camel drivers.