

Glimpses of long-distance pack donkeys **

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Abstract: Long-distance caravans are often deliberately invisible, from prehistory to today, preferring to stay under the radar of tax-hungry authorities and preying bandits (and nowadays also unfortunately of the attentions of animal-charity NGOs). There is a fine line in history and prehistory between entrepreneurial trading and smuggling; donkeys are ideally suited to taking back-routes and detours, to avoid taxes and attacks. Studies of this sector are understandably very limited, but a picture of the operation of caravans in antiquity can gradually be built up.

Long-distance donkey-caravans became a significant transport mode in the Ancient Near East from the late 4th millennium BC; archaeological commentary on Mesopotamia focused until recently on river-boat transport as emphasised in official records, but now there is growing recognition of the complementary role of the less visible donkeys. Evidence from antiquity is thin, due to the remote nature of caravan operations and the scarcity of early textual accounts. Valuable exceptions are the hoard of cuneiform tablets from Kaneš on the long-distance donkey-caravan route between Mesopotamia and Anatolia in the early 2nd millennium BC, and the recent archaeological investigation of the 3rd-millennium BC Abu Ballas donkey-caravan trail in Egypt.

Further insights can usefully be obtained from ethnographic accounts from recent centuries. Reports from travellers in a range of regions give glimpses of the strategies and daily operation of sometimes vast donkey-caravans carrying salt and other goods long distances, in a complex series of transactions, with equipment differing little from thousands of years before.

1) Invisible donkey-caravans

There has been strong interest throughout history in conducting profitable activities under the radar of authorities, and the advent of the donkey for long-distance transport, in the Ancient Near East in the 4th millennium BC, may have provided that facility from earliest times of its use.³ Smuggling could be considered as equivalent to trade before the capability of authorities to impose taxes, and equivalent in aim to diversion of routes to avoid unregulated raiding. Laden donkeys can negotiate rocky, precipitous paths, and for example advantage was taken of this by Assyrian merchants in the early 2nd millennium BC for taking difficult back-routes into Kaneš in Anatolia to avoid tax-payment on their goods⁴ – see later on this trade.

Modern caravan-drivers worldwide also seek invisibility not only from tax-hungry authorities and preying bandits, but also from the unwanted attentions of NGOs who would regulate and publicise their treatment of working animals.⁵ Entrepreneurs in Africa and elsewhere, including from Turkey into Iran and Iraq, and between Lebanon and Syria, have taken this a step further, making profitable use of donkeys' excellent memory for routes, good night vision and ability to work unsupervised by sending large trains of donkeys (and mules) unaccompanied across national borders laden with smuggled goods, through desert, mountains or dense vegetation where capture is unlikely.⁶

Most descriptions of donkey-caravans are therefore garnered from accounts of travellers in recent centuries and are highly anecdotal. Riemer and Förster,⁷ as part of their valuable work on modern caravans *Desert Road Archaeology in Ancient Egypt and Beyond* (Förster and Riemer (eds.) 2013), list some of the few studies extant on northern African and Latin American donkey-caravans, many focusing largely on geographical information; some caravans are also recorded as continuing in mountainous areas of

China and Nepal.⁸ The Riemer and Förster team themselves in their local investigations in northern Africa only encountered one modern pack-donkey caravan, by accident⁹, for informal interview.

2) Rare glimpses

China

An account of medium-distance donkey caravans in 1920s/30s AD China is therefore welcome. Pioneering female travellers Mildred Cable and Evangeline French made several epic journeys in the desert regions of western China,¹⁰ describing donkey-caravans that they encountered *en route*.

One man, or at the most two, will drive twenty donkeys, riding behind them, shouting incessantly, and never letting them slacken to normal walking pace. ...The donkeys are small and cheap, so he is careless of life and sacrifices them in large numbers to his passion for speed and his reckless output of strength. He will use dangerous short-cuts over which no other class of transport-man will venture, and in bad weather many beasts die by the roadside.¹¹

At inns, the driver removed the panniers, put fodder in the mangers, and slept briefly before driving them on again. Five stages were completed in three days, with the business-owner awaiting the caravan at the end; the donkeys and driver rested for 24 hours before embarking on the return journey.¹²

Africa

For longer-distance journeys, the few accounts of donkey-caravan operation in Africa offer glimpses of the complexity and organisation involved. Binger,¹³ a French explorer in 19th-century AD Africa, describes a figure-of-eight donkey-caravan route (continuing today) whereby the Yarse of central West Africa convey cotton goods and cereals northwards to Saharan markets such as Timbuktu and return with salt slabs; some of these are then taken by different (and fewer) caravans to southern West Africa; there in Ghana the donkeys are in high demand among Hausa traders, who use them to carry kola nuts (highly valued for chewing) back to the Saharan region.¹⁴ Dried fish, matting, sheep/goats and agricultural products are also carried. The caravans consist of the merchants and their escorts and pack animals, mainly donkeys/mules (see Fig. 1) but also oxen for the journeys to the north. If the route is dangerous, an armed guard is added for every 1.5-2 animals; the total caravan consists of a minimum of half a dozen animals and sometimes more than 600.¹⁵

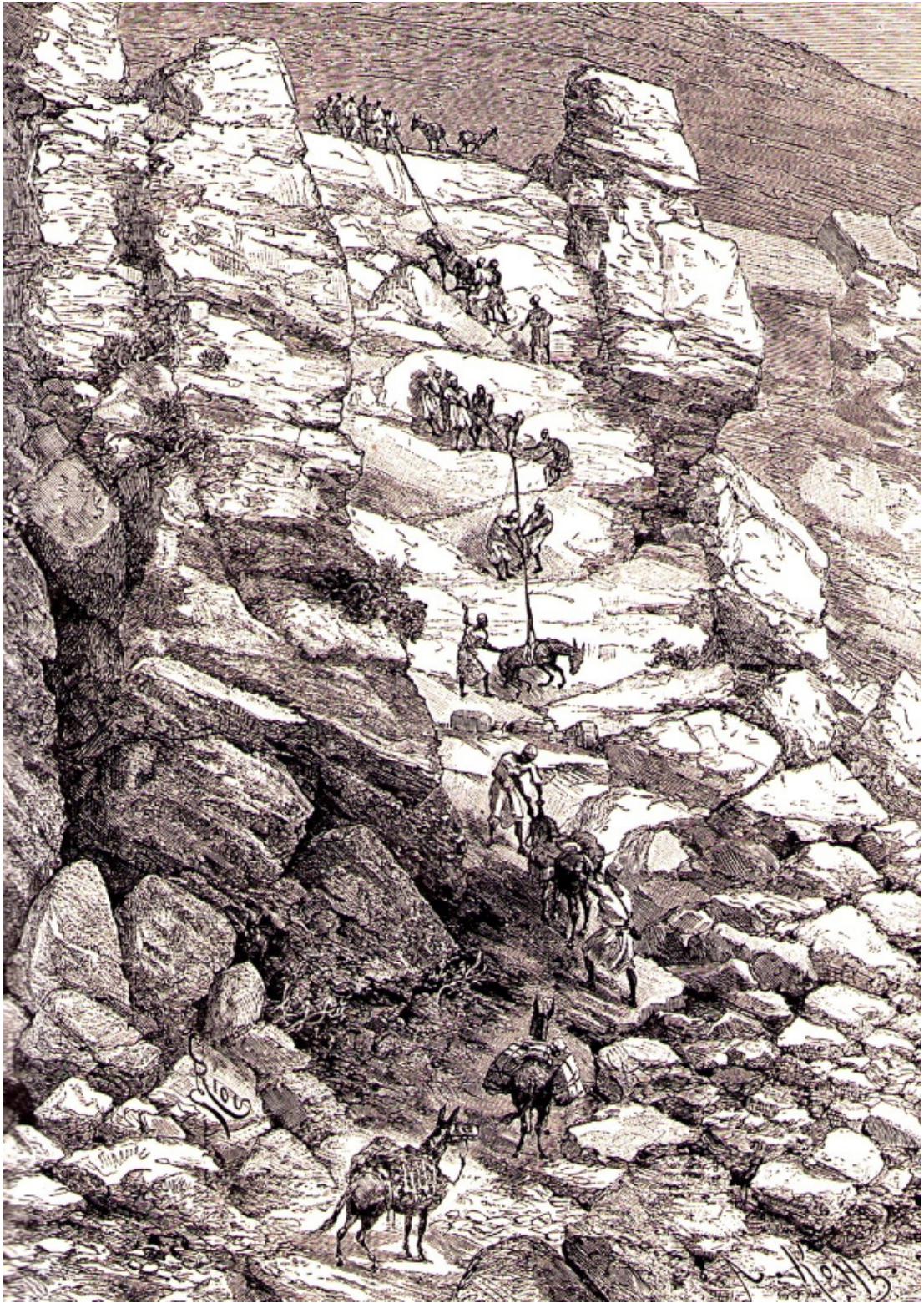


Figure 1: Pack animals being hauled up a precipice in Africa (Binger 1892:363)

In Ethiopia, the salt caravans in north-eastern Ethiopia (Fig. 2), dating from the 6th century AD and continuing to this day, carry salt from the Danakil Depression to the markets in the interior.¹⁶ Vast caravans are assembled, by small traders allying themselves with the large merchants:¹⁷ '[w]hile the going was good the merchants tended to divide up to avoid too much concentration in one area, while in periods of insecurity they stuck together to defend themselves',¹⁸ and '[h]alting places were often in isolated areas to avoid disputes with local populations'.¹⁹ There were no caravanserais, but temporary

stone walls were built for protection and storing of packs; animals were led away from the camp to graze, then tied to stakes, and sometimes protected from predators by a thorn fence. As with the Chinese donkey-drivers above, 'the merchants always overloaded their animals, and if they dropped from fatigue their masters would throw away their burden.' Donkeys were commonly used; choices also included camels, mules and humans (including women), depending on cost/weight/speed calculations.²⁰



Figure 2: Salt caravan from the Danakil Depression, Ethiopia (<http://theonearmedcrab.com>)

The salt trade then fed important salt-bar exchange currency into markets, for purchase of goods and livestock also brought long-distance.²¹ In the 19th century AD in Ethiopia, farmers in the north-eastern highlands of Tigray and Lasta benefited from an elegant multi-point arrangement for maintaining their ox-based plough agriculture, involving donkey-caravans.²² The Ethiopian highlands are fertile but feature heavy clay and steep slopes, workable by oxen but not easily by equids. Oxen were vitally needed as the continuation of annual cultivation was essential, under tenure arrangements, for farmers to maintain their land.

The Lasta highland farmers were able to buy cattle for work at the weekly market at Saqota; these cattle had been purchased by Saqota merchants taking Danakil salt south-west to markets such as Ibbat; merchants from the cattle-breeding areas in Gojam to the south-west brought cattle, cloth and coffee to Ibbat to exchange for the salt, and the cattle were then taken to Saqota market to sell to the farmers. The salt was brought up (as to this day) by donkey/mule/camel caravan from the Danakil depression in the east to Mekele in Tigray, and on south-west to Saqota market. Similarly salt was conveyed to Adowa, by animal or donkey transport, for exchange for cattle from regions such as Gonder. The system was huge in scale – there are reports of salt-caravans of 15,000 donkeys, and of 21,000 cattle/week exchanged at Saqota – and extensive: from Dalol in Danakil to Mekele is 150km, Mekele to Saqota 100km, Saqota to Ibbat 150km, Ibbat to Guderu in Gojam 150km (see Fig. 3).



Figure 1: Examples of movements of salt and cattle in 19th-century AD Ethiopia (© Jill Goulder 2015)

3) Donkey-caravans in antiquity

Two major bodies of material on long-distance donkey caravans in the Ancient Near East derive from the archaeological discovery of the 3rd-millennium BC Abu Ballas donkey-caravan route in Egypt and the unique collection of clay-tablet texts found at the archaeological site of Kültepe (ancient Kaneš) in Anatolia, documenting the large-scale early 2nd millennium BC donkey-caravan trade between there and Aššur in northern Mesopotamia. These latter were preserved by a catastrophic fire, which baked the clay tablets and ensured their preservation.

The Abu Ballas trail in Egypt

In recent years a team of archaeologists led by Frank Förster has investigated a chain of staging-posts for a 400-kilometre desert donkey-caravan route dating back to the late 3rd millennium BC and now known as the Abu Ballas trail²³ with evidence of a sophisticated system of providing ‘sign-posts’ *en route* and food and water at staging-posts.²⁵ The trail has a striking series of orientation points formed of upright stone slabs or stacked stones.²⁵ (Fig. 4).

The clearly fixed route, laid out and maintained by the Pharaonic regime, contrasts with accounts of those taken by caravans elsewhere avoiding attack and taxation. At the

staging-posts, storage jars were replenished with water and grain by special caravans, and staff were stationed there to guard the provisions and bake bread for the caravans.²⁶ Förster has found bread-baking equipment, water-containers, tethering-holes in rocks, and stones carved with grids for playing board-games.



Figure 4: Abu Ballas trail orientation cairn and resting-place (Förster 2007, Fig. 6)

From the distance between them, Förster²⁷ calculates that 'the pack animals either walked c. 40km per day and were watered at the end of every second, or they needed three days at a rate of c. 25–30km to cover the distance, getting their water at the end of every third.' There are plenty of factors affecting this – the condition of the donkeys (and of the drivers), the load, the time of year, and the size of the caravan, which affects the time for loading and unloading, grazing and watering.

The Kaneš/Aššur caravan trade

The cache of clay tablets at Kültepe (ancient Kaneš) in Anatolia details the large-scale early 2nd-millennium BC Assyrian donkey-caravan trade in tin and textiles coming from Aššur in northern Mesopotamia (Figure 5), 1000 caravan-kilometres to the south-east and a journey of six weeks.²⁸ These describe a well-orchestrated system of transporting high-value goods using well-established transport technology.²⁹

There are indications that Assyrian caravans included as many human escorts as donkeys.³⁰ Donkeys in the wild naturally follow a leader in single file,³¹ so are well-adapted to working in caravans, and modern examples demonstrate that a single driver can control dozens of donkeys in a caravan. The donkey-to-human ratio, though, is affected on long journeys by the need for timely unloading and reloading at stops. It appears from the Kaneš tablets that the loading issue was dealt with on the Assyrian caravans by assigning one driver/packer to every one or two donkeys; this partly came about because the Kaneš caravans generally consisted of a convoy of several merchants, for support, company and security, each with his own small consignment carried on up to half a dozen donkeys, with the merchant's own drivers/packers.³² We should not forget, too, the potential role of donkey-drivers in guarding the caravan from attack.



Figure 5: Early 2nd-millennium BC long-distance pack-caravan route between Aššur (northern Mesopotamia) and Kaneš (central Anatolia)

But unfortunately for us many of the practical details of the ‘donkey system’ did not form part of the text-writers’ concerns. There are some references in the Kaneš texts to donkeys being bought and rented *en route* and sold at the end of their journey, as the burdens on the return journey to Aššur (particularly silver) were considerably less bulky. Barjamovic³³ speculates on the unmentioned major agricultural and logistical systems that must have arisen at waystations/inns *en route* supplying water, fodder and food for up to 300 donkeys and their drivers.³⁴

Deductions about donkeys in ancient Mesopotamia

My researches into donkey caravans have been specifically aimed at shedding light on the range of uses of working donkeys in 4th-3rd millennium BC Mesopotamia, a period of major expansion in long-distance trade. Archaeological commentaries on the latter have until recently focused on the use of river-boats for long-distance transport.³⁵ Of course the Tigris and Euphrates rivers were arterial routes for Mesopotamia (see Fig. 5 earlier), but this emphasis is largely based on the cuneiform texts from this period – the clay tablets on which official exchanges were recorded. There is growing evidence, though, of significant private trading in and outwards from Mesopotamia; the urban officials dictating the early cuneiform texts to scribes would have limited knowledge of the activities of private entrepreneurs, particularly given the well-established avoidance tactics used by caravaners to this day.

River-boats in Mesopotamia had the indisputable advantage over pack-caravans of volume,³⁶ making them cost-efficient even when towed. As well as the larger boats, a system of small rafts on the Mesopotamian rivers has been reported from the 1st millennium BC to the 20th century AD, in which quffahs (circular rafts made of rawhide stretched over a basketry frame) and keleks (rafts buoyed up by inflated goatskins) travel downstream with cargo and a live donkey; on arrival, the raft/ frame materials are sold and the skins transported back upstream by the donkey.³⁷ However, letters from the 2nd-millennium BC Archives Royales de Mari and the Code of Hammurabi refer to shipwrecks on both the Euphrates and the Tigris, and to seasonal low waters. As 20th-century AD surveys of the region recount, the Tigris is steep, with narrow, tortuous sections and shifting sandbanks; occasionally the prevailing north-westerly wind reverses so that boats have to be towed downstream as well as up.³⁸ Evidence of taxation and raids affecting transport choice emerges from several of the Mari letters, indicating that donkey

caravans were more able to detour to avoid taxation/customs duty posts and hostile regions but were more subject to attack (see also earlier on Kaneš), though raids were also made on boats.³⁹ David Oates⁴⁰ notes that

the Great Desert route of the eighteenth and nineteenth centuries [AD] consistently kept a day's or even two days' march west of the river [Euphrates], since the regular toll exacted by Beduin was a lesser burden than wanton plundering by the villages of the riverain land, who enjoyed a particularly evil reputation.

Milevski⁴¹ points out, though, that the common mention of robbery of donkey caravans in the Mari texts may have more to do with 'ethnic abhorrence against nomads, mountainous population, etc' than with a genuine crime-wave.

Meanwhile, long-distance east-west routes, far from the rivers, were in operation from pre-donkey times, eastwards across the Zagros mountains into Iran for copper and semi-precious stones, and west to Lebanon for timber and Mediterranean goods⁴².

Human pack

What of human long-distance transportation, before and later in competition with donkey-caravans? Human porters rarely appear in representations or texts in the Ancient Near East, perhaps reflecting (as with donkeys) their lowly function. It may be that much long-distance movement of materials was conducted point to point by individual mobile pastoralists and hunters, rather than by organised portorage.⁴³ By the 3rd millennium BC, though, laden porters, alongside led equids, are for example shown on the Standard of Ur (Fig. 6).



Figure 6: Detail from 3rd-millennium BC Standard of Ur Peace Panel, British Museum (Jill Goulder 2014)

Use of captives or encumbered labourers for long-distance pack carries disadvantages: they may abscond (with the goods), and will probably carry less and move more slowly than well-fed self-employed professional porters. Local porters – probably in the latter category – are mentioned in the 2nd-millennium BC Kaneš texts as being recruited within Anatolia to carry goods between towns when the pack donkeys from Aššur have been sold off. The Kaneš porters were given food and payment; there are examples of porters refusing to travel on routes with brigands or icy roads and having to be substituted by donkeys.⁴⁴ Human porters are 'expensive' if they are taken away from agricultural or

other production,⁴⁵ but can more easily be sent away to find other employment in downtime.

While relay systems for ridden equids, such as the post-horse system, are not uncommon in more recent times, it appears that long-distance donkey caravans, in antiquity and now, use the same animals for the whole journey.⁴⁶ This may reflect the problems in maintaining large stocks of idle animals at each changeover point, whereas porters can find other employment and maintain themselves.

Donkeys and humans walk at a similar speed, but donkeys can typically carry around twice as much long-distance⁴⁷ – though there is an intriguing exception among the sherpas in Nepal, who regularly carry up to well over 100 kilograms in the Himalayan foothills. Another factor is that donkeys can also generally carry far bulkier loads than humans. Humans can travel across steeper and more difficult terrain than even donkeys, and can team up to carry awkward loads and manhandle them over obstacles; but donkeys are more energetically efficient than humans in most terrains.⁴⁸ Donkeys have a uniquely-efficient ankle construction which allows very high energy transfer in motion, well beyond that of cattle and humans, and a gait that minimises energy-consuming vertical oscillation, especially in rough terrain.⁴⁹ Dijkman⁵⁰ also suggests that 'non-muscular structural elements' in the donkey's anatomy (a feature also noted in African women headloading) may contribute to its notable ability to carry heavy loads. The capabilities of donkeys in pack-caravans are indeed often held back by the limitations of the humans who travel with them, in terms of heat tolerance and water and food needs.

4) To summarise

- ✓ There has been very little study of the operation and nature of donkey-caravans, from antiquity to today, and much information is still anecdotal
- ✓ Caravaneers often prefer to remain under official radar, to avoid taxation or attack, unless organised and protected by authorities; donkeys, with their sure-footedness in rough conditions, are well-suited to use of back-routes
- ✓ Donkeys are well-adapted physiologically and behaviourally to employment in long-distance pack caravans in difficult conditions
- ✓ Donkey-caravans provided a valuable additional means of long-distance transport in ancient Mesopotamia, with advantages in many circumstances over river-boats and human portage

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NOTES

** I achieved my PhD as a mature student at the Institute of Archaeology, University College London in 2018 [www.jgoulder.com/archaeology]; my thesis title was *Modern development studies as a resource for understanding working animal use in later human prehistory: the example of 4th-3rd millennium BC Mesopotamia*¹. My book derived from her thesis, *Working Donkeys in 4th-3rd Millennium BC Mesopotamia: insights from modern development studies*,² was published by Routledge in 2020.

This paper, on one aspect of my subject, derives from a short, informal presentation at the 2016 SOAS Donkey Conference so is necessarily very restricted in scope and detail; valuable subjects such as camel caravans, harness and packs, and physical detection of caravan routes are not touched upon here.

Many references in this piece cite my PhD thesis, as it is available online on open access [<https://discovery.ucl.ac.uk/id/eprint/10053639/>] and has in-depth referencing to all points discussed.

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FIGURES

Figure 1: Pack animals being hauled up a precipice in Africa (Binger 1892:363)

Figure 2: Salt caravan from the Danakil Depression, Ethiopia
(<http://theonearmedcrab.com/hamed-ela-and-lake-asale>, open access [16 January 2022])

Figure 3: Examples of movements of salt and cattle in 19th-century AD Ethiopia (© Jill Goulder 2015, on template from www.worldofmaps.net/en/africa/map-eritrea/map-eritrea-northern-ethiopia.htm, open access)

Figure 4: Abu Ballas trail orientation cairn and resting-place (Förster 2007, Fig. 6. © Rudolph Kuper, by permission)

Figure 5: Early 2nd-millennium BC long-distance pack-caravan route between Aššur (northern Mesopotamia) and Kaneš (central Anatolia). (Based on <https://www.worldofmaps.net/en/middle-east/maps-of-middle-east/map-of-middle-east-relief-map.htm>, open access [accessed 6 February 2022])

Figure 6: Detail from 3rd-millennium BC Standard of Ur Peace Panel, British Museum (Jill Goulder 2014)