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Wood

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Wood. Forests were exploited from the very beginnings of Near Eastern civilization. Enough hints exist from such Aceramic Neolithic sites as Jericho in Israel and Çayönü, Asikli Höyük, Nevali Çori, and Hallan Çemi in Turkey to indicate that extensive forest use has a history in this region of at least ten thousand years. These sites provide ample burned evidence for architectural timbers used as building foundations, headers and stretchers in walls, roof posts, roofs themselves, ladders, and furniture. Although the evidence is sometimes to be assessed only by counting empty beam holes, enough burned beams survive at Middle Bronze Age palatial sites such as Kültepe (Kaneš) or Achemhöyük in Turkey so that a reasonable estimate for wood use is in excess of 2,000 trees per 150-room building. The archaeological evidence includes cedar, pine, fir, juniper, oak, spruce, cypress, box, chestnut, walnut, maple, and ash.

Forests. The Lebanon, Anti-Lebanon, Amanus, Taurus, Anti-Taurus, Pontus, and Zagros Mountains probably provided the bulk of quality timber for construction and fine furniture, especially after local wood supplies were exhausted. There is reason to believe, however, that some local supplies--for example, from the Anatolian plateau--were sufficient for most needs, at least until Hellenistic times. At all times lesser-quality woods--poplar, willow, plane, tamarisk, sycamore, elm, beech, and acacia--or wood for specialized uses, such as terebinth, and assorted fruit and nut trees--must also have been exploited for ordinary carpentry, fuel, and pottery production. Wood products such as resins were used in treating illness, in mummification, and for caulking boats.

Wood Production. The surviving architecture at many sites shows considerable use of wood in a wide range of quantities and quality. Much of the wood was probably local, especially for sites on the Anatolian plateau, along the Levantine coast, and in the forested areas mentioned above, where it could be dragged to a site by ox cart. At Gordion in Turkey, cuttings exist in the logs that form the tomb chamber of the Midas Mound Tumulus that reflect precisely this form of timber transport. In Egypt and Mesopotamia, however, good wood had to be imported by water. As far back as Old Kingdom Egypt, timber was transported from Lebanon to Egypt in multiple shiploads. At all times, timber must have been floated down the Tigris and Euphrates Rivers to Mesopotamian cities. The occupations or crafts of woodcutter, timber transporter, timber merchant, and carpenter must have been established from the very beginnings of civilization. Cuneiform texts indicate that royal authorities were concerned about regulating timber cutting, setting timber prices, and imposing taxes on timber.

Timber Trade. The oldest surviving written evidence for an international timber trade is the Palermo stone, in which Snefru, the first pharaoh of the fourth dynasty, tells of importing cedar from Lebanon: "Bringing forty ships filled [with] cedar logs. Shipbuilding [of] cedar wood, one...ship, 100 cubits [long] [=45.73 m], and of *meru* wood, two ships, 100 cubits [long]. Making the doors of the royal palace [of] cedarwood." The text does not specify a place of origin, but Byblos is likely. It is worth noting that the actual word translated here as cedar is *ash* wood or [symbol: apostrophe s- hacek] wood in the texts; there is less than total agreement among Egyptologists that the word does indeed mean "cedar." *Meru* may mean cypress or juniper. One school of thought proposes that the Egyptians did not make a distinction between cedar and juniper, and that *ash* refers to better-quality conifers and *meru* refers to some kind of second-quality timber. At any rate both *ash* and *meru*, whatever they may mean, are foreign (imported), usually sold in long lengths, and thus readily distinguished from the local acacia

or sycamore. This wood was put to refined uses: shipbuilding and making palace doors. Philologists may argue about the meaning of the words *ash* and *meru*, but archaeologists do have large quantities of identifiable cedar and some juniper in the Egyptian collections of the world's museums.

In dockyard accounts from the time of Thutmose III (c. 1450 BC), a fragmentary papyrus in the British Museum records the issuing of timbers to the workers. The parts of the ship for which the timbers were intended (which ought to help identify them) are also given; however, the meaning of all the maritime terms is not known. Four times as many *ash* timbers as *meru* timbers are required, suggesting that whatever *ash* really is, it is straight, pliable, and free of knots--and thus suitable for shipbuilding. The longest timber specified was of *ash*, 30 cubits long (13.72m), and intended for the mast. *Ash* is required for masts in other documents, and again the lengths are quite long; 40 cubits (18.29m) and 42 cubits (19.21 m).

No doubt the import and export of high-quality wood goes back even further than these Old and New Kingdom references. That international timber production and marketing were not occasional adventures is attested by the much later report of Wenamun. That the king of Byblos in Wenamun's tale could produce three hundred woodcutters upon demand, as well as sufficient animals and drivers to drag the timbers down to the port, suggests that both he and his woodsmen were accustomed to the practical requirements of the timber business and to fulfilling large foreign orders. A tour through any Egyptian gallery in a Western museum corroborates the texts, revealing a mixture of both local and imported wood on the more elegant of their sarcophagi, furniture likely to be cedar, and domestic objects likely to be riverine wood, such as sycamore, tamarisk, and acacia.

The earliest Mesopotamian reference to cedar is from Sargon of Akkad (c. twenty-third century BC), who claims that the god Dagan gave him the Upper Country (i.e., Mari), Iarmuti, and Ebla as far as the Cedar Forest and the Silver Mountain. One of his successors, Naram-Sin, has the god Nergal give him Arman and Ebla, and also the Amanus, the Cedar Mountain, and the Upper Sea.

In a military campaign into Syria and Cilicia Shalmaneser III (ninth century BC) demands as tribute from one prince one talent of silver, two talents of purple wool, and two hundred cedar logs. Another prince in the Amanus, somewhat poorer, must send metal, cattle, two hundred cedar logs, and two measures of cedar resin at once, and annually thereafter one hundred cedar logs and one measure of cedar resin. A third prince has to include three hundred cedar logs annually. Sargon II (late eighth century BC) not only uses the timber for taxes, but also places an embargo on sale of it to the Egyptians and other inhabitants of the Levant. Depictions on Assyrian royal reliefs confirm the textual account, with men hauling and floating large logs down from the mountains to Aššur.

Ashurnasirpal (883-859) has left the most detailed records of the logging activities of the Assyrian kings. His men cut four kinds of trees: *erenu*, *šurmenu*, and *dapranu* in the Lebanon and Amanus, and *burašū* in the Amanus only. The information regarding Assyrian names for wood is not much better than for Egyptian names. It is believed that *erenu* is *Cedrus libani*, although the arguments are complicated; *dapranu* is a kind of juniper, as is *burasu*, although the latter has also been identified as cypress; and *surmenu* is probably cypress (see essay by Postgate in Postgate and Powell, eds., 1992). It is known that the words refer to wood because they are preceded by a Sumerian logogram, GIŠ, meaning "wood." GIŠ.ERIN.MEŠ (=cedar) seems more certain than the others, however, particularly because of the Wadi Brisa inscription of Nebuchadrezzar: in it he claims to have built a road and a canal to carry "mighty cedars, high and strong, of precious beauty and of excellent dark quality (?), the abundant yield of the Lebanon, as [if they be] reed stalks [carried by] the river" (Wadi Brisa inscription of Nebuchadrezzar in Brown, 1969, p.199).

On the other hand, if it were not for the immediate proximity of Wadi Brisa to the cedar forest, the text could refer to *Juniperus excelsa*, which also has red or "dark" wood, as well as to cedar. The Assyrian inscription in Wadi Brisa is of additional interest because only 50m away, on the wall of the wadi, a

Roman inscription (one of about two hundred that encircle the remaining cedar forest but now about 1.5km downhill from the forest edge) from near the end of the reign of the Roman emperor Hadrian, (c. AD 134) delimits the forest boundary. Hadrian's procurators had marked this off as a very special forest, and the public was officially informed that four genera were not to be cut. Whether these are the same four genera mentioned in the Assyrian text only 50m away is not known. At any rate, the cedar forest boundary did not change significantly, at least in Wadi Brisa, for more than seven hundred years. The present deforestation is a post-Roman phenomenon. A scrap of evidence from the western edge of the Near Eastern world, and from a much later time, is that the cedar for the treasury doors at Eleusis (in central Greece) was supplied, at vast expense (seventy days' wages for a 2" x 4" x 12' board), by an *emporos*, an overseas trader and merchant from Knidos, in Caria.

Wood Use. Although evidence for constructional timbers of all classes is the most commonly found demonstration of the use of wood in antiquity, furniture is an obvious but less-common use. Fine furniture, indeed, is rare, except for the remarkably well- preserved inlaid wooden furniture at Gordion. Stone furniture, such as funeral beds, can be presumed to be copies of wooden furniture. Enough furniture inlay exists elsewhere--of ivory or bone or metal--at Aššur, for example, to show that elaborately carved and decorated furniture was more common than the archaeological record might otherwise suggest. Almost every Urartian site has produced elaborate metal furniture fittings--bronze animal feet and terminals, silver or gold medallions, plaques, and other attachments both practical or ornamental--and the lists of booty taken by the Assyrian kings include furniture of boxwood and ebony embellished with gold, silver, and ivory. Painted furniture representations on Greek pottery are another important indirect source of information.

Shipbuilding as an activity speaks for itself (see above). Every ship lost at sea, whether accidentally or in a naval engagement and then replaced, must have represented a drain on forest resources. Cedar timbers with up to four hundred annual rings from a twelfth-dynasty Egyptian ship, the so-called Dahshur boat now in the Carnegie Museum in Pittsburgh, Pennsylvania, one of five funerary vessels found near the pyramid of Senwosret III, and therefore presumed to belong to the time of Senwosret (c. 1860 BC) at Dahshur, are clearly cut from enormous trees--some centuries old and probably the size of standing trees found today in the Lebanon and the Taurus ranges. In what was an extremely wasteful woodcutting practice, the timbers were carved or sculpted to shape, not bent, as can be seen on a representation of boat builders at work on a relief in the tomb of Ti (fifth dynasty) at Saqqara, Egypt. At least half the wood was thereby lost.

Carpentry. Almost every tool--from the crude to the sophisticated--known to modern carpenters was used by the ancients: axes, adzes, hammers, mallets, wedges, chisels, drills, lathes, right- angles (or T-squares), plumb bobs, compasses, planes, rasps, and polishing agents of various kinds. Evidence exists for the use of almost every modern technique as well: mortising, tenoning, treenailing, beveling, gluing, and intricate joining and inlaying. A glance at the more elegant pieces of the Gordion furniture (eighth century BC) should remove any doubt about the skill and sophistication of the ancient carpenter, not only in the craftsmanship thereby demonstrated, but also in the selection of a half-dozen species of wood for their contrasting colors and textures and the assemblage of thousands of such fragments into an agreeable whole.

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