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REVIEW ARTICLE

Unusual date palm products: Prayer beads, walking sticks and fishing boats

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ABSTRACT

The date palm tree has hundreds of uses, many products supplying desert dwellers with resources not elsewhere available in nature. Insufficient information is known about the numerous minor ethnobotanical uses of the date palm. This study is concerned with unusual examples from the multiple reported uses of seeds, empty fruit stalks and leaf midribs, and their transformation into prayer beads, walking sticks and fishing boats, respectively. A better appreciation of the overall commercial and subsistence values of the date palm tree enhances justification for its further development in the broadest sense.

Keywords: Fruit stalk; Leaf midrib; Prayer beads; Seed; Shasha fishing boat; Walking stick

INTRODUCTION

The date palm has a celebrated number of uses ascribed to it, from its delicious fruits to the numerous marketable and subsistence products the palm tree itself provides. The Greek geographer Strabo (64/63 BC – c. 24 AD) repeats an ancient Persian proverb that the date palm has 360 different uses (Bircher, 1995). Standard date palm publications include brief accounts of the wide general utility of nonfood products from the date palm, especially for subsistence purposes, but often lack details, especially for the more minor products (Barreveld, 1993; Bircher, 1995; Milne, 1918; Munier, 1973; Popenoe, 1973). A recent study by El Hadrami and Al-Khayri (2012) represents an important step toward consideration of the date palm in terms of all its various products.

The three unusual, very diverse minor products covered in this paper are derived from the seeds, fruit stalks and leaf midribs, respectively. Very little specific information about these products has been published, most likely because they are of negligible economic value. But, nevertheless, they are good examples which demonstrate the broad historical and contemporary utility of this tree of life.

Date palm seeds: Prayer beads

Date palm seeds, also referred to as kernels, pips, pits or stones, are a byproduct of fruit processing or a residue of fruit consumption. Fresh seeds are used for date-palm breeding programs and sexual propagation of seedling dates, whole or ground seeds are fed to livestock, pressed to yield an edible oil, roasted and ground as a coffee adulterant and heated to prepare specialty charcoal for silversmithing (Barreveld, 1993).

Body adornments such as necklaces are commonplace in many world cultures, fashioned from materials such as seeds, bone, horn, animal teeth, wood, resin, shells, precious stones, and so on, typically with holes bored through the individual pieces so they can be arrayed on a string. Necklaces are also fashioned from metal links chained together, as well as from short-lived botanical necklaces of flowers (leis), leaves, fruits and nuts.

The association of necklaces with ancient and current religions in certain societies led to their adoption to mark the repetition of prayers, a practice found today in the Bahai, Buddhist, Christian, Hindu, Islam and Sikh belief systems; this type of necklace application resulted in their being referred to as prayer beads. Interestingly, the word bead derives from Old English, meaning a prayer.

Popenoe (1973) remarks that among the uses of date seeds was the occasional practice of stringing them together to make a necklace. During the time of Mohammed, it is said that loose date seeds were used to count prayers. Since it

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was founded, Islam has had a close symbolic relationships with the date palm (*nakhlah* in Arabic), which is mentioned numerous times in the Quran. The Islamic practice of stringing date seed beads into a necklace may have been adopted from Buddhism, suggesting a South Asian origin (Anon, 2015). In Arabic, prayer beads are called *subha*, *tesbih* or *misbaha*. Islamic prayer beads shaped and drilled from date seeds, made in Pakistan and Thailand, were purchased on the Internet and are shown in Fig. 1.

A traditional Islamic prayer bead strand has 99 beads, with marker beads separating them into 3 sets of 33, as each of 3 prayers is repeated 33 times. The bead sets purchased from Pakistan and Thailand are strung with 100 beads; 33, 34 and 33, separated by marker beads. Some Islamic sects say the first prayer 34 times, the other two 33 times, accordingly the prayer beads number 100 (Tönük, 2011). As part of a date palm ethnobotany study in Baluchistan, Pakistan, Sadeghi and Kuthestani (2014) reported the making of date seed prayer beads. In India, Buddhist prayer beads, *mala* in Hindi, meaning *garland*, are made of date palm seeds; they consist of 108 beads and are for sale on the Internet.

Date fruit stalks: Walking sticks

Among the oldest and most ubiquitous of material cultural practices in the world is the cutting and shaping of a piece of woody into a walking stick, or cane. A walking stick provides stability to the user over rough terrain, can be used to explore the path ahead and can serve as a defense weapon against dangerous animals or hostile individuals. One of the most common types of walking sticks is derived from the stems of rattan palms; in fact, rattans are often referred to as canes. In addition to wood, walking sticks can be made of bone, ivory, metal or a mixture of materials, some with elaborate designs on the head and stalk. In 19th-Century Europe a walking stick was a part of male fashion; they have become popular collectors' item.

Fig 1. Islamic date palm seed prayer beads from Pakistan (left) and Thailand (right). Photo: J. MacKnight

In general, date palm walking sticks are uncommon, most often being made from leaf midribs, stripped of leaves, or petioles with the spines removed. Dodd (1858) and Macleod (1871) documented their 19th Century use. More recently, Bircher (1995), in an exhaustive study of dates in Egypt, mentions canes made from date leaf midribs. Sukumar (2012) notes that in India light-weight walking sticks are made from date palm leaf petioles.

The date fruit stalk (rachis) is solid, fibrous, pliable, and strong and measures more than 1 m in length and is curved from the weight of the branched strands (spikelets) of fruits which altogether can weigh more than 90 kg. Commonly, date harvest involves cutting of the entire fruit bunch from the palm and lowering it to the ground where then or later the fruits are detached. The remaining empty fruit stalk is said by Popenoe (1973) to be one of the least valued products of the date palm, being a source of an inferior fiber and serving as cooking fuel. Barreveld (1993) states that the long, strong fibers extracted from the fruit stalk are preferred in the making of date palm climbing belts. Empty fruit stalks are recorded as being used in India as brooms (Arna-Jharma Museum, 2015). Very little information about walking sticks fashioned from date fruit stalks could be found in standard reference books on the subject. An Internet site (www.canesegas.com/materials/4.date.palm.cane.html), accessed 15 July 2015, provides illustrations of date fruit stalk canes, which are called date palm clusters.

To make a date fruit stalk walking stick, the empty strands are removed, leaving the fruit stalk speckled with numerous knobby strand stumps which give to the cane its distinctive appearance. (It somewhat resembles a briar wood walking stick which also has the branch stumps left on the stick.) The curved cane is soaked in water or steamed and straightened with weights or in a form. The light-weight walking sticks may be straight, with a knob of a different material affixed to its top to provide a hand grip, or more commonly the thicker upper portion is bent to form a crook-style handle. Figs. 2 and 3 illustrate two crook-handled walking sticks, purchased on the Internet from sellers in the United States; their provenance is unknown. Neither stick has evidence of a metal ferrule to protect the tip, standard on wooden sticks in use, suggested they were made as collectors' items. Among the great variety of wooden walking sticks known, date fruit stalk canes are indeed an interesting novelty.

Date palm leaf midribs: Fishing boats

Date palm leaf midribs represent an important subproduct with several subsistence uses. Stripped of leaves they can be

Fig 2. Date palm fruit stalk walking sticks. The stick on the left is 96.5 cm long, weights 269.3 g and has been varnished; that on the right, is 94 cm long and weights 198.5 g, is unfinished. Photo: J. MacKnight

Fig 3. Close-up of the crook-handles and strand stumps of the walking sticks in Figure 2. Photo J. MacKnight

fastened together for fencing, split and made into animal cages, packing crates, boxes, furniture and also employed as building materials (Barreveld, 1993). The use of midribs to construct fishing boats, however, is rare and only reported from coastal areas of the Persian Gulf and the Gulf of Oman, in Oman and Fujairah, UAE and across the Straits of Hormuz in Iran.

Fishing boats made from date palm leaf midribs are similar in form and function to what are collectively called reed boats, which are, along with dugouts, among the world's oldest type of fishing vessels. Archaeologists working in the Arabian Gulf in Kuwait have found fragments of exterior bituminous caulking bearing the impression of a reed boat, which has been dated to the Ubaid Period, 5300-4700 BCE. This represents the oldest known evidence of sea-going reed boats in the world (Carter, 2008).

A date leaf boat may be unique in terms of the raw material used for its construction, but there are similar ancient and contemporary reed boats in a few locations in the Americas and Africa, clear evidence of parallel invention rather than technology transfer. In the USA, the native peoples in present-day Central California formerly made fishing boats by binding together tule reeds (*Schoenoplextus acutus*), for fishing and transport in inland lakes and on bays. In South America, native people living on the shores of Lake Titicaca (elevation of 3,800 m) have traditionally made boats using tortora reeds (*S. tatora*), a practice which still exists. Boats made of papyrus reeds (*Cyperus papyrus*) are currently in use for fishing on Lake Tana, Ethiopia; the same watercraft are known from ancient Egypt in the Lower Nile Valley.

Reed and date leaf boats share several common characteristics. They originate in areas where there is little or no source of wood suitable for boat building; the long stick-like, lightweight and extremely buoyant materials used can be bundled and fastened together; they are not typically waterproofed; they are propelled by paddles, oars or sails; and they have a rather short useful life because the materials become weakened from waterlogging.

Published accounts of date leaf boats are few in number. In Arabic the boat is called a *shasha*. Brief references to date leaf boats can be found in Popenoe (1973) and Dowson and Aten (1962); Bircher (1995) states that (date) palm sticks (midribs) have been used for boatbuilding in the Persian Gulf for centuries. Fairchild (1902) wrote a brief illustrated article about the date leaf boats he observed in Jask, Iran. The reenactment voyager Tim Severin (1983) took note of the shasha, which he described as an Arabian bundle boat; the shasha boat is also mentioned by Potts (2002) as one of the many date palm uses.

The following description of building a traditional shasha is based primarily on articles by Ziolkowski (2000) and Zacharias (2010); both articles report information provided by the same shasha builder in Fujairah, who is of the few individuals still constructing the craft. To assemble a shasha, about 150 freshly-cut date fronds are defoliated, the midribs (*barusti*) soaked for a week in sea water, then dried overnight. The midribs are then pliable. To form the base of the boat, groups of midribs are laid side by side and securely tied together using date palm fiber rope (Fig. 4), and then bound to a wooden frame of cross beams at the base and corresponding side beams. The midribs are bound together at each end to form the bow and stern. The base of the boat is lined with pieces of date leaf petiole bases, which are equally buoyant and often used as by themselves as fishing net floats. A layer of midribs is laid over the petiole bases to form a deck. If the shasha is

Fig 4. Fujairah, UAE. Assembling date leaf midribs for the base of a shasha. Source: Pound 2009.

to be rowed, the oarlocks are built into the side frame; no adaptation is needed for paddling. It is also possible to rig the boat with a sale.

Some 90% of the raw materials of a shasha are from the date palm; the wood for the frame, paddles or oars, is sourced from Zizphus or Acacia trees growing in the inland mountains. A small, one-man shasha, about 2 m long (Fig. 5), can be built in about a day if the raw materials are all assembled in advance. Larger vessels (Fig. 6) are constructed and can carry up to four people along with fishing nets. Davies (1988) states that because the vessels become waterlogged, some fishermen own two boats, fishing from one while the other one is drying out on the beach. Modern adaptations in shasha construction include the use of nylon rope rather than date rope, drilling holes in the midribs for better tying, Styrofoam rather than petiole bases for added buoyancy and even fitting the shasha with an outboard motor.

According to Zacharias (2010) the use of the shasha for fishing has almost disappeared. However, a Fujairah boat club sponsors annual shasha races which serve to maintain the knowledge of construction of the boats and provides a glimpse into the past fishing traditions.

CONCLUSION

A comprehensive cross-cultural ethnobotanical study of the date palm and its many historic and contemporary uses remains to be written. It is hoped that this contribution will stimulate a closer examination of other poorly-known date palm products to arrive at an eventual full understanding of this remarkable palm and its value, not only as a world fruit crop, but for the utility of the tree itself to those who dwell in desert lands.

Fig 5. Small one-man shasha date leaf fishing boat at sea off the Batinah Coast, Gulf of Oman, Oman; photo dates to the early 1980s. Note the traditional rope binding together groups of midribs. Source: http://indigenousboats.blogspot.com/2012/04/shasha-arabian-bundle-boat.html

Fig 6. A Larger shasha date leaf fishing boat, Batinah Coast, Gulf of Oman. Note that nylon rope is used in the construction. Undated photo. Used with permission of OMAN-FOTOALBUM

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