

A New Incised Scapula from Tel Kinrot

Scapulae (shoulder blades) incised with lines have been discovered in Bronze and Iron Age settlements throughout the eastern Mediterranean and the Near East. Some researchers argue that these scapulae were used for divination; others think they functioned as percussion instruments. We recently discovered a highly unusual incised fragment of a scapula from a deer-sized animal in the Iron Age layers at Tel Kinrot, a site some 11 kilometers north of the modern city of Tiberias, Israel. We interpret this artifact as a bridge for a stringed instrument, possibly a lute.

The Kinrot Kinrot scapula is quite different from other incised scapulae, and we hesitate before offering a simple interpretation of the artifact's role. The scapula fragment is 7.9 cm long and probably belonged to a fallow deer (*Dama mesopotamica*),

The incised scapula from Tel Kinrot and its measurements.

surprising since cattle (*Bos taurus*) were more common at ancient sites (Reese 2002: 184). The bone has been polished and bears seven deep incisions. Many of the excavated cattle scapulae have more than nine incisions often spread over an area of more than 20 cm in length (Webb 1985: 317), almost three times the length of the Kinrot fragment. The incisions on the Kinrot scapula are along the medial part along the bone's posterior border, the area that would have been closest to the animal's spine and facing his hind quarters. They are parallel and 2 cm apart; the spacing varies by only 0.07 cm. The incisions gradually increase in width, with the widest are on the distal part of the fragment, where the bone is thickest. The ends of the bone bear two more incisions along which it has been broken, by chance or design.

Although discovered during post-excavation cleaning, the incised scapula's context is Locus 5268 in Area K—a domestic area on the lower part of the southeastern slope of the hill (for a short description of the area, see Fritz and Münger 2002: 12–16) . Locus 5268 is dated to the beginning of the first millennium BCE and belongs to the main phase of the early Iron Age IB horizon at Tel Kinrot. During this period, Tel Kinrot —identified with



Bone Thickness	13.5	13	13	12.5	12	11	10.5
Incision Width	3.5	2	3	2.5	2	2	0.5



Tel Kinrot (Tell el-'Oreimeh) from the Mount of Beatitudes (photo: M. Alanne, © Kinneret Regional Project).

ancient Kinneret attested in Biblical and Egyptian sources—was a large, fortified and well-planned city that dominated the region [Fig. 2]. Volkmar Fritz first excavated the site between 1982–2001 and since 2002 the Kinneret Regional Project, a joint German-Finish-Swiss expedition directed by Stefan Münger, Juha Pakkala and Jürgen Zangenberg, has explored the site and its environs (Pakkala, Münger, and Zangenberg 2004).

The scapula fragment was found in what was probably a secondary deposit that was part of a floor accumulation in a large courtyard between domestic units, making the interpretation of its context problematic. The deposit

also contained a mixture of other artifacts, including a small, roughly worked votive bowl, (the only intact vessel found in this courtyard) and numerous bone fragments in the same deposit. Such votive bowls are commonly found in cultic contexts at, for example, the Iron Age site of Tell Qasile north of modern Tel Aviv (Mazar 1980: 117–118, 1985:38). The twenty-five bone fragments and teeth retrieved from this locus came from cattle, sheep, goats, and a young dog. This faunal evidence was not found associated with other skeletal elements nor do they bear any signs of modification, such as cut-marks or burning (Bar-Oz and Raban-Gerstel, personal communication, 2006).

Incised scapula (usually from cattle) were quite common in Bronze and Iron Age societies throughout the Mediterranean world, and archaeologists have recovered specimens from sanctuaries at such sites as Kition, Enkomi, Polis, and Athienou in Cyprus and Tel Mique and Tel Dor in Israel (e.g. Webb 1985; Karageorghis 1990; Gitin and Dothan 1987, 204; Stern 1994; see Reese 2002 for references to other sites). Their presence in cultic contexts suggest to some scholars that these items had been used in scapulomancy, a divinatory practice which refers to natural features of an animal's shoulder-blade (Webb 1985: 325–327, Gitin and Dothan 1987:204). Others favor the view that these incised bones served as bone scrapers, or rasps, played by dragging a pick along the incised surface to produce a rhythmic sound during religious rituals (Braun 2001: 94, Karageorghis 1990). The use of incised bones as bone scrapers or rasps is supported by interesting ethnographic parallels, such as the Malinke tribe of Guinea (Rault 2000: 38–39) and the Cheyenne of North America (Blades 1975: 40–42).

Considering that the scapula of the fallow deer found at Kinrot is not as long as a cow's and would not allow enough trajectory for a pick to move along, we wish to suggest an alternative interpretation of this object as a bridge, or a mobile nut, of a stringed instrument with a finger-board. The nut and the bridge hold the strings in place along the endpoints of the strings. The main purpose of the bridge is to amplify sound by transferring the vibrations from the strings to the soundboard. Among the various stringed instruments found in the Near East during the Bronze and Iron Age periods, the only stringed instrument to have a nut and a finger-board is the lute. Lutes were made almost entirely of wood except for the nut and bridge that were often fashioned from bone or ivory.

A bone piece serving as a nut or a bridge of a stringed instrument with a fingerboard, such as a lute, would exhibit several attributes linked to its function. First, the incisions should be almost completely parallel, so that the vibrating strings would not touch each other along the instrument's neck. Second, the distances between the incisions

should be patterned, as they are in modern stringed instruments. Third, the lowest tuned string should be on the thickest part of the incised region of a bone serving as a bridge. The latter expectation stems from the fact that the string producing the lowest tone resonates across the widest trajectory, and thus is liable to hit the finger-board when plucked, producing an unpleasant sound. Running a string through the incision on the thickest part of the bridge, and therefore furthest from the finger-board, is a common way of circumventing this problem. The width of the incisions is not uniform, a fact which may be attributed to differential wear of the bone caused by the strings' resonation amplitude, that is, the tone they produce. Indeed, the widest incision, caused by the lowest-tuned string, is positioned on the thickest part of the scapula fragment.

The lute's origin lies in Mesopotamia with the earliest evidence dating to the late third millennium BCE (Collon and Kilmer 1980: 13). The lute first appeared in the Southern Levant during the sixteenth century BCE and became increasingly popular during the Late Bronze Age. Visual representations of lutes are known only from coarse bas-reliefs and terracotta figurines and constructive details are difficult to discern, although there does seem to be considerable variability in the instruments' shape and the number of strings and frets (Collon and Kilmer 1980: 17). Figurines showing stringed instruments very similar to the lute are evident in Bronze Age sites such as the nearby site of Tel Dan (Biran 1986, 2003) and from Beth-Shean and Tel el-'Ajjul (Braun 2001: 80–85). Additionally, epigraphic evidence from Ugarit mentions several types of stringed instruments that served in both religious and courtly entertainment, including the 'ud, likely a lute (Caubet 1996:13, Braun 2001:85). The lute eventually migrated from the Levant to Egypt, where four well-preserved examples, all possessing two or three strings and bridges made of wood, survived in funerary contexts dating to the sixteenth century BCE (e.g. at Deir el-Medina, Sheikh Abd el-Qurnah) (Eichmann 2000:36). Compared to the proposed reconstruction of the Kinrot lute, these Egyptian examples would have been smaller in size.

While we think it is unlikely that the Kinrot scapula was used for scapulamancy or as a bone-rasper, we lack the exact construction details of contemporary Levantine lutes needed to seal our case. Nevertheless, we think the use of the scapula as a bridge in a lute is the most likely explanation.

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