

Dalma archaeological site yields Arabia's oldest date stones

The results of radiocarbon dating of two date *Phoenix dactylifera* stones found by the Abu Dhabi Islands Archaeological Survey, ADIAS, on Dalma has shown that they are the oldest ever found in Arabia. The results suggested that one date stone can be dated to 4670 (+/-130) BC, and the other to 5110 (+/-160) BC, that is about 6,500 - 7,000 years ago.

The dating was carried out at the University of Arizona working in collaboration with the Scottish Universities Research and Reactor Centre radiocarbon laboratory at the University of Glasgow, in Scotland.

Both date stones, together with impressions of date stones on fragments of mudbrick, were recovered during excavations on a site in the compound of the Abu Dhabi Women's Association branch on Dalma, where ADIAS has been working for several years. They were identified during the course of work organised in early 1998 with the support of Minister of Information and Culture Sheikh Abdulla bin Zayed Al Nahyan.

The two Dalma date stones represent the oldest radiometrically dated evidence yet available for the consumption of dates within the Gulf region, as well as probably some of the earliest evidence of the date palm found anywhere in the whole of the Middle East. Previously, the earliest evidence for date palm remains in the UAE was excavated from the Hill 8 site in Al Ain, dated to around 3,000 BC. The Dalma date stones are at least 1,500 years, and perhaps over 2,000 years older.

The two date stones also represent some of the earliest remains of date consumption found within the entire Middle East. Although it cannot be determined if they represent wild or cultivated dates, they certainly confirm that dates were being consumed at this early time.

Other finds from the Dalma site include at least two round house-like structures with surviving post-holes and floors, one of which is at least 7 metres in diameter. There are also small quantities of imported painted pottery from the 'Ubaid culture of southern Mesopotamia. Since Dalma was already almost certainly an island at the time, the 'Ubaid pottery must have made at least part of its journey by sea, offering us the first confirmed evidence of the maritime trading connections of the people of the Emirates.

Large quantities of what appear to be locally made gypsum plaster vessels of a type not known anywhere else in the Middle East have also been found. During an inspection visit to the Dalma site at the end of March, a large portion of one of these vessels was found which is the most complete vessel of this period ever identified in the Emirates.

The Dalma site has also yielded thousands of Late Stone Age flint flakes and a number of stone tools; other finds included ornamental beads, and huge quantities of food debris in the form of marine shells and animal and fish bones.

Mark Beech

A new species of trigger fish recorded for the Arabian Gulf

Teleostei, Tetraodontiformes, Balistidae, *Canthidermis maculatus* (Bloch, 1786) – the Spotted Oceanic Triggerfish

This note describes an unusual triggerfish purchased by the author in Ras Al Khaimah fish souq on 12 April 1998 which has been identified as the **Spotted Oceanic Triggerfish** *Canthidermis maculatus*. The record is the first for the Arabian Gulf. The fish had 3 dorsal hard spines and 23 soft dorsal rays, as well as 21 soft anal rays. Measurements were taken as follows:

Total length (TL): measured from the tip of the snout to the end of the upper lobe of the caudal fin = 33.5 cm.

Standard length (SL): measured from the tip of the snout to the end of the axial skeleton (determined by bending the tail upwards) = 28 cm.

Head length (HL): from the tip of the snout to the posterior edge of the gill cover (operculum) = 9 cm.

Body depth (BD): the deepest point from the origin of the dorsal fin vertically downwards to the pelvic fin = 11 cm.

The fresh capture weight of the fish was 735 g. Its colour was dark purplish to black with white patches on the lower ventral sides of its body. The caudal fin was slightly rounded with small notches present in moderately pronounced lobes.

Three triggerfish species commonly occur in the Arabian Gulf according to the most recently published surveys (Carpenter *et al.*, 1997; Randall, 1995). These are:

- the **starry triggerfish** *Abalistes stellatus* (Lacepède, 1798),
- the **picasso triggerfish** *Rhinecanthus assasi* (Forsskal, 1775),
- the **flagtail triggerfish** *Sufflamen chrysopterus* (Bloch and Schneider, 1801).

The specimen from Ras Al Khaimah does not however match with any of these. Its distinctive colour as well as spine/ray counts and body/fin shapes preclude it from belonging to any of these previously recorded species. Outside the Gulf, in adjacent Omani waters, a number of other triggerfishes are known to also occur (Randall, 1995). These include:

- the **largescale triggerfish** *Canthidermis macrolepis* (Boulenger, 1887),
- the **Indian Ocean durgon** *Melichthys indicus* (Randall and Klauswitz, 1973),
- the **redtooth triggerfish** *Odonus niger* (Rüppell, 1836),
- the **bridled triggerfish** *Sufflamen fraenatus* (Latreille, 1804).

These latter three species have quite separate distinct colour and body/fin shapes. The Ras Al Khaimah triggerfish looks closest to the **largescale triggerfish** *Canthidermis macrolepis*, although there are a number