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Preservation of organic matter in the lacustrine/deltaic sediments of southern Mesopotamia

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Organic-geochemical studies of the Holocene sediments at the surface and in shallow boreholes in the Tigris-Euphrates Delta of SE Iraq are integrated in this paper with sedimentological and stratigraphic studies. Limited organic preservation was found to have occurred in surface sediments from marshland areas ("Ahwar"), although organic-rich sediments (peats) were observed within older Holocene borehole sequences.

Reeds of *Phragmites* and *Typha* sp. are the main source of organic material in both the surface and the underlying sediments in this area. Petrographic studies indicated that this material consists mainly of "immature" components such as woody structures, algal amorphous and herbaceous matters, with some marine structures and pollen.

The principal factor controlling organic-matter preservation in this arid deltaic setting seems to have been the comparatively high rates of sedimentation, particularly in early-middle Holocene. Most of these organic-rich sediments (5–15% TOC) are overlain by middle Holocene brackish/marine sediments of the transgressive Hammar Formation. The organic-rich sediments are usually older than these transgressive sediments (i.e. 6,000–9,000 years BP, according to their location within the study area).
