

Chronology of the Early Pre-pottery Neolithic settlement Tell Qaramel, Northern Syria, in the light of radiocarbon dating

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A project led since 1999 by the Syrian - Polish Archaeological Mission, co-directed by Prof. dr. hab. Ryszard F. Mazurowski and Dr. Yousef Kanjou, has performed an intensive archaeological excavation of a large (ca. 3.5 ha) settlement that had been occupied during Protoneolithic and Early Pre-pottery Neolithic periods. The settlement existed between 10,700 and 9,400 BP. It should be noted that more recent deeper excavations have revealed even older layers that appear to belong to the final Upper Paleolithic or Early Epipaleolithic.

The project is a joint undertaking of the Polish Centre of Mediterranean Archaeology, Warsaw University and Direction General for Antiquities and Museums of Syria. Field works and laboratory analyses also have a substantial support from Her Excellency Rector of the Warsaw University and the Institute of Archaeology, Warsaw University.

Tell Qaramel, is located in the basin of the River Qoueiq, about 25 kilometers North of Aleppo and 65 kilometers south of the Syrian-Turkish border and Taurus Mountains. The north-eastern part the prehistoric settlement, adjacent to the western bank of the river, is covered by ovoid (190 x 160m) tell built by remnants of occupation from Protoneolithic, Early Aceramic Neolithic (PPNA) to Ottoman period. This settlement appears to have been very well situated from the economic point of view as the Qoueiq River Valley contains soils of the highest quality for agricultural purposes, the so-called "red soils". The site also must have had considerable exposure to commercial activity which still exists as indicated by the presence along the river of the "Silver Road" connecting Near East and Egypt with Anatolia, Central Asia and Far East and the legendary railway line of the "Orient Express" known from crime stories written by Agatha Christie and others.



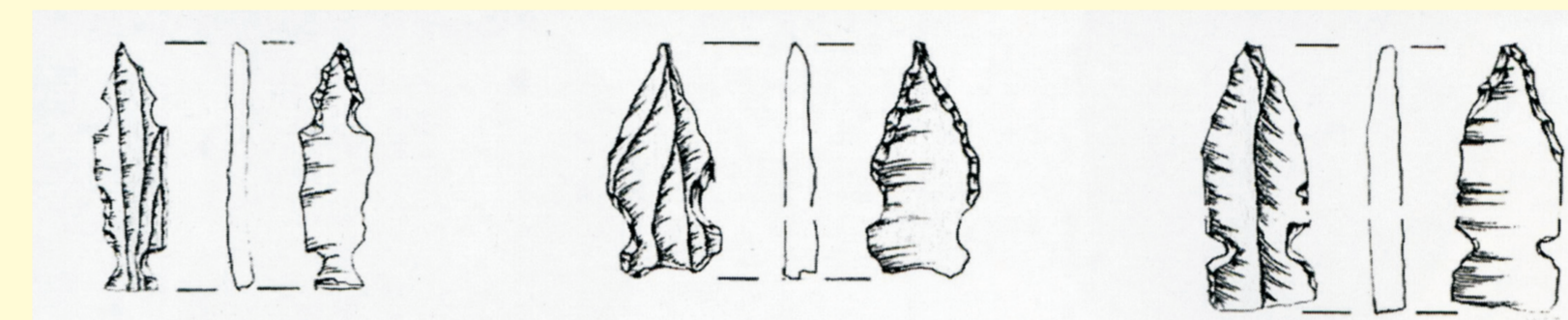
Tell Qaramel during excavation of the spring season in 2001, south slope (Photo R.F. Mazurowski, after "Archeologia Żywa" no 17 (2/2001)).



The Fertile Crescent is a historical crescent-shape region in the Middle East, which has an impressive record of past human activity. As well as possessing many sites with the skeletal and cultural remains of both pre-modern and early modern humans. This area is most famous for its sites related to the origins of agriculture. (Source of the map: http://en.wikipedia.org/wiki/Image:Fertile_Crescent_map.png)



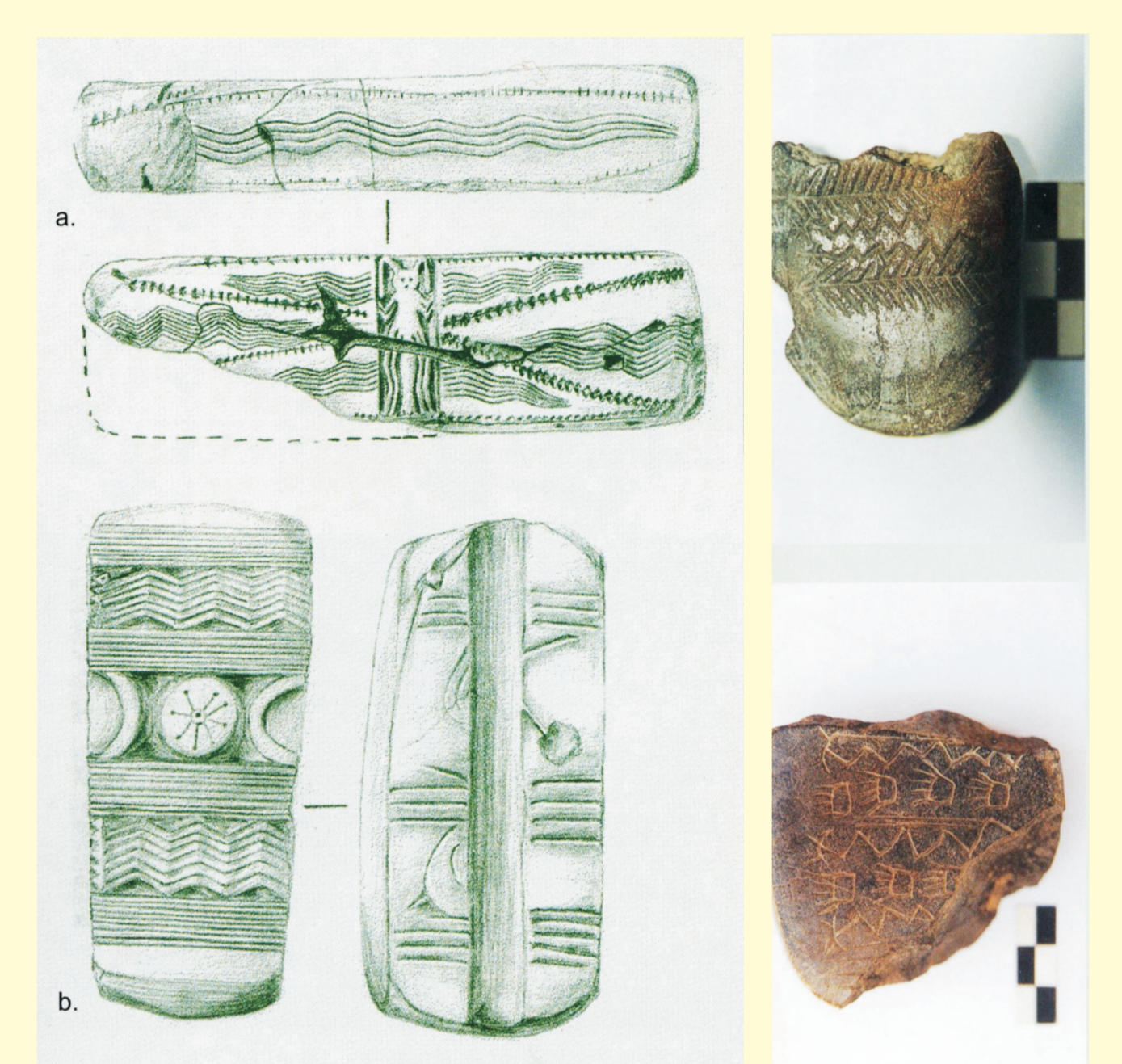
Remains of the settlement of the early stage of Pre-Ceramic Neolithic "A": remains of the defensive tower of the beginning of the 8th millennium BC (left) and parts of two circular houses built after the destruction of the "older" tower. (Photo R.F. Mazurowski, after "Archeologia Żywa" no 17 (2/2001)).



Flint arrow points from Pre-Ceramic Neolithic "A" layers (after "Archeologia Żywa" no 17 (2/2001))



Stone cist of the early Bronze Age (about 2500BC) discovered in the western part of Tell Qaramel, twice robbed in Antiquity (Photo R.F. Mazurowski, after "Archeologia Żywa" no 17 (2/2001)).



Fragments of decorated sharpening stones (Pe-Ceramic Neolithic "A") (Photo R.F. Mazurowski, after "Archeologia Żywa" no 17 (2/2001)).

Until now, five oldest in the World rounded towers were discovered, two spectacular shrines (one also was a kind of common house for meetings), more than sixty (60) circular and oval houses along with accompanying utility buildings divided for five chronological horizons (H0-H4). In the courtyards, in addition to the houses we found hearths, storage and waste pits, and hiding places as well as numerous pit graves with deceased lying in the embryonic position. The houses were partly dug into the ground or most often were built directly on the ground, with walls from irregular blocks or pecline mud mixed with fine stone pebbles, bones and all sorts of other materials present in the surrounding.

Preliminary chronology of the settlement Tell Qaramel was established on the base of 57 radiocarbon dates of charcoal samples. Results of the radiocarbon dating show incessant occupation and evolution of the settlement from the early stages of the pre-ceramic Neolithic period, and covers a period of about 10,900 - 8,800 BC (see Fig. 1).

On the basis of archaeological investigations all samples were assigned to five horizons H0 - H4. Fig. 2 presents distribution of all calendar dates divided into various horizons.

Aberrational dates (resulting from using older material from the surrounding to construction of the new objects or bioturbation caused by mole activity) and also dates with big laboratory uncertainties were excluded to establish duration of the individual horizons (Fig. 3). 95.4% confidence intervals obtained for summed probability distribution provide information about boundaries of each horizon (Table 1 and Fig. 4).

The excavated Protoneolithic and Early Pre-pottery Neolithic settlement at Qaramel had developed during an early stage in the formation of new cultural and economical models of civilization. The growing specialization in the gathering of wild fruits and cereals must have contributed to domestications of fruit, wheat, and barley just as the parallel specialization in hunting must have led to domestication of sheep and goats, and later also of cattle and pigs. Consequently, during later millennia, as these

developments expanded into Europe and many regions of Middle East and Asia, they shaped the entire model of culture typical for the Old World.

Despite the visible evolution of the construction techniques, in the final stage of horizon H3 the first rectangular houses also began to be built. From layers and fills of houses also a very rich and famous collection of tools, ornaments and objects of art has obtained. Among them all together 325 (!) complete or fragments of stone tools, human and animal figurines have been decorated. They depict dancing humans and snakes, gazelles, tortoises, porcupines, fish and even plant motifs. Though Tell Qaramel is about 180 km away from the Mediterranean, we even found depictions of an octopus (which is in part a woman), sea shells and turtles. This proves that they were aware of the existence of the sea, they must have had contact with other human groups and even venture into those distant areas at times.

Fig. 1. Results of calibration of 57 dates from Tell Qaramel settlement.

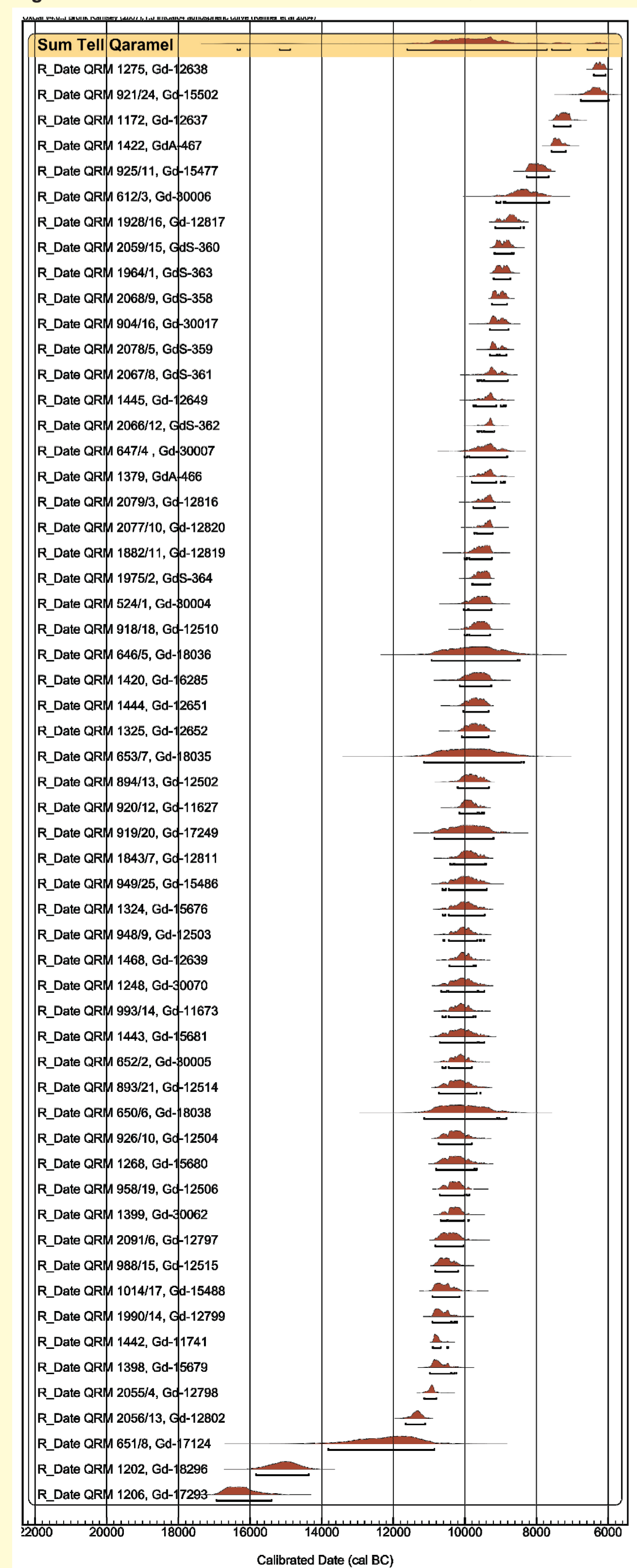


Fig. 2. Results of calibration, samples divided into horizons H0-H4.

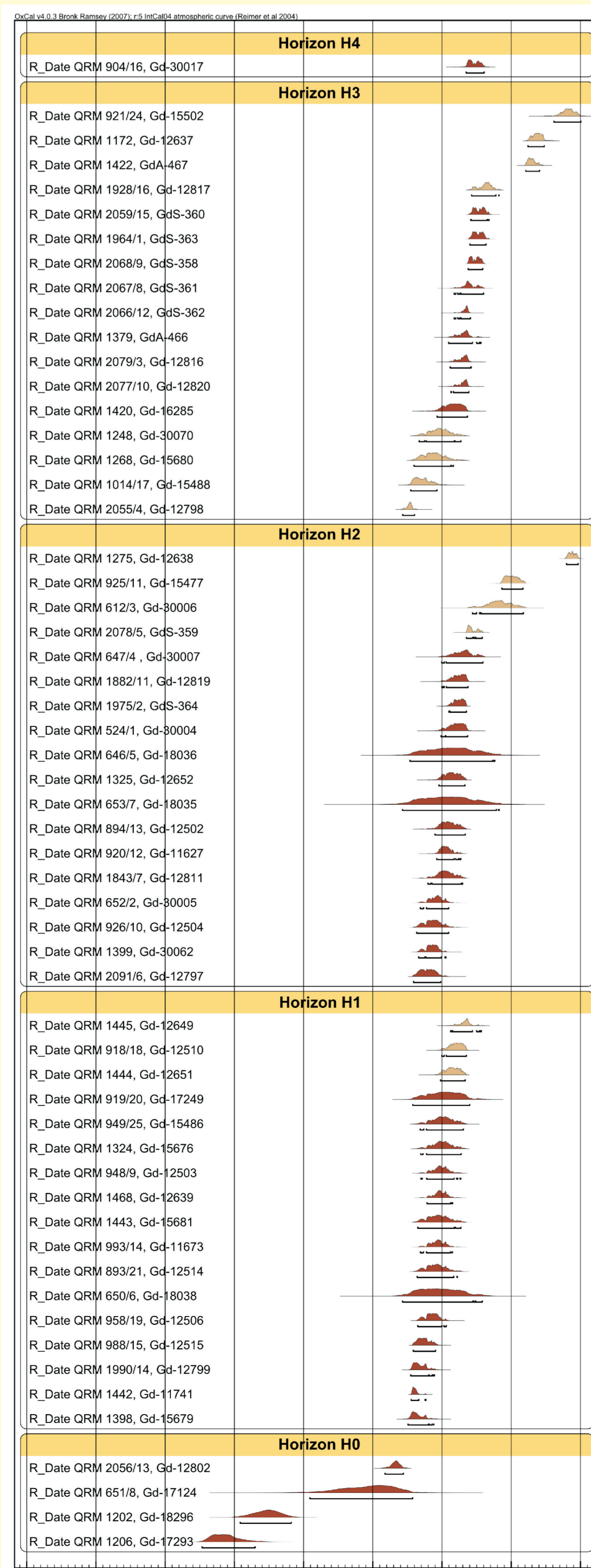


Fig. 3. Same as Fig. 2, without aberrational dates and dates with large laboratory uncertainties; including summed probability distribution for each horizon.

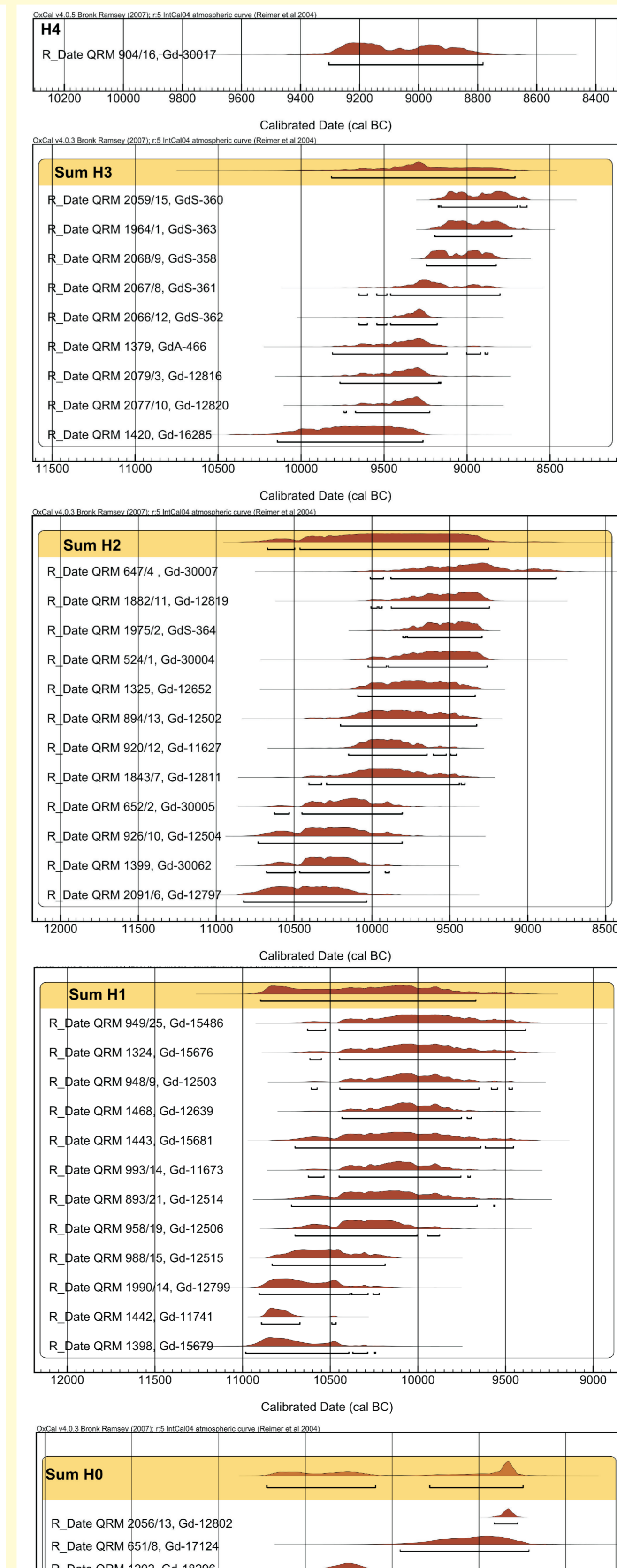


Fig. 4. Time span of horizons H0-H4.

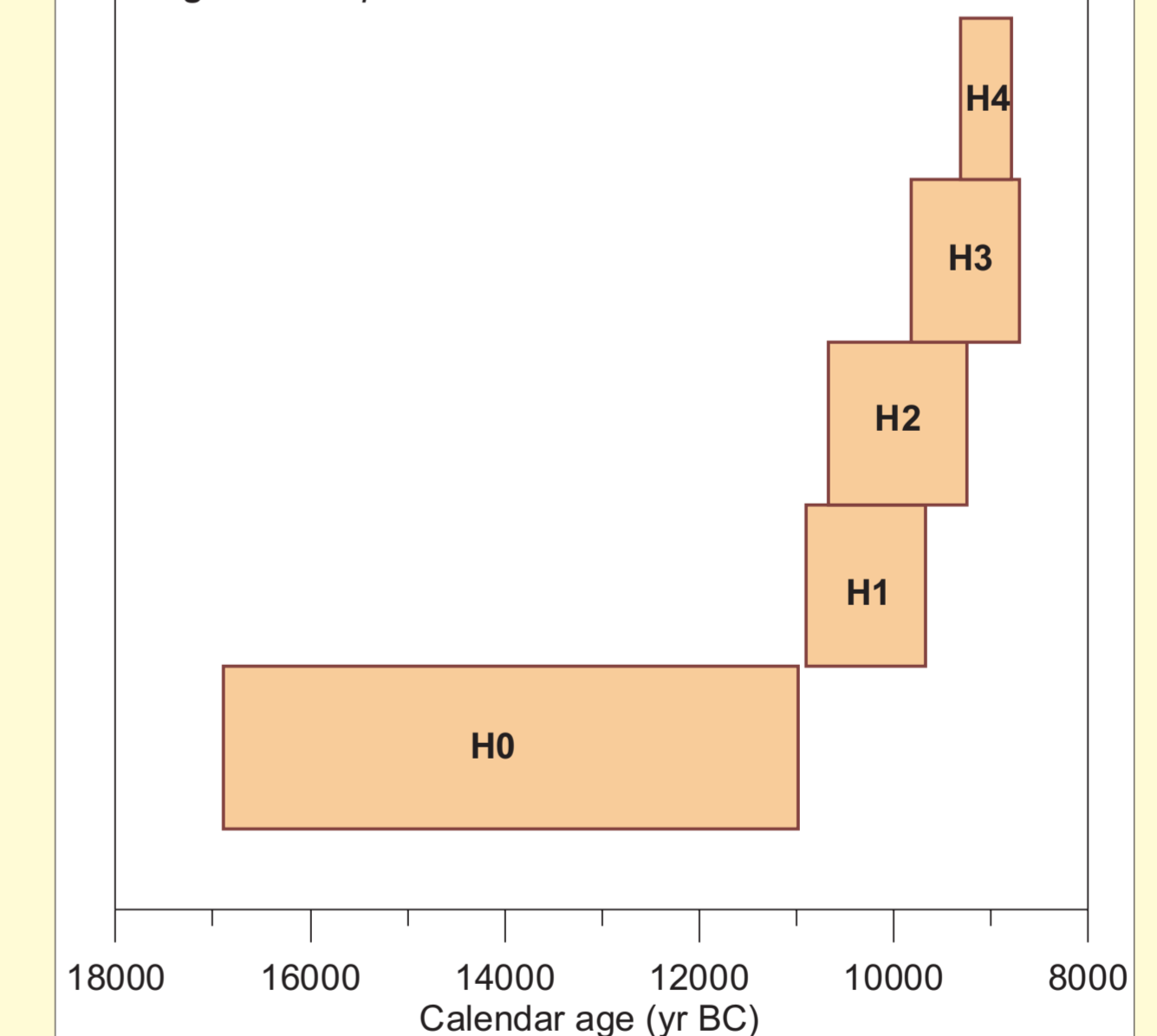


Table 1. Time span of horizons H0-H4.

Horizon	Beginning BC	End BC
H0	16890	10980
H1	10890	9670
H2	10670	9250
H3	9820	8710
H4	9305	8780

Discoveries at Qaramel are very important for scientific research in the area because they show a permanent evolution of transformation to traditional Neolithic culture by a long process that extended over more than a thousand years. Moreover, Qaramel is located in a new, completely unknown region (center) of so-called "primary neolithization". We named its culture "Qaramelian". Its urbanistics, architecture, economy and material culture represent many differences in comparison to sites known from Middle Euphrates, Anatolia, Southern Levant, Northern Mesopotamia and Chrusatan. This exposure to the North, and to an earlier unknown cultural tradition of Pre-pottery Neolithic in Levant, existed alongside such traditions as Sultanien in the South and Mureybetien in the region of Middle Euphrates.