Schachner, Andreas (Hg.): Innovation versus Beharrung. Was macht den Unterschied des Hethitischen Reichs im Anatolien des 2. Jahrtausends v. Chr.? Internationaler Workshop zu Ehren von Jürgen Seeher Istanbul, 23.–24. Mai 2014. Istanbul: Zero Prod. Ltd. 2017. XX, 280 S. m. Abb. 4° = BYZAS 23. Brosch. € 50,00. ISBN 978-605-9680-39-4.

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Published in this volume are sixteen essays – eleven in English, five in German – delivered in lecture form at a scholarly gathering to mark the occasion of the retirement of Jürgen Seeher from his long service in the Deutsches Archäologisches Institut Istanbul. Since his most significant work during his career there was as the director of the excavations at Boğazköy-Hattuša, most of these contributions center upon the Hittite capital, in particular upon the question of the relationship between cultural innovation and tradition, as evidenced by material recovered at that site.

Following an introduction to the conference by Andreas Schachner, Ulf-Dietrich Schoop's essay ("Technologie und Innovation im anatolischen Chalkolithikum") considers the meeting's central theme in regard to an earlier era. Examining the technologies for metallurgy, weaving, and the processing of dairy products in the Chalcolithic, he observes that the archaeologist errs when he or she attributes the importance that technical innovations achieve in later societies already to the period in which

they were initially invented – perhaps originally for a completely different function from that which they later played (p. 13).

İ. Gerçek ("Approaches to Hittite Imperialism: A View from the 'Old Kingdom' and 'Early Empire' Periods (c. 1650-1350 BCE)") demonstrates that the political and administrative practices employed by the rulers of the Hittite Empire, rather than being innovations, had precursors in the early era of the state's existence. Th. van den Hout ("Schreiben wie Seeher. The Art of Writing: Remarks on the When and How of Hittite Cuneiform") considers the process of adaptation of the Mesopotamian writing system by the Hittite state for inscribing its own administrative language.

In "Das hethitische Siegel: Staatliche Innovation einer multilingualen Gesellschaft," Meltem Doğan-Alparslan and Metin Alparslan sketch the history of seal use in the ancient Near East, and particularly in the Hittite realm. As is well known, the script most frequently found on these items from Hatti is the Anatolian Hieroglyphs, and the authors repeat (p. 54) the frequent interpretation of the sign SCRIBA (L326) as the depiction of a cuneiform tablet. But they do not explain why the lower edge of the glyph is not closed, resulting in an image that looks more like a piece of furniture than a clay document. In any event, the highlight of this contribution is a clear photo of three signs of this script scratched onto a jug excavated at Middle Bronze Kültepe (p. 56, Abb. 10a-b) – the earliest certain instance of the Hieroglyphs vet known.

Interior decoration of Hittite public buildings is the topic of the piece by Constanze von Rüden and Johannes Jungfleisch ("Incorporating the Other. A Transcultural Perspective on Some Wall Paintings from Hattuša"). All that remains of this ornamentation are small, sorry, flakes (see esp. p. 70, Fig. 7), primarily from Temples 5 and 9, which permit the identification of the artistic techniques employed - both fresco and secco - but give scant impression of the larger compositions of which they were once a part. The writers observe that the relationships among the wall paintings of the Aegean, Qatna, Tell el-Dab'a, and Boğazköy and among their perhaps itinerant creators seem to be more complex than previously thought.

Hermann Genz ("Regional or International? Comments on the Origin and Development of Hittite Weapons and Military Technologies") concludes that much of the military hardware of the army of Hatti was imported or modelled on weapons developed elsewhere, which is striking when we consider how few other imported objects have turned up in excavations in the Hittite heartland.

The late Martin Bachmann reports on his work at the most famous Hittite water shrine ("Manifestation göttlicher Präsenz. Das Quellheiligtum Eflatun Pınar"), illustrating his presentation with wonderful photos, plans, and reconstructions (see esp. the sketch p. 111, Abb. 6). In addition to explaining how an ingenious mechanism allowed the direction of water so that it spouted forth from some of the sculptured figures, Bachmann points out that this construction shows evidence for the extensive use of the metal chisel, an implement rarely attested elsewhere in Hittite stonework (p. 113).

In his survey of the pottery recovered at Middle Bronze and Late Bronze sites in the Hittite core region ("From 'Anatolian' to 'Hittite'. The Development of Pottery in Central Anatolia in the 2nd Millennium BC"), Dirk-Paul Mielke makes two important points: 1) The beautiful ware of kārum Kanesh is mainly of local Anatolian character, owing little to the material culture of the Assyrian visitors (p. 125). 2) At the end of the sixteenth century, there is a radical decline in the variety and quality of the pottery produced in Hatti (pp. 130, 138).

Josef Lehner also takes a long-term view of technology in "Innovation and Continuity of Metal Production and Consumption during the Early Iron Age at Boğazköy-Hattuša." While during the Late Bronze Age the Hittite state was involved in securing the supply of metals, in the Early Iron Age, post-Hittite metallurgists mostly reworked scavenged metal. Nonetheless, analysis of the alloys produced in the later period shows an increase in the incidence of tin bronze, showing that trade in tin had not completely come to a halt.

Hydraulic engineering is treated by Hartmut Wittenberg in "Capture and Management of Ground and Stratum Water in the Hittite Empire - Technology and Cultural Significance." He shows that the large reservoirs uncovered at Boğazköy in recent years (the "Südteiche" and "Ostteiche") were not fed by water brought from outside the city by canals as once proposed, but rather were filled by seepage of ground water (p. 166). Wittenberg's investigation of the levels of the local aguifers over six years, including the "drought year" of 2014 (see p. 170, Fig. 9), leads him to suggest that the still mysterious partial abandonment of the capital in the early twelfth century BCE might have been caused, at least in part, by a sequence of dry years (p. 171).

Remi Berthon ("Herding for the Kingdom, Herding for the Empire. The Contribution of Zooarchaeology to the Knowledge of Hittite Economy") observes little change in the use of animal resources over the course of Hittite history, but cautions that this judgment is based on a rather low number of analyzed osteological assemblages (p. 182).

In "The Archaeobotany of Large-Scale Cereal Storage at the Hittite Capital of Hattuša" Charlotte Diffey, Reinder Neef, and Amy Bogaard present a clear description of the storage technology exemplified by the large silo complex uncovered in the Lower City, of which the authors analyzed the charred contents of several cells. Although hulled barley was the primary crop stored in every unit examined, the varying assemblages of weed species contaminating each segment indicate that the grain had been harvested in different locations (pp. 190, 195).

On the topic of weeds, R. Pasternak and Helmut Kroll investigate the possibilities for employing obnoxious plants in a kind of primitive biological warfare ("Wieviel haben wir Ende Mai zu essen? - Botanische Großreste aus hethitischen Siedlungskontexten"). Sparked by the report in the "Anitta Text" that upon his conquest of Hattuša this precursor to the Hittite dynasty had cursed the site and sown it with ZÀ.AH.LI-an (l. 48), they evaluate two extremely invasive plants native to central Anatolia, Taumelloch and Teufelszwirn (pp. 205–8), as possible weapons employed by Anitta. This is certainly an interesting idea, but what we know about ZÀ.AH.LI-a- (Akk. sahlû, 'cress') from other Hittite written sources – that it was a foodstuff and that it grew wild in desolate places – rather suggests that Anitta's action was more symbolic than lastingly destructive.

Andreas Schachner ("Motor oder Bremse? Die Rolle der hethitischen Hauptstadt Hattuša für die Transformation des hethitischen Reichs") considers the function of the capital as the incubator of the culture and institutions of the Hittite Empire, from which base these were diffused over its dominion. This view of the role of Hattuša is supported by the rapid disappearance of much of Hittite culture from central Anatolia following the near abandonment of the city.

The team of Catriona Pickard, Claudia Caldeira, Ninke Harten, Ulf-Dietrich Schoop, Handan Üstündağ, Laszlo Bartosiewicz, and Andreas Schachner approach the guestion of "Reconstructing Iron Age to Roman Period Diet from Bioarchaeological Remains: Preliminary Results from Boğazköy, North-Central Anatolia," employing stable isotope analysis of human (9 Iron Age, 12 Hellenistic, 43 Roman and Late Roman individuals) and animal remains. After clearly explaining this scientific technique (pp. 243-44), they display their results in two tables and conclude that human diet varied little across the late period, and was made up mainly of local grains with some supplementation with meat and dairy products (p. 249).

Geoffrey Summers ("After the Collapse, Continuities and Discontinuities in the Early Iron Age of Central Anatolia") ponders the transition between the Late Bronze and the Early Iron Ages, nicely setting out the sparse textual and archaeological information at our disposal for this

question and lamenting its inadequacy. The study by Lorenzo d'Alfonso that he mentions as perhaps shedding new light on the transition (p. 270) has now appeared: "War in Anatolia in the Post-Hittite Period: The Anatolian Hieroglyphic Inscription of TOPADA Revised," JCS 71, 2019, 133-52.

All in all, this book is a worthy tribute to Jürgen Seeher, to whom not only the contributors, but all of us working in Hittite studies, owe a considerable debt of gratitude.