

# The First Agricultural Settlements in Galilee

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THIS paper is concerned with settlement pattern, i. e. with the way environment was used by the first agricultural settlements in Galilee.<sup>1</sup>

The three representative sites examined here were not selected; they were discovered by chance and investigated after early remains had been reported there. However, for the purpose of this paper we are mainly concerned with the physiographic pattern of these agricultural settlements, without entering into a discussion of the finds. Suffice it to say that they date from within the period generally called 'Neolithic'<sup>2</sup> in the ancient Near East, corresponding to Jericho XI-X of pre-pottery Neolithic and to Jericho IX (-VIII) of pottery Neolithic 'A' and 'B'.<sup>3</sup> It has been ascertained<sup>4</sup> that in addition to the few known (and fewer published) Neolithic sites in Israel and Jordan, a much greater number lie hidden in the intermontane valleys of Galilee, the Carmel range,

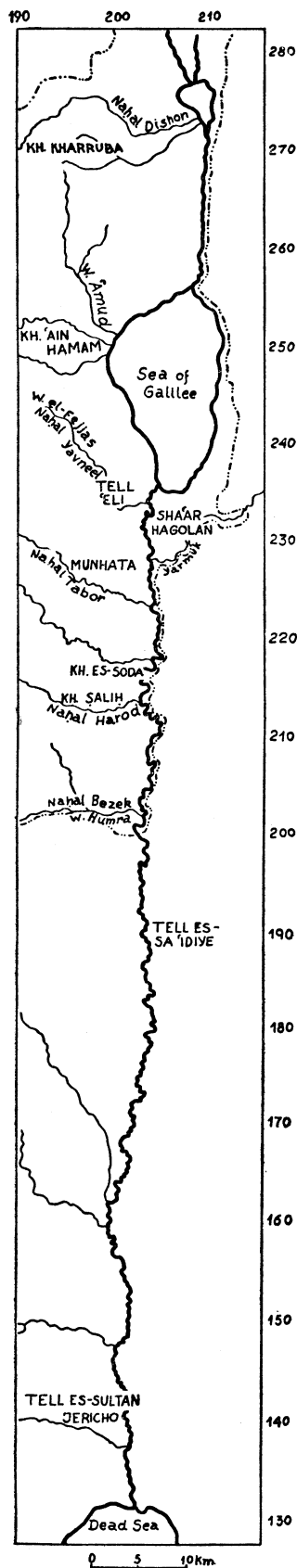
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<sup>1</sup> A considerable number of papers have recently dealt with settlement patterns and community patterns. The most relevant to this article are: D. H. K. Amiran: The Pattern of Settlement in Palestine, *IEJ*, 3, 1953, pp. 65-78, 192-209, 250-260; P. Philipps & Gordon R. Willey: Method and Theory in American Archaeology, *American Anthropologist*, 55, 1953, pp. 615-633; 57, 1955, pp. 723-819; S. P. Tolstov: The Prehistoric Cultures and Primitive Irrigation Systems of Ancient Chorasmia, *Annual, Inst. of Archaeology*, 10th report (1955-56), 1958, pp. 13-16; Kwang-Chih Chang: Study of the Neolithic Social Grouping: Examples from the New World, *American Anthropologist*, 60, 1958, pp. 299-300.

<sup>2</sup> The use of the term 'Neolithic', though frequently misleading unless properly defined, is here, I believe, justified. It is a recognized economic stage, the arrival and existence of an agricultural society. 'Neolithic' implies in Near Eastern Archaeology a limited phase, a time-horizon.

<sup>3</sup> K. M. Kenyon: *Digging up Jericho*. London, 1957, pp. 51-91.

<sup>4</sup> It is a pleasure to record here the great debt I owe to the many enthusiastic 'Trustees of the Department of Antiquities of Israel', whose keen interest and vigilance have brought to light unexpected finds. They have provided the basic material for all archaeological surveys undertaken since the establishment of the State of Israel. I am particularly grateful to Mr. J. Arnon, who discovered Kh. Kharruba, to the late Mr. B. Ravani, Regional Inspector of Antiquities at Tiberias, who most generously permitted me the use of his excellent survey, and most of all to Mr. J. Pruzhinin, a member of Kibbutz Alumot, without whose discoveries at Tell 'Eli this paper would probably never have been written. I also thank Mr. G. Edelstein who drew the maps published here.



the hills of Ephraim and Judah; others are found in the Jordan Valley, along the Kishon watershed, and towards the south along the rivers emptying into the Mediterranean.

a) *Kh. Kharruba* (map ref. 191272) is the northernmost of our three sites (see Fig. 1). Hidden in the Gush Ḥalav Valley (Wadi Jish) it has hitherto escaped attention. It lies at the junction of two valleys which finally form the Dishon Valley (Wadi Hindaj in Arabic). The Dishon Valley issues into the Huleh Basin. The Gush Ḥalav Valley (the upper part of Naḥal Dishon) as well as Naḥal Mir'eh (Wadi Kharruba) drain the northern slopes of Mount Meron (1208 m. above sea-level) and the high plateau (880-900 m.) between Bar'am and Maroun. Kh. Kharruba is protected by steep hills rising 150 m. on either side. Its position is important, for here passes an old road leading from the Lebanon into Galilee.

The Gush Ḥalav Valley and Naḥal Mir'eh abound with springs. A perennial flow of water rushes rapidly through the Gush Ḥalav Valley, falling a hundred metres within less than 2 km. Just opposite the ancient settlement are the ruins of a water mill — a testimony to the power and current of the stream. The northern arm, Naḥal Mir'eh, was irrigated by a small spring, 'Ein Sayif ('Ain es-Suyuf), 675 m. high. The junction of Naḥal Mir'eh with the Gush Ḥalav Valley creates a widening area of fertile land which today is called Ard el-Kharruba. Protected by surrounding hills, the site enjoys a milder and more moderate climate than its altitude would suggest. There is enough fertile soil to maintain an agricultural settlement. Patches of terraced earth and the lithic implements strewn along the river-

Fig. 1. Map of Jordan Valley showing Neolithic sites.

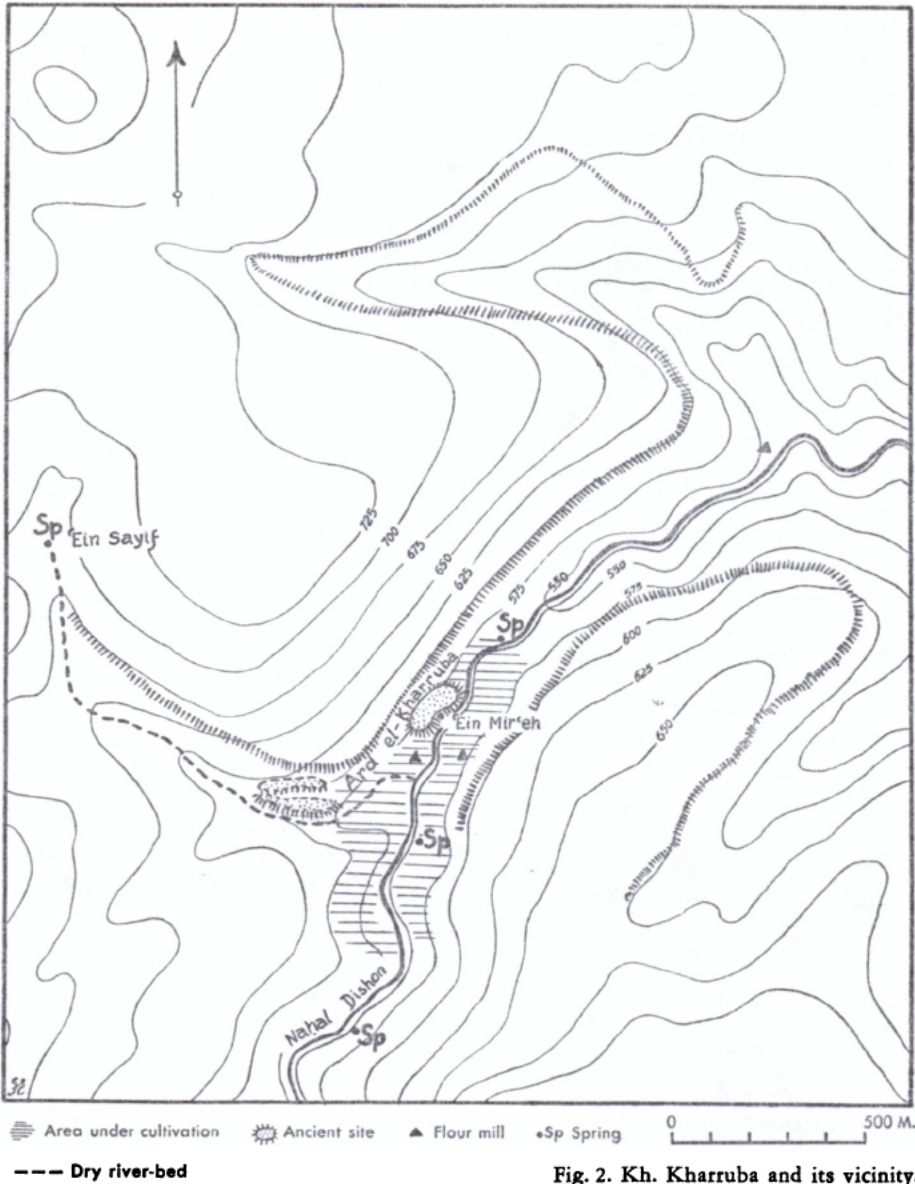


Fig. 2. Kh. Kharruba and its vicinity.

bed show how intensely the deep-cut natural channel linking the upper and lower springs as well as the river were exploited.

Kh. Kharruba (see Fig. 2) is situated on the floor of the valley. The settlement was later enlarged, giving it the appearance of a small fortified tell. It is difficult to say whether the fortifications and terraces belong to the early

or later development of the site. The river floods damaged and partly carried away the tell, cutting a deep section into it. It is worth noting that the strata bearing Neolithic pottery apparently lie near the top of the section.

Today the place is deserted, but the water mill, orchards, and patches of field bear witness to the many natural advantages that were exploited till recently. There were, however, many disadvantages too. Despite the unlimited supply of water, the amount of land that could be irrigated was restricted by the very depth of the valley bed. The torrents which carried new soil down the river destroyed and eroded existing fields and endangered the settlement itself. And the situation of the latter at the bottom of the valley made it defenceless against a planned attack. This settlement, like many similar ones, was abandoned at the end of the Chalcolithic period or at the beginning of the Early Bronze Age.<sup>5</sup>

b) The *Arbel Valley* (Wadi el-Hamam) is one of the three important valleys issuing into Lake Tiberias. It derives its water from the volcanic plateau around the Horns of Hattin, the famous site of the battle in A. D. 1187, in which Saladin destroyed the Latin Kingdom of Jerusalem.

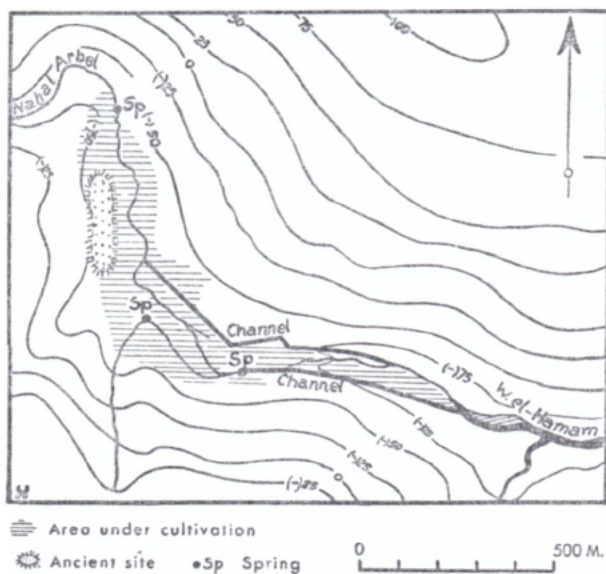


Fig. 3. Kh. 'Ain Hamam and its vicinity.

<sup>5</sup> D. H. K. Amiran: Sites of Settlement in the Mountains of Lower Galilee, *IEJ*, 6, 1956, p. 76.

We called the site, which has not been described before, Kh. 'Ain Hamam (map ref. 194 247). Like Kh. Kharruba, it is situated midway between high and low springs and the course of a perennial river (see Pl. 17A and Fig. 3). Kh. 'Ain Hamam also exploits the earth accumulated at the junction of two valleys. Naḥal Arbel in its short course quickly descends 135 m., passes through the canyon of Arbel, famous in Jewish history, and reaches Lake Tiberias 4 km. away, 212 m. below sea-level. The settlement pattern is very much the same as in the Gush Ḥalav Valley. The settlement is located along the river on nearly flat ground and parallel to a channel.

The irrigation channel is one of the decisive inventions in human progress. Here nature prepared most, if not all of the work. The channels at Kh. 'Ain Hamam are very short and could be dug and maintained by a few pairs of hands working the soil. There is very little definite evidence for their date; only the stone implements and the pottery can guide us. Another pointer may be the characteristic pattern of settlement.

Above the springs and below the caves in the Arbel Valley a particularly striking concentration of microlithic industries was found. The later Neolithic industries — rubbing stones, mortars, and a few rare potsherds — were discovered farther away, scattered along the fields watered by the channels. The impression gained was that the Neolithic households were sited, as at Kh. Kharruba, in relation to the arable land. Kh. 'Ain Hamam, too, suffered from the disadvantage of a limited reserve of irrigable land. The amount of land available for agriculture appears indeed to be greater than in the Gush Ḥalav Valley, but there was not enough to support an ever-growing farming community. In Chalcolithic times the community seems to have moved. Though the land continued to be worked, centres of settlement arose on safer and more advantageous sites.

c) *Tell 'Eli* (Kh. esh-Sheikh 'Ali — map ref. 202234) is situated near the mouth of the Yavneel Valley (Wadi el-Fejjas) overlooking the confluence of this valley and that of the Jordan (see Fig. 4). Naḥal Yavneel is a perennial stream running parallel to and south of the Arbel Valley. To the east of Tell 'Eli, at a distance of less than 1 km., there are two ancient bridges over the Jordan, and a further 5 km. towards the east, is Sha'ar ha-Golan with its Neolithic site<sup>6</sup> in the mouth of the Yarmuk Valley, where the Yarmuk approaches the Jordan

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<sup>6</sup> M. Stekelis: A New Neolithic Industry: The Yarmukian of Palestine, *IEJ*, 1, 1951, pp. 1-19.

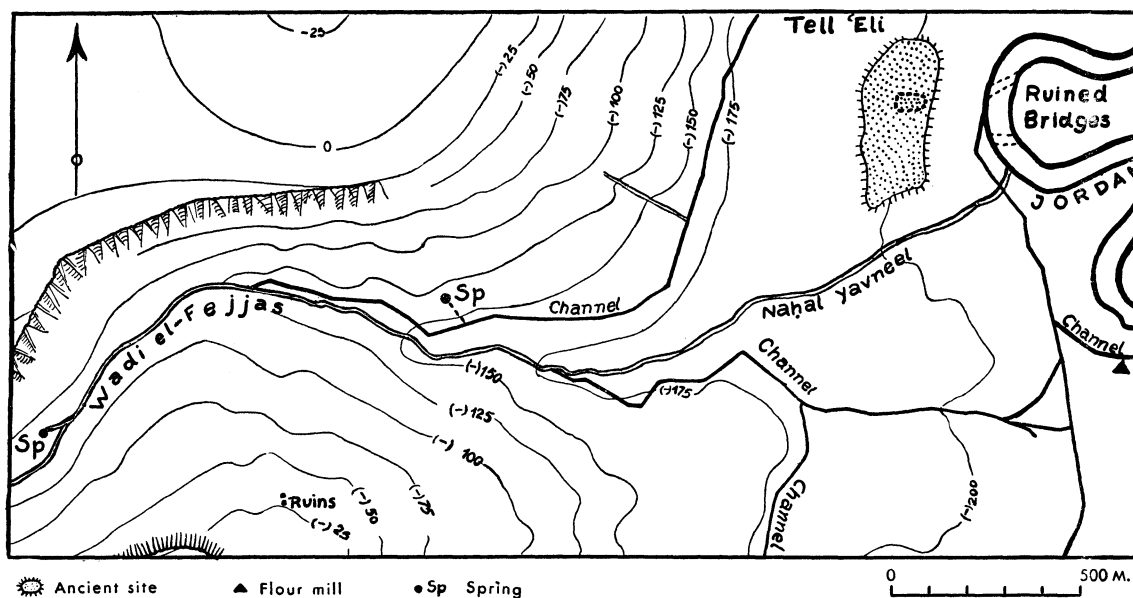


Fig. 4. Tell 'Eli and its vicinity.

from the east. The fact that Tell 'Eli is located on an ancient road lends it additional significance beyond its merely local importance.

The Yavneel Valley contains no less than thirty copious springs high up on the north side of the valley; a Roman aqueduct passes it, while three mills and irrigation channels are found there connected directly with the river or with the upper course of the aqueduct. The springs of Nahal Yavneel (Wadi el-Fejjas) have been famous through the ages for their abundant water. The major sources lie 100 m. above Tell 'Eli. Another spring is situated only 70 m. above its fields. These waters can easily be tapped and directed in the course of their short steep run.

The Jordan Valley gives on a larger scale the same climatic protection that is provided by the deeply cleft Gush Halav and Arbel Valleys, yet without the drawback of limited tillable land.

Tell 'Eli has been examined and excavated for four consecutive seasons,<sup>7</sup> and the finds make it contemporary with 'pre-pottery' and 'pottery' Neolithic

<sup>7</sup> I should like to acknowledge here the help I received from Mr. S. Yeivin, former Director of Antiquities, who gave every encouragement to my work at Tell 'Eli; from the late Prof. V.G. Childe, who directed my attention to this subject; and from Prof. M. Stekelis, who gave me the benefit of his guidance.

Jericho. An area of over 425 sq. m. was opened up. Test pits at definite intervals were sunk and investigated along the terrace overlooking both Naḥal Yavneel and the Jordan River (190-200 m. below sea-level). It was seen that the earliest inhabitants selected for their habitation a site nearest to the river and overlooking the fords. Their choice was generally made in accordance with the same principle that determined the selection of the Mesolithic sites. Yet while a concentration of early microlithic industries was found on the east bank opposite the ford, the so-called 'early Neolithic' industries were concentrated on the west side. At certain places only, their habitat overlaps with later 'pre-pottery' Neolithic, 'pottery' Neolithic, Late Neolithic, and Chalcolithic settlements. There is no evidence to suggest that the earliest inhabitants of the Tell 'Eli terrace, distinguished by their Early Tahunian lithic industry, were farmers. By analogy and archaeological evidence, these early Neolithic settlers should be classed together with the early inhabitants of Jericho. They may have practised and developed incipient agriculture, but we still have to wait for further information.

We are here concerned first and foremost with the principle of the selection of Tell 'Eli as a site, and the environmental factors used to shape the earliest agricultural settlement pattern. Owing to the tell's favourable situation, a number of different settlements are found one on top of the other. The first truly agricultural settlement on the site shows again a pattern similar to the Arbel and Gush Ḥalav Valleys. The households are clustered alongside and above the river or along irrigation channels. The relation of groups (aggregates) of houses to the nearby fields and channels appears to be the dominant consideration.

The wide mouth of Naḥal Yavneel with its fast flow of water offered ideal opportunities to prospective farmers. In addition, there was a wide expanse of land in the low valley bounded by the bed of the Jordan, which supplied an efficient drainage. Tell 'Eli could thus support a considerable population. Even after its destruction and after long intervals, settlers did return to live there near the fields, which doubtless had never been left untilled. There are definite signs of destruction and desertion in the middle or beginning of the Chalcolithic period. Sporadic settlement appeared again at the end of that period and lasted until the beginning of the Early Bronze Age, when Tell 'Eli was again abandoned. The magnificent site of Beth Yeraḥ nearby, built on the peninsula formed by the Jordan and Lake Tiberias, and the neighbouring

imposing tell of el-'Ubeidiye south of Naḥal Yavneel offered a security that the inconspicuous terrace of Tell 'Eli could never provide.

If we were to search to the south of Naḥal Yavneel on the west side of the Jordan for similarly situated Neolithic settlements, we would find the same settlement pattern at the confluences of the perennial streams parallel to Naḥal Yavneel. The site of Ḥurvat Minḥah (Munhata)<sup>8</sup> on a low terrace overlooking Naḥal Tabor (Wadi Bira) where it approaches the Jordan is a good example. Kh. Ṣaliḥ and Kh. Soda<sup>9</sup> overlooking the junction of Naḥal Harod (Jalud) with the Jordan are additional examples; they should be compared with Tell es-Sa'idiye el-Gharbi<sup>10</sup> in Trans-Jordan. In the light of Tell 'Eli we may state that Tell es-Sa'idiye belongs to the most favoured sites placed in an advantageous environment that can be adapted to fit the demands of changing times and settlement patterns. Similarly, at the famous and highly favoured site of Jericho, the spring of 'Ain es-Sultan and the channels, draining the stream of water into Wadi en-Nu'eima, fulfil the same function as do the springs of Naḥal Yavneel at Tell 'Eli. There are undoubtedly other sites of equal promise. In the valley of Beth-Shean near Naḥal Bezek (Wadi Humra), the western tributary of the Jordan south of the Harod, lies Tell Reḥov (Tell eṣ-Ṣarem), endowed with adequate land and water supplies. And beyond the geographic limits of this survey we are strongly reminded of Megiddo,<sup>11</sup> its proverbial springs, its ancient water mills, and Naḥal Midrakh (Wadi Tarukh) and Naḥal Megiddo (Wadi el-Lajjun) which form part of the Kishon basin.

The meagre 'Neolithic' strata at the lowest layers of major tells escaped notice for a long time as they are usually arranged according to principles alien to the later settlement patterns of tells. Therefore they had to make way and were completely demolished by ancient town-planners. For the same reason the majority of the earliest agricultural settlements remained hidden. All the early Galilean agricultural settlements were provided by nature with a highly efficient irrigation system incorporating a steep gradient, a rapid unlimited flow of water connected with an efficient drainage system. These are the advantages derived from a

<sup>8</sup> N. Tsori: Survey of the Beth-Shean Basin, *BIES*, 18, 1954, pp. 85-86 (Hebrew); idem: Neolithic and Chalcolithic Sites in the Valley of Beth-Shan, *PEQ*, 90, 1958, pp. 44-51.

<sup>9</sup> Tsori, *op. cit.* (above, n. 8), *BIES*, pp. 88-90 (Hebrew).

<sup>10</sup> N. Glueck: Explorations in Eastern Palestine, IV, *AASOR*, 25-28, 1951, pp. 293-294.

<sup>11</sup> At Megiddo, where excavations ended over twenty years ago, there are strong indications pointing towards the existence of a thin pre-pottery (Tahunian) level, which was destroyed by the subsequent clearance and superimposed fortifications.



situation along the flanks of the hills. The deep Galilean valleys offered protection against weather and provided for a renewal of soil. The northern section of the Jordan rift valley offered advantages such as almost unlimited water, large tracts of soil, and assured, regular harvests. The dominant consideration for these first agricultural settlers was the supply of land — land that could be watered and drained. In significant contrast to later tells, the first farmers chose for their homes the flat ground of the valley, and they hugged the lowest slopes and terraces. Their households were placed in clusters as near as possible to the arable land and the supply of water.

If the agricultural population was to expand still further, a new form of social organization and unified authority was imperative. If the water rushing down the valleys and the Jordan was to be used to advantage, so that new stretches of land could be cultivated, canalization and control would have to be centrally imposed. In fact, we do not know whether this social problem of central authority was solved in Syria and Palestine at that stage. We must doubt it. We have seen that the first agricultural settlements survived only until Chalcolithic times, in certain rare cases until the Early Bronze Age. The loosely sprawling Neolithic and Chalcolithic villages, dispersed on sloping and low ground, were replaced by closely knit village centres about the same time as the empires of Egypt and Mesopotamia were formed. By then the emphasis had shifted. Galilee was to remain a rugged, mountainous country with difficult communications, producing villages isolated and independent. Countrywide centres and cities like Hazor, Beth Yerah, and Beth-Shean achieved power and prosperity for different reasons.

A: Nahal Arbel  
(Wadi el-Hamam).



EARLIEST SETTLEMENTS  
IN GALILEE



B: Drainage trench through aqueduct.  
Ashlar block with inscription was found  
on its right side.



C: The inscription.

INSCRIPTION FROM CAESAREA AQUEDUCT