# A TYPOLOGICAL STUDY OF THE EL KHADR JAVELIN- AND ARROW-HEADS

LATE in 1953, a farmer of the village of El Khaḍr, 5 km. west of Bethlehem, discovered a hoard of arrow-heads and javelin-heads in bronze. Three were inscribed. The hoard was split up, and found its way into the hands of antiquities dealers. The first of the inscribed pieces (I) was bought by Abbé Milik on November 1st, 1953.[1] The second and third appeared on the market later, and were acquired by Messrs. Cross (II) and Harding (III=Amman Museum no. J5137).[2]

The entire hoard seems to have consisted of some twenty-six pieces; of these nineteen were secured for publication; of the remaining seven, the writers have seen six.

The three inscribed pieces (Pl. IV) read *ḥṣ 'bdlb't*,[3] *ḥiṣṣ/ḥiẓẓ 'abdlabō(')t/'abdlabī(')t*, 'the dart of *'Abdlabī't*.' The name is well known, thanks to its occurrence in a list of bowmen from Ugaritic (321 : III : 38). The goddess, *lb't*, is most easily identified with *'Aṯirat-Qudšu*. In this case *'Abdlabī't* would be a pendant to *'Abd'aṯirat* of the Amarna Letters.[4]

The script of the javelin-heads is intermediate between the little group of Proto-Canaanite inscriptions from the 13th and early 12th centuries B.C., all from Palestine, and the corpus of 11th/10th-century Phoenician inscriptions (chiefly from Byblus). It can scarcely be earlier than the 12th century B.C., nor later than the early 11th. A date *circa* 1100 B.C. is entirely suitable.[5] To be noted are the 'dotted' *'ayns*, which have no parallels later than *circa* 1200 B.C., the form of *beth*, precisely identical with that of the 13th-century Lachish bowl (shifted ninety degrees in stance), the slender *daleth*, tightly coiled *lamedh*, and archaic (unparalleled) *ḥeth* (on nos. II, III; the *ḥeth* of no. I has good parallels in the Beth-shemesh Ostracon) and *ṣade*. Most extraordinary of all, the javelin-heads are written vertically, and in the case of II and III, with symbols in the stance of left-to-right writing. Vertical writing prevailed in the 15th century B.C.; the latest Proto-Canaanite inscription written from left to right is the Lachish ewer (third quarter of the 13th century B.C.). Moreover, the evolution of the script, especially the stable stance of 12th/11th-century forms, indicates that right-to-left horizontal writing became thoroughly dominant by the end of the 12th century, if not earlier. Thus the little inscriptions on the javelin-heads are the earliest exemplars of conventionalized alphabetic script. At the same time, they establish beyond cavil that the 'Phoenician' alphabet evolved from a Proto-Canaanite precursor.

[1] This piece has been presented by Abbé Milik to the Palestine Archaeological Museum.

[2] The writers wish to thank Mr. Harding for permitting them to study and publish his javelin-head and arrow-head (J5138), and Mr. Yusif Sa'ad and the Palestine Archaeological Museum for permission to publish the arrow-heads from Tomb 419, Tell el-'Ajjûl, and for preparing and photographing the weapons of their hoard.

[3] No. II omits *'aleph*.

[4] A detailed discussion of the linguistic details of the reading and of the identification of Labī't is to be found in the writers' article, 'Inscribed Javelin-heads from the Period of the Judges, etc.,' *BASOR*, 134 (April 1954).

[5] The palaeography of the javelin-heads is discussed in detail in *BASOR*, article cited above.

The recovery of the little hoard provides a special opportunity for typological study. This is true for several reasons. The hoard is more or less homogeneous; at least twelve pieces are sufficiently well preserved to permit accurate drawing; the hoard is from a period when javelin- and arrow-heads are rather rare; and most important, the results of typological dating can be checked by palaeographical evidence from the inscribed pieces. Moreover, there is a special need for systematic typological study of weapons, especially of such common pieces as javelin- and arrow-heads.[1] For the most part, archaeological reports have given little attention to the typology of arrow-heads, especially in the period Late Bronze I to Iron I, when types are sufficiently differentiated to make their study most significant. The disinclination to study them is caused by a number of factors. While small copper weapons have been found in great abundance, generally they are found in advanced stages of corrosion; the difficulty of cleaning them and drawing them is considerable. Hence a few examples are photographed; at best simple outline drawings are made. Quite naturally such reporting is of no value, especially if uncleaned examples are photographed. The general shape of arrow- and javelin-heads is only rarely enough to give a basis for dating; the so-called 'leaf-shaped' form, for example, dominates, with only slight evolutionary changes, from the Middle Bronze to the Early Iron Age. The details of form which are, on the contrary, of great use for precise dating are quite often wholly obscure in published photographs and drawings.

A serious typological study of the small copper weapons from Palestine either must be done in museums, working with the pieces themselves, or must await future publications when stricter and standardized procedures in description and drawing have been established. The present paper, while limited to a study of arrow- and javelin-heads in the transition from L.B. II to Iron I forms, reflects our frustration in attempting comparative study, and therefore attempts in its restricted compass to make some methodological suggestions.[2]

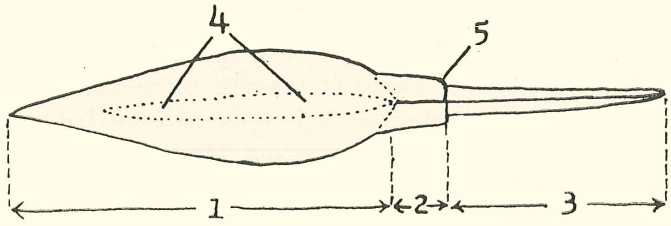
A list of types with a proposed terminology, taken for the most part from botanical terms descriptive of leaf shapes, is given in Fig. 1. Its usefulness is limited to M.B. II to Iron II shapes. Three-bladed, triangular or quadrangular types and elaborated barbed forms, most of which were introduced towards the end of Iron II, and which flourished in the Persian and later periods, are omitted. No serious attention has been given to iron arrow-heads, which begin to dominate in Palestine in the 10th century B.C.[3]

The important typological elements of the arrow-head are: (1) the shape of the blade, (2) the existence of, and form of, the stem, (3) the existence of, and type of, the 'cut,' (4) the form of the tang, (5) the existence of, and form of, the rib, and (6) the treatment of the blade point.

1 Petrie's *Tools and Weapons* (London, 1917); Bonnet's *Die Waffen der Völker des alten Orients* (Leipzig, 1926); W. Wolf's *Die Bewaffnung des altägyptischen Heeres* (Leipzig, 1926), all of which are useful in many ways, are of little value for detailed typological analysis.

2 A *caveat* should be placed before all of the generalizations made below. Often they are made on the basis of a set of data insufficient or too poorly reported to permit inductive results which are certain. Typological sequences may be much oversimplified at a number of points.

3 Cf. Olga Tufnell, *Lachish III. The Iron Age*, Text: p. 386; W. F. Albright, 'The Excavation of Tell Beit Mirsim III' (*AASOR*, XXI–XXII), § 45–47.




1. Blade
2. Stem
3. Tang
4. Rib
5. Cut

I. Lanceolate

II. Oblanceolate

III. Lozenge-shaped

IV. Ogee

V. Ovate

VI. Pointed-ovate

VII. Oblong

VIII. Deltoid

IX. Barbed-deltoid

X. Linear

XI. Spatulate

XII. Eliptic

F.M.C.

FIG. 1

The shape of the blade is not necessarily a criterion for dating. On the other hand, certain shapes do tend to dominate in certain periods. Characteristic of L.B. I and especially L.B. IIA are the long, narrow oblanceolate and elliptic blades.[1] Ogee shapes[2] and broad, oblanceolate or spatulate shapes[3] appear to become common at the beginning of the Iron Age, though (broad) lanceolate and pointed ovate or simple ovate forms mark L.B. and Iron I styles as well. It is wise, at least at present, to give weight to shapes of blades only when a number of pieces are in hand.

More important in tracing the evolution of arrow-heads between M.B. II and the end of Iron I is the development and treatment of the stem. In M.B. II and L.B. I, the stem is virtually non-existent as a differentiated element of the arrow-head. In L.B. I, square (in cross-section) tangs tend to disappear with the development of rhomboidal tangs. The rhomboidal shape of the tang requires that at the base of the blade the flat of the blade rise at the centre, on either side tapering to a point, which is prolonged, as it were, to form the edge of the tang—at right angles to the cutting edges of the blade. At the two 'points' where the blade becomes the tang is a bulge, the rudimentary stem. A second element in the formation of the stem is the 'cut.' At least as early as the end of L.B. I, abruptly tapered or vertical cuts into the rudimentary stem begin to appear. At the end of L.B., the stem has become developed, especially in the javelin-head and larger arrow-heads. Heavy rhomboidal stems with vertically cut rhomboidal tangs are characteristic of 11th/10th-century types. The stem becomes pronounced when long, especially oblanceolate and elliptic shapes give way to broader blades in the transition from the Late Bronze Age to Iron I. In the former, the narrow neck of the blade serves as a kind of stem, or to put it differently, the stem is part of the blade rather than a separate element.

The rib of the arrow-head may be a significant element. A high rounded rib on an oblanceolate blade is characteristic of L.B., especially of IIA (the Amarna Age)[4]; probably the rib is skeuomorphic in origin, in imitation of socketed lance-heads, where the rib is structurally necessary. Slightly raised, flat ribs seem to characterize blades transitional from L.B. II to Iron I.[5]

The treatment of the blade point is also a useful typological element under certain circumstances. Aside from linear forms, javelin-heads and arrow-heads in M.B. II and L.B. I and II are usually tapered in thickness towards the point, or simply flat, sharpened

[1] See Pl. III, a homogeneous lot from Tomb 419 (unpublished), Tell el-'Ajjûl. The tomb is L.B. IB or L.B. IIA. The specimens are numbered in the Palestine Archaeological Museum as follows: line 1, from left to right: 33.1681, 33.1576, 33.1637, 33.1615, 33.1628, 33.1630, 33.1618, 33.1667, 33.1632, 33.1664, 33.1633, 33.1660, 33.1666; line 2: 33.1658, 33.1672, 33.1665, 33.1652, 33.1654, 33.1650, 33.1681, 33.1629, 33.1617, 33.1682, 33.1674, 33.1675, 33.1683, 33.1684, 33.1605. Line 1 (beginning with no. 3) exhibits a series based on the treatment of the central rib. Nos. 4, 5, 6 are typical of the period with a high, rounded central rib. Line 2 exhibits a series based on treatment of the base of the blade. Line 1: 1 is a blunt 'bird stunner'; 1: 2 is a linear form, probably used for hunting.

[2] Cf. Macalister, *Gezer III*, Pl. 215: 46; Vol. II, p. 372; *Tell en-Nasbeh*, Pl. 104: 15, 17 (Iron II); *Megiddo II*, Pl. 176: 61, 65 (Strata VB–VA, 10th century B.C.).

[3] Cf. Riis, *Hama II: 3* (Copenhagen, 1948), p. 123.

[4] Cf. Wolf, *Die Bewaffnung*, etc., Pl. 9: 15, 16; (our) Fig. 3, line 1, esp. nos. 3–6.

[5] See *Hama II: 3*, pp. 122, 123; and the discussion of the El Khadr points.

on all sides to a point. Beginning in Iron I, a new type develops with a heavy, thickened point, which in extreme cases may be lozenge-shaped, or even rhomboidal in cross-section, with the thinnest part of the blade near the middle, or even near the base of the blade.

Before turning to a discussion of the El Khaḍr types, a brief excursus may be made on the distinction between the javelin- and the arrow-head. Hitherto no attempt has been made to distinguish the two: large points, generally over 10 cm. in overall length, have been called javelin-heads.[1] Smaller points, or indeed all 'dart'-heads, large or small, have been called arrow-heads. Quite tentatively, we may draw a line between the two at a blade-length of about 6 cm.[2] Blade lengths of more than 6 cm. are generally associated with proportionately much thicker and heavier blades, and in the case of Iron I heads, with thickened blade points. The difficulty which complicates matters is that we must also distinguish between war heads and hunting arrow-heads; and needless to say, functional differences prevent, at least at present, any simply typological arrangements.

In the drawing (Fig. 2: see also Pl. IV) there is a tentative arrangment of the El Khaḍr pieces into a typological series of javelin-heads (J I, J II, etc.), and arrow-heads (A I, A II, etc.). To distinguish function, however, in the case, for example, of J III: 7 and A V: 10, is exceedingly precarious. The difference in function in the case of J I and A I or A IV, on the other hand, is immediately apparent.

The inscribed javelin-heads from El Khaḍr are thick, rather broad, oblanceolate blades. Their stems are developed, especially in J I: 3, with tapered cuts, rhomboidal tapering tangs. Slightly raised, flat ribs are on each of the three; none is thickened at the point of the blade. In addition to the inscriptions, a thin line engraved in the blade circles the edge, decorating the javelin-head.[3] None of the other pieces has such decoration.

The closest parallels to these three pieces are the Ruweiseh arrow-head published by Guigues and Ronzevalle,[4] and a second in the Beirut Museum yet to be published. These can be dated only by the inscriptions they carry (*circa* 11th century B.C.). From datable archaeological contexts come excellent parallels from Tell Abū Hawâm: slightly earlier types from Stratum V (13th century) and slightly later from Stratum III (11th/10th century).[5] Other parallels come from Hama, presumably from the 12th/10th centuries.[6] They are 'heavier,' tending to spatulate blade shapes, with abrupt, vertical cuts in place of the tapered cuts and tangs of our forms; thus they may be considered

[1] Cf. W. F. Albright, *TBM II* (*The Bronze Age*), § 59.

[2] The length of the tang is, more or less, irrelevant. Thus overall measurements are not as significant as blade sizes in determining the function of the piece.

[3] Not shown on the drawing.

[4] *Mélanges de l'Université Saint-Joseph*, XI: 7, Pl. III.

[5] See list appended below. For chronological discussions of these strata, see W. F. Albright, *TBM III*, p. 6; Maisler, 'The Stratification of Tell Abū Huwâm on the Bay of Acre,' *BASOR*, 124, pp. 21 ff.; G. Van Beek, 'Cypriote Chronology and the Dating of Iron I Sites in Palestine,' *ibid.*, pp. 26 ff.

[6] *Hama II: 3*, p. 123, § IVB; p. 33, Fig. 20. Until the chronology of the Hama cemetery levels is clarified, we cannot rely too much on these parallels. Cf. Schaeffer, *Stratigraphie comparée et Chronologie* (Oxford, 1948), pp. 112 f., whose dates for Str. F (=Cemetery I–II) are clearly too high. But see Van Beek, *op. cit.*· p. 28, n. 8*a*.

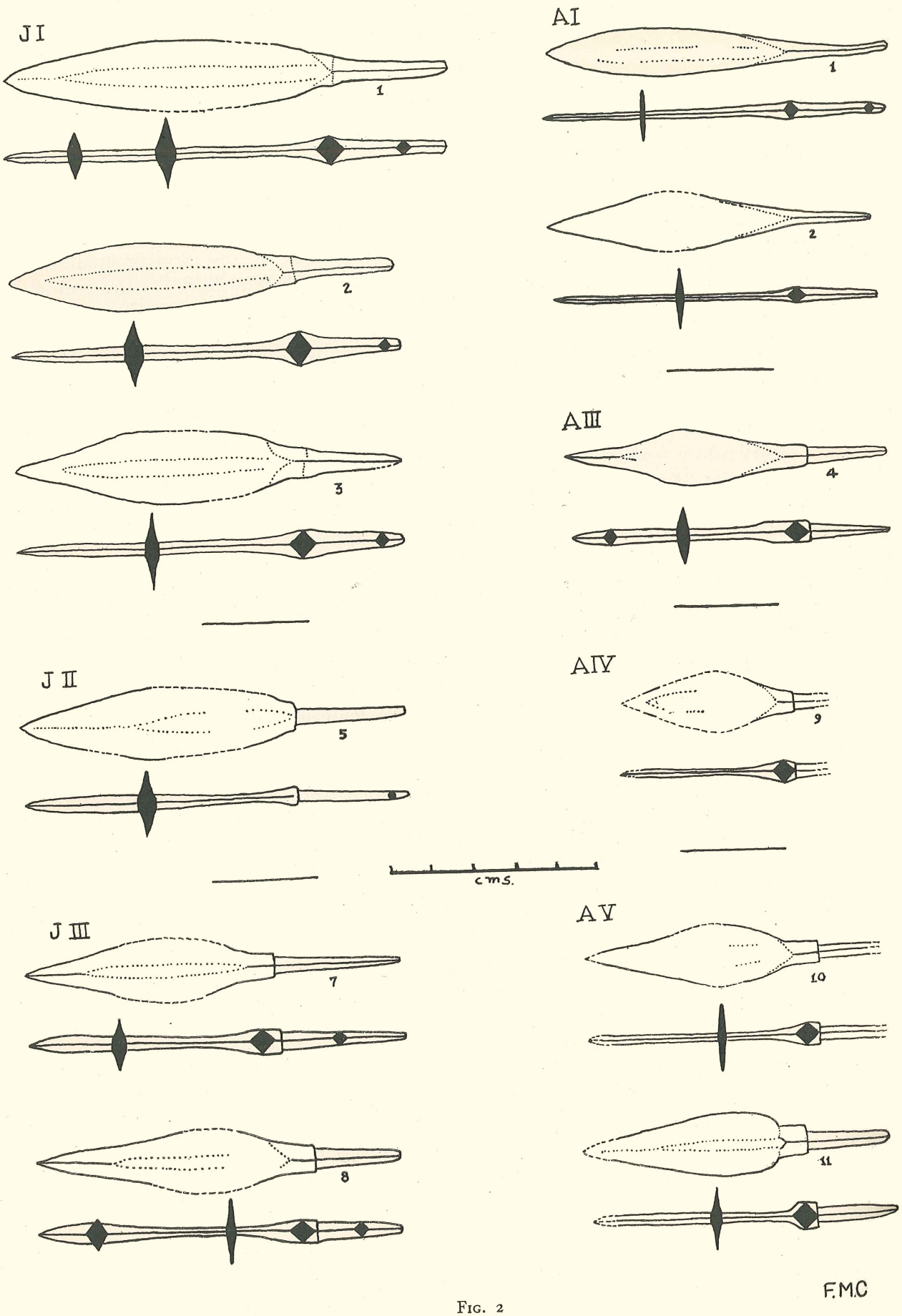



FIG. 2

to be more advanced typologically if not later in date. Excellent parallels are also found in Megiddo VII (L.B. II) and V (11th century); in unpublished pieces from L.B. II Lachish (Tell ed-Duweir) and Tell el-Fūl (11th century B.C., Str. II). For details, see the list at the end of the paper.

Class A I has closest affinities with L.B. arrow-head forms: they have no true stem, and in the case of A I: 1, the narrow oblanceolate form characteristic of L.B. II blades. A III: 4 is an ogee blade. Best parallels are from Iron I (see above). The type continues into Iron II in iron and in an occasional bronze specimen.

Classes J III, A IV and A V have their affinities with Iron I forms, and at a number of points anticipate iron arrow-head types. The abrupt cut, lanceolate shapes, elongated rhomboid stems and, in several cases, thickened points characterize developed Iron I types. The rib, if present, is vestigial—though heavy raised ribs do appear on deltoid and certain other special types in the Iron Age.

The pieces in the hoard thus run the gamut from types whose closest affinities are L.B. (A I), or transitional from L.B. II to Iron I (J I, J II[1]), to Iron I types (A III–V, J III).

The spread of the series is extraordinarily broad, from A I: 1 to A V: 11. Whether this typological spread reflects a chronological spread in the hoard is difficult to say; it would not be surprising if this were the case. Certainly no such variety came from a single workshop; probably no such variety was being manufactured at one time. One may speculate that the inscribed pieces were votive offerings presented to a temple, presumably a shrine of Labī't-Asherah. In this case, the hoard may be a collection of disparate origin in time and place, perhaps booty taken in raids, together with pieces of the raider himself. Venturing even further in the realm of speculation, we may observe that El Khaḍr was almost certainly not the centre of a settled L.B.–Iron I Canaanite occupation, and that the political situation in the Judean hill country in the late 12th and early 11th centuries was characterized by perennial raids by newly arrived Israelites on the rich Canaanite cities of the Shephelah and Plain. We may have chanced upon the loot of an Israelite raider.

At all events, the hoard is to be dated 12th/11th-century according to typological indications, as well as the palaeographical evidence of the inscribed javelin-heads.

Appended is a list of the pieces published, with parallels taken chiefly from Palestinian excavations. The numbering follows the arrangement in the photograph (Pl. IV) and the drawing (Fig. 2).

## Description of the El Khaḍr Hoard

J I: 1 length: 10·5 cm.; blade length: 7·7 cm. Blade oblanceolate. Undeveloped stem (rhomboidal in section); tapered cut to rhomboidal, tapering tang. Slightly raised, flat rib. Inscribed with late-12th-cent. B.C. alphabetic characters. Decorated with a thin, engraved line circling blade.

[1] J II shares its treatment of the stem with L.B. II heads. The round tang is exceptional, and may be simply the result of the corrosion of thin edges of an originally square or rhomboid tang. Its blade, on the contrary, with slightly thickened point, vestigial rib and modified oblanceolate shape, fits best with early Iron I types.

J I: 2 l. 9·3 cm.; bl. 6·6 cm. Oblanceolate blade. Rudimentary, rhomboidal stem; tapered cut to rhomboidal, slightly tapered tang. Slightly raised, flat rib. Inscribed and decorated as J I: 1.

J I: 3 l. 9·2 cm.; bl. 6·7 cm. Modified (pointed) oblanceolate blade. Developed stem; tapered cut to rhomboidal, tapered tang. Slightly raised, flat rib. Inscribed and decorated as J I: 1.

PARALLELS TO J I

Ruweiseh: *Mélanges de l'Université St.-Joseph* XI: Pl. III. Megiddo: *Megiddo II*, Pl. 176: 57 (Str. VII, L.B. II); Pl. 176: 66 (Str. VA, 10th cent.); *Megiddo I*, Pl. 81: 16 (Str. V, 11th cent.); *Megiddo Tombs*, Pl. 89: 2 (L.B. II?). Tell el-Fâr'ah: *Beth Pelet II*, LIV: Tomb 936 (13th cent.). Tell Abū Hawâm: *QDAP*, IV, Pl. 33: 360, 361, and esp. 362 (Str. V, L.B. II); cf. pp. 58, 59; Pl. 33: 125, 127, 128 (cf. p. 26; Str. III, 11th cent.). Tell el-Fûl: *AASOR*, IV, Pl. 33: 12; compare the treatment of the stem with J I: 3 (Str. II, 11th cent.). Hamma: *Hama II: 3*, p. 123 (§ IVB); cf. p. 33, Fig. 20 (12th/10th cents.?). Tell Beit Mirsim: *TBM II* (*AASOR*, XVII), Pl. 41: 20, 21*a*, 21*b* (Str. C, L.B.). Cf. unpublished arrow-heads from Tell ed-Duweir in the Palestine Archaeological Museum: PAM 37.828; 35.3063; etc. (L.B. II). Tell el-'Ajjûl: Fig. 3, line 1: 7; line 2: 3–12, etc. (L.B. IIA?). Beth Shan: PAM 36.1677 (Str. VIII, 14th cent.).

J II: 4 l. 8·7 cm.; bl. 6·7 cm. Broad oblanceolate blade. Cut vertical and abrupt at base of blade; round (?) tapered tang. Vestigial flat rib. Thickened at point. Badly corroded.

J II: 5 l. 9·2 cm.; bl. 6·5 cm. As J II: 4.

PARALLELS TO J II

For blade shape, see J I, J III; the treatment of the cut (virtually without stem) is most closely paralleled in L.B. II: Tell el-'Ajjûl (Fig. 3), l. 1: 4, 5, 7–9; l. 2: 13, 14; *Ancient Gaza II*, Pl. XVI: 131, 2 (L.B. II). Megiddo: *Megiddo II*, Pl. 176: 66 (Str. VA, 10th cent.). Gezer: *Gezer III*, Pl. 75: 3–7, 11 (L.B. II, Tomb 30). Hama: *Hama II: 3*, p. 122, §IVA (1200 B.C. and later; for treatment of base). Tell Jemmeh: *Gerar* 23: 29 (Level 189, 10th/9th cents.).

J III: 6 l. 8·5 cm.; bl. 6·0 cm. Blade lanceolate. Fully developed rhomboidal stem; vertical cut to tapered, rhomboidal tang. Vestigial flat rib; thickened at point.

J III: 7 l. 8·9 cm.; bl. 5·5 cm. As J III: 6.

J III: 8 l. 8·7 cm.; bl. 6·1 cm. Narrow lanceolate. Treatment of stem, cut, tang and rib as J III: 6. Heavily thickened point.

PARALLELS TO J III

In addition to elements in common with pieces listed above for which comparative material has been cited, see for the peculiarities of this class: 'Ain Shems: *'Ain Shems Excavations*, Pt. IV, Pl. 53: 7; cf. Pt. V, pp. 150 f. (Str. III, 1200–1000); Pl. 53: 9 (note thickened point; Str. II, Iron I); *Rumeileh*, p. 8, Fig. 6 (Str. IIA, 11th/10th cents.). Cf. *Beth Shan. Four Canaanite Temples*, Pl. 31: 10 (Str. VI, 13th/12th cents.); Pl. 32: 6 (Str. VIII, 14th cent.). Iron arrow-heads frequently are of this type. See esp. *Megiddo I*, Pl. 81: 22 (Str. V, 11th/10th cents.).

A I: 1 8·1 cm.; bl. 5·6 cm. Blade: narrow elliptic. No true stem. Tapered to rhomboidal tang, with slight thickening (rudimentary stem) at base of blade. Blade flattened at centre (in lieu of rib), and uniformly thin.

A I: 2 l. 7·8 cm.; bl. 5·8 cm. Blade broad elliptic, tending to lozenge-shaped. Treatment of base of blade and tang much as A I: 10. No rib. Little or no thickening at point.

PARALLELS TO A I

Parallels to A I: 1 are chiefly from L.B. See under J I. Add to them esp. *Gezer III*, Pl. 215: 16, 21 (4th Semitic, 1200–1000 B.C.). *TBM II* (*AASOR*, XVII), Pl. 41: 20, 21*a*, *b* (Str. C, L.B.). The lozenge-shaped type occurs as early as M.B. II (*Ancient Gaza I*, Pl. 20: 59), and is popular in Iron I and later at Tell Jemmeh: *Gerar*, Pl. 29: 24 (12th–10th cents.); Pl. 29: 31 (10th/9th cents.); etc. The treatment of the base is a better typological criterion.

A II: 3 l. 7·0 cm.; bl. 5·3 cm. Blade, pointed ovate. The stem is rather like J II, though more developed; it remains, however, an element of the blade. The cut is profound to a short, untapered tang. The central rib is vestigial. The blade is fairly uniform in thickness. Affinities are with Class J II.

A III: 4 l. 7·7 cm.; bl. 4·9 cm. Blade ogee. Long, developed stem. Abrupt, but shallow cut to tapered rhomboidal tang. No central rib. Point slightly thickened to give lozenge-shaped cross-section.

A III: 5–7 Broken. Treatment of stem and tang like that of A III: 4 (cf. J III: 7). The shape of blade cannot be reconstructed.

PARALLELS TO A III

*Megiddo I*, P. 81: 4, 7 (Str. IV, 10th cent.); Pl. 80: 22 (Str. III, 8th cent.). *Megiddo II*, Pl. 176: 61, 65 (VB, A, 11th/10th cents.). *Gezer III*, Pl. 215: 34, 35, 46 (cf. *Gezer II*, p. 372; the type begins in 4th Semitic, 1200–1000 B.C.). The ogee shape is also found in Iron II (cf. *Tell en-Naṣbeh I*, Pl. 104: 15, 17).

A IV: 8 Badly corroded. bl. *circa* 5 cm. Developed stem; rhomboidal tang. Thickened at point.

A IV: 9 Badly corroded. bl. *circa* 3·8 cm. Reconstructed shape, broad lanceolate. Short, but developed stem. Vertical cut to rhomboidal tang (broken). Vestigial flat rib. No thickening of blade point.

A V: 10 l. 6·7 (plus) cm.; bl. 6·0 cm. Blade lanceolate. The stem is distinct element, rhomboidal. The cut is profound (vertical). Tang is broken, but probably not tapered. The blade may have had a vestigial rib.

A V: 11 l. 7·4 cm. (reconstructed); bl. 4·8 cm. (reconstructed). Blade pointed ovate. The stem is more developed than any of the other pieces: thick, rhomboidal, sharply tapered to the blade, and the cut is vertical and deep to a slightly tapered, rhomboidal tang. A distinct, flat rib, and thickened point characterize the blade.

PARALLELS TO A V

For parallels, see section on Class J III, esp. the examples from Beth Shan and Rumeileh (*'Ain Shems Excavations III*).

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