TELL EL-MAZAR: STUDY OF THE HUMAN SKELETAL REMAINS

by
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Introduction

The following report presents the results of a research on the anthropological material from Tell el-Mazar conducted by two of the authors (W. Henke, J. Wahl) in collaboration with Dr. Disi at the Department of Biology (University of Jordan, Amman). The material under study had been excavated by Prof. Khair Yassine (Department of Archaeology, University of Jordan) during three seasons in the Jordan Valley. The anthropological research in the laboratory of Dr. Disi of the Department of Biology was funded by the Deutshe Forsche Forschungsgemeinschaft and the Research Council of the University of Jordan. We make grateful acknowledgements to the financial assistance from both sources and to Prof. Khair Yassine and his Graduate student Mr. Msaytif Suleiman Msaytif (Department of Antiquities), who were so kind to give us all available archaeological information. Our special thanks are addressed to Mr. A. R. Badran, Director of Scientific Photography Section, University of Jordan, who helped us fully in the preparation of the figures given below. As the following notes on the human skeletal remains of the Tell el-Mazar graveyard form part of the larger excavation report, we will not give an exact description of the site, because this is already done in the archaeological report by K. Yassine (this publication), but we will only mention, that the skeletal remains come from the Iron age period and can be exactly dated to 550-450 B.C. The site is situated some kilometres northwest of Salt in the Ghor (Jordan Valley).

Section I

"Why Are Bones Studied?"

Bones are commonly unattractive to archaeologists, but intensive studies on skeletal remains have demonstrated that the human skeletal remains are not a less fruitful subject of research than pottery, metals, architecture, or any field of historical and prehistorical study. The "biological remains" may have information for answering the questions concerning the past human population, i.e., with respect to morphology, racial affinities and ethnic relationships, diachronic changes in a geographical region, their mortality rate, life expectancy and their diseases. To answer the above questions, a broad literature on methods of study of prehistoric anthropology has been established. The techniques and lines of inquiry which may provide us with some solutions are especially described in the manual textbooks of Brothwell (1968, 1972), Bass (1971, Krogman (1962), Martin (1927)) and Schwidetzky (1971). These special techniques which are applied to determine age and sex and used in the diagnosis as well as in the calculations of the life table are given in section 2.

To summarize the aim of studying human skeletal remains, we can say that the main goals are to reconstruct the past human population and to broaden our knowledge about the special ethnic and racial differentiations in the past as well as the inquiry into diachronic changes. For these reaons the study on the skeletons from Tell el-Mazar is important to our understanding of the past.

Iron Age Excavations in the Middle East

The Middle East is one of the most interesting prehistorical regions. Though a fairly large anthropological literature is available, we know very little of the physical anthropology of the early population. This is because most of the skeletal remains are badly preserved. As one can see from the large bibliographies of the Middle East, as have been compiled by

Boxton and Rice (1931), Krogman (1937), Field, (1956, 1961) Ferembach (1968) and from special papers (e.g., Kunter, 1977; Arensburg, 1973), most of the anthropological series consist of one or two skeletons, this means that they are in no way representative. Thus generalizations of ethnic and racial descriptions and diachronic processes cannot be made. Arensburg (1973) gathered all the available skeletal remains from the Middle East (especially Palestine and Jordan) from the Epipaleolithic period up till now to analyse the ethnic changes. These skeletal series, which belong to the same period as those of Tell el-Mazar are very scanty and listed below (Table 1).

* N is the number of skeletal remains

A newly studied series of the Persian period (alternatively Iron Age) was excavated in Syria in Kamid el-Loz (Kunter, 1977) and consists of about 94 skeletal individuals. Generally, the Iron age material especially human remains is not very rich, except Tell el-Mazar, Lachish and Kamid el-Loz. We thought that studying them may strengthen the previous findings.

Section 2
Methods:

Since most of the skeletons from Tell el-Mazar were damaged by the soil, morphometrical analyses were restricted to some well preserved skeletons. Measurements were taken according to Martin (1928) and Howells (1974).

Sex determination procedures were conducted by bone mohogenesis and measurements. We applied categories which gave the most significant information. The categorization is described by the European Anthropologists (N. N., 1979) and consists of the following sexual dimorphic features:
Cranial: Prominence of the *glabella*
arcus superciliaris
tubera frontalia and parietalia
inclinatio frontale
processus mastoideus
planum nuchale
protuberantia occipitalis externa
shape of the *processus zygomaticus*
os zygomaticum
crista supramastoidea
margo supraorbitale, forma orbitae
nentum mandibulae, angulus mandibularis
Postcranial skeleton:
sulcus praeauriculairs
incisura ischiadica major
angulus subpubicus
arc compose
os coxae
foramen obturatum
corpus ossis ischii
crista iliaca
fossa iliaca
Furthermore, we noticed general robustness and size of the teeth. As a metric attempt to classify an individual, we applied the discriminant functions of the *pars perrosa* for sex determination (Wahl & Henke, 1980; N. N. N. 1979; Holeop 1976; Breul 1974).

Age determination of subadults was based on tooth eruption and skeleton ossification. Our determinations followed the advice of Moorres et al. (1963) Maresh

Table 1: Iron Age Skeletal Remains from Palestine and Jordan (after Arensburg, 1973)

Site	*Excavator*	*(N)**	*Author*	
Megiddo	P. L. O. Guy, R. M. Engburg	7	Hrdlivka	(1938)
Lachish	O. Tufnell	634	Risdon	(1939)
Lachish	O. Tufnell	—	Giles	(1953)
Ain Shems	E. Grant, & G. E. Wright	1	Hooton	(1939)
Azur	M. Dothan	4	Perembach	(1961)
Gezer	R. A. S. Macalister	?	Macalister	(1911)
Gibeon	J. B. Prichard	2	Gloor	(1952)

(1955), and Wolf-Heidegger (1954). Adult and old skeletons were diagnosed by the polysymptomatic method of Acasadi & Nemeskeri (1970) using the tables of Sjovold (1974) (published in N. N., 1979). This method is based on a maximum of four age--specific variables: *epiphyses* of the proximal humerus and femur, obliteration of the cranial sutures and *facies symphyseos ossis pubis*. In those cases, where only little information was available the determination was based on the *ectocranial suture* closure after Vallois (1937) or the abrasion (attrition) of the teeth after Miles (1963), Lunt (1978) and Brothwell (1972). The calculation of the abridged life expectancy table of the Tell el-Mazar population was based on the methods described by Acsadi & Nemeskeri (1970). The diagnosis of pathological finding and special anatomical features were based on reports of Steinbock (1978), Bach & Bach (1971), Stloukal et al., (1971).

In addition to the metric data the epigenetical traits, a new system of observation, has been established during the last decade in order to analyse the relationship between ethnic and racial groups. Although the material was scanty, we could collect enough of it for our study. The following list of cranial epigenetical traits was taken into account. The numbers of the features in Section 3 are given in relation to this category (Table 2).

Table 2: Epigenetic Variants

1. *metopism*
2. *supra-orbital foramen* (complete)
3. frontal *foramen* (present)
4. *coronal ossicle* (P)
5. *bregmatic* bone (p)
6. *Sagittal ossicles* (p)
7. parietal foramen (p)
8. *Ossicle* at the *lambda*
9. *wormian* bone
10. *lambdoid ossicles* (p)
11. *ossicle* of the *asterion*
12. *parietal* notch bone (p)
13. highest *nuchal* line (p)
14. posterior *condylar* canal (p)
15. anterior *condylar* canal (double)
16. *condylar facet* (double)
17. *pharyngeal tubercle* (p)
18. *precondylar tubercle* (p)
19. *foramen ovale* (incomplete)
20. *foramen spinosum* (open)
21. *foramen* of Huschke (p)
22. *mastoid foramen* (p)
23. *mastoid foramen* (p)
24. *auditory torus* (p)
25. *epipteric* bone (p)
26. *frontotemporal* suture
27. anterior *ethmoid foramen (exsutural)*
28. posterior *ethmoid foramen* (absent)
29. accessory *infra-orbital foramen* (p)
30. *palatinal torus* (p)
31. *mixillary torus* (p)
32. accessory larger *palatine foramen* (p)
33. small *palantine foramen* (p)
34. accessory lesser *palantine foramen* (p)
35. *zygomatico-facial foramen* (p)
36. accessory *zygomatico-facial foramen* (p)
37. third *maxillary* molar (p)
38. third *mandibular* molar (p)
39. *mandibular torus* (p)
40. accessory *foramen mentale* (p)

The definition of most of the given traits is found in Berry & Berry (1967).

Section 3
Examined Materials

Scheme of Description

As the archaeologists systemic classification differs from one to another, new running numbers were used in order to synchronize the archaeological with anthropological inventory.

1) Conservation of human skeletal remains and description of identifiable cranial and postcranial material
2) Kind of burial-after graveyard map and by personal communication of Mr. Msaytif Suleiman (Department of Antiquities)
3) Age determination (individual age)
4) Sex determination (probability of classification): indeterminate, probably male (female), most probably male (female), nearly without doubt male (female).
5) Metrical and epigenetical data -- (see catalogue of anatomical variants)

6) Osteological diseases
7) Constitutional description (e.g., body height)
8) Special remarks
9) Archaeological hints concerning sex and age.

Individual description of the human skeletal remains of Tell el-Mazar and numbering the materials.

No. 1: Square E/6; Area 15; Locus 11 (floor 3) (8-3-1977); Burial 3 (?)

1) Bones were conserved in a block of gypsum (0.65 x 0.30 m.) *Viscerocranium,* (further *vc):* right part of the *mandible,* partly dentitioned, left *ramus* and *corpus manidublae* with M_1, fragment of the *maxilla;* parts of the cranial base.
   Postcranial skeleton *(pcs):* parts of the vertebral column, *costae vertebrales in situ;* complete left *diaphysis* of the *humerus; ulna* and *radius* without *distal epiphyses.*
2) Crouching position
3) Dentition pattern of deciduous and permanent teeth were used in individual determining the skeleton of about 5 years old. Indixidnal age diagnosis was based on the length of the long bone *diaphyses* of about 4 years old. Total: late infant I
4) Indeterminate sex: Combination of the two categories places the skeleton as late infant I.
5) *diaphyseal* length of the left *humerus* 160 mm. left *radius* 117 mm. *clavicle.* (numbers are not given when no information is present). Sex determination: Female — according to maturation pattern (Sundick, 1977).
6) The fact that the dental age surpasses the skeletal age could be interpreted as an effect of malnutrition; after Sundick (1977) this also could be a hint for sexing. This maturation pattern would lead to the diagnosis of female.
9) Bronze gifts, three scarabs; following the hypothesis of the archaeologists, the crouching position is the typical burial of females. Sex determination; female — according to the presence of bronze gift, three scarabs and the crouching position (Yassine 1982).

No. 2: Square D/5, Burial 34

1) Bone fragments in blocks of gypsum *PCS* only; *fibula,* both *femora* which are crossed in an angle of 40°; *os ischium;* diverse fragments of the *vertebrae; distal* fragment of the right *radius,* some *phalanges,* situated in the thoracic region, fragments of the *oss sacrum.?*
2) Crouching position
3) No teeth preserved by *post mortem* loss; *proximal phalanges* without ossification of the *epiphyses* (14-16 years); no specific indicators preserved showing the age, probably age: Infant I
4) Sex is indeterminate.
5) Diameter below the *caput radii:* 7 mm.
9) Bronze earrings child; mother of this child possibly in burial 35.

No. 3: Bathtub, Burial 23 (Pl. CXVI, 1).

1) Incompete skeletal fragmets in a clay bathtub. *Cranium: neurocranium* (nc) — *glabella* of the *frontal* bone, both *ossa temporalia,* fragmented, *ossa parietalia, occipital* bone. *Vc:* right *zygomatic* bone; *processus zygomaticus* of the frontal bone; *alveolar* process of the *maxilla, mandible,* left *corpus and mentum);* about 12 complete teeth; *pcs:* shaft fragments of the *humerus,* the right *ulna* and *radius* and the right *femur;* 9 *metacarpals,* 17 *phalanges* and 4 *distal phalanges* of the fingers.
2) Crouching position in the clay bathtub.
3) Obliteration of the cranial sutures and the molar attrition (a mature/senile age).
4) The robustness, the *mastoid* process, the *processus frontalis ossis zygomaticus,* the *occiput* and the size of the teeth (masculine sex). Indifferent *mandible, glabella & arcus super ciliaris:* indifferent *protuberantia occipitalis externa;* orbital ridge (female ?).
5) *Proc. mastoideus* length 33 mm. *Proc. mastoideus* breadth 13 mm. Measures of the *pars petrosa* (Wahl and Henke, 1980): 11.75 mm; 6.0 mm.; 9.75 mm.
   Gnathion height 28 mm., height of the

corpus (foramen mentale) 27.5 mm.; nasal breadth - about 28 mm.
Humerus, maximum diameter at the *tuberositas deltoidea* 23.5 mm.
Sagittal diameter of the *caput femoris* 44 mm.
Epigenetic traits (see section 2).
1, 13, 21, 39 absent; 2, 19, 35, 37 present; 40 present- single 22 absent on both sides

6) The joints of the *phalanges* show slight *exostoses* and porous structures; *ankylosis* of the *distal radius* and the *carpilia* see plate CXVI, 1; healed fracture of the radius shaft with slight dislocation; tooth loss *intra vitam* (Schumacher and Schmidt, 1976): 3.2; 1.2; 2.2; 2.4; 2.5 The mandible shows advanced *paradentosis,* at least 5 teeth with carries at the crown or the neck
7) Tuberosities point out to a medium robustness of the skeleton
8) *Ligamentum mentale* highly ossified (4.3 mm.); at the *squama occdpitalis,* there are two *exostoses* on the *lamina externa* (2.0 mm.) above and below the *linea nuchae.*
9) Pearl *(careol),* glass-metal, bronze earrings; additions are of unspecific; child.

No. 4: Square D/3, Burial 76 (Pl. CXVI, 2-3).

1) The skeletal remains were put on grass and pieces of the skull and long bones were preserved with glue, i.e., they were badly preserved and damaged. *Cranium:* nc frontal bone with orbital ridge; both *petrous* portions; *vc-zygomatic* bone, *mandible* (right *corpus* with broken teeth) *pcs-distal epiphyses* of the *humeri; proximal ephyses* and shafts of the *radius* and *ulna* of both sides; *phalanges* of the fingers; fragments of the right *scapula; manubrium sterni; clavicle*-ribs- and vertebra-fragments.
2) Crouching position.
3) Progressive ossification of the cranial sutures; very low attrition of the molars; no intravital tooth loss; slight degenerative alteration of vertebral bodies (young adult)
4) Sex determination: male orbital ridge; *fossa genioglossi; corpus* of the *mandible; zygomatic* bone; *mastoid* process; *trochlea; manubrium sterni;* total robustness and the tuberoisities of the long bones.
5) *Mastoid* process - length 34 mm.
Chin height *(foramen mentale)* 33 mm.
Corpus breadth of the *mandible* (M_1) *petrous* portion Rt, side 16 mm.
Thickness of the *parietal* bone 7-8 mm.
Tibia, sagittal diameter, *foramen* nutrition right: 38 mm. left: 35 mm.
Transverse diameter, *foramen* nutrition right: 25 mm. left: 23 mm.
Patella, height 36.5 mm.
Patella, sagittal diameter 29 mm.
Epigenetic traits: 21, 35 absent; 11 right side present; 40 single.
6) *Cribra orbitalia* at the right *tectum orbitum* (Pl. CXVI, 2) (Hengen 1971); *Osteochondrosis vertebrae* of the *lumbal* spine.
7) Relatively robust: very prominent; *Linea aspera.*
8) Crouching position (female)

No. 5: Square C/3: 445-1979; Burial 78

1) Cranium: *nc* -fragments of the frontal bone, *parietal* and *occipital,* both petrous portion and *occipital* bone *pcs - humerus* - right and left side, *distal epiphyses; radius-proximal,* right side; *distal ulna - proximal* left side; *clavicle, scapula* (right), *metacarpalia;* some *phalanges* of the fingers; total cervical column;
2) Crouching position.
3) Suture ossification: early mature; detention (molar attrition); late adult--about 40 years.
4) The chin and the *zygomatic* bone tends to be masculine; *glabella* and *arcus superciliaris* little developed (grade 1); postcranial skeleton *gracile;* (male ?)
5) Chin height - 34 mm.
Thickness of the *neurocranial* bones - 7 mm.
Petrous measurements: 14.6 mm.; 7.7 mm.; 7.55 m.; (right side) 14.6 mm.; 7.3 mm.; 8.8 m. (left side)
Diameter of the *capitulum radius* 20 mm.
Condyle of the mandible - breadth right

side 22 left side 18.5 mm. depth right side 10. left side 10 mm.
Transverse diameter of the *dens axis* 9.5 mm.
Sagittal diameter of the *dens axis* 11. 5 mm.
Epigenetic traits: *Fossa olecrani*
7 present on the right side
35 present; 40 single; 3 absent

6) Mental *foramen* enlarged (diameter 5.7 mm.)
Osteochondrosis vertebrae - cervical column.
Slight *paradontosis* of the frontal *alveolar* processes of the *maxilla* Schmort's nodules.
Hypertrophic spondylarthritis (cervical vertebra No. 4) (Pl. CXVI, 3).
7) More *gracile;* developed tuberosities midling.
8) Bronze additions; crouching position-female, child.

No. 6: Square D/7, Burial 53.2 Disarticulated Child Burial

1) Brown coloured skeletal remains
Cranium: incompletely preserved; *mandible:* present *pcs:* all long bones except *radii,* ribs *claviculae, scapulae* were preserved.
Teeth: crowns of the *deciduous* teeth i^1, i^2; 3 frontal teeth of the lower dentition are molar & canine.
2) Crouching position.
3) *Symphysis* of the *mandible:* not ossified
Dental status: *neonatus* ± 2 months (Fazekas & Kosa, 1978)
4) Indeterminate Sex
5) Length of bones *(diaphysis* lengths) right-left

Humerus	*65.5*	*65*	mm.
Ulna	62	62	mm.
Femur	73.5	73.5	mm.
Tibia	65	64.5	mm.
Fibula	61	61	mm.

6) Both *radii* absent
9) Two bronze foot-rings; Female by reason of squatting position.

No. 7: Square C/4, Burial 51, 2.4. 1978; Locus 4

1) Very little material distributed in three parts; frontal fragments *caput femoris* and parts of a *vertebra corpus* of the thoracic or lumbar part of the column.
2) Stretching position.
3) The ossification of the *proximal femoral diaphysis* and *epiphysis* indicates an age more than 19 years adult or old individual.
4) The thickness of the cranial bones and the robustness of the *femoral* head indicate: probably male.
5) Thickness of the cranial bones; 8.2 mm.
Diameter of the *caput femoris;* 46.5 mm.
7) Robust - diagnosed from the long bone.
8) Possibly parts of a skeleton which is described under another running number.
9) No additions; male as indicated by the kind of the burial.

No. 8: Square E/3 - No. 448 (?) - 1979, Burial 84

1) Highly destroyed skeletal remains
Cranium: Parts of the *frontal, parietal* and *temporal* bone, the maxilla and mandible; fragments of teeth 2.1; 2.3; 3.4.
Postcranial: humerus, radius, ulna, and *femur.*
2) Obliteration of the cranial sutures; tooth abrasion: *early* mature.

3) Male	indifferent	Female
Mastoid process	*Arcus/glabella*	General
Orbital ridge	Chin	robustness
	Tooth size	

Total: probably male
4) Thickness of the cranial bones 7.5 mm.
Mastoid process - height 30 mm.
Mastoid process - breadth 11 mm.
Transverse diameter of the *diaphysis* of the *radius* 14 mm.
Transverse diameter of the *proximal femur* shaft 26.5 mm.
Sagittal diameter of the *proximal femur* shaft 26.5 mm.
Epigenetic traits: 2 absent; 3 present on both sides.
5) Abrasion of the teeth markedly different

6) *PCS gracile,* only small stature.

No. 9: Square D3, Burial 79

1) *Cranium:* Frontal bone, *parietal, occipital* and *temporal* bones, *maxilla* and *mandible;* teeth: 2.4; 3.3
   PCS: Lumbar vertebrae, pelvis *(acetabulum);* long bones- *ulna, radius, femur, & tibia; Tarsalia - talus, & oslcuneus; matatarsalia*
2) Crouching position
3) Diagnosis of the cranial sutures: mature-senile. Deformed *spondylosis,* grade 2 indicates a late mature age.
4) Robustness and size of the caput and *collum femoris* as well as the trochanter major; tooth size; petrous portion and *mastoid* process indicate most probably male sex.
5) Petrous portion: 13.3 mm.; 6.0 mm.; 8.25 mm.; nasal breadth 26 mm.
   Mastoid process height 36 mm.; breadth 11 m.
   Thickness of the cranial bones
   Femur circumference of the midth of *diaphysis* 96 mm.
   Transverse diameter of the *collum* 33.5 mm.
   Sagittal diameter of the *collum* 26 mm.
   Transverse diameter of the *proximal* shaft 35 mm.
   Sagittal diameter of the *proximal* shaft 25.5 mm.
   Transverse diameter of te *caput femoris* 45 mm.
   Circumference of the *caput femoris* 153 mm.
   Epigenetic traits 1 absent; 7 present on the left side
6) Right upper canine; abscess *labial cavity.*
   Spondylosis deformed, grade 2.
   Hypoplasia of teeth.
7) Robust - very robust, strong attachments of the muscles; robust joints.
8) No additions; female as indicate by the kind of burial.

No. 10: Square F/8; Area G 13.4. 1978; Burial 11? Tell 341

1) *Cranium: frontal, parietal* and *temporal* bones (incl. petrous portion) *Deciduous teeth: 2.1; 2.6; 2.7*
   PCS: Complete long bones of the upper extremity
   Fracture lower extremity, ribs and parts of the vertebral column were preserved; bones of the pelvis; foot and hand bones
3) *Epiphyses* of the long bones were not ossified; dental status 6 years cervical *vertebrae* show ossification of *arcus* and *corpus vertebrae; pubis* and *ischium* are not already fused. Age after length of the *diaphyses:* Max. 3.5 - 4 years
4) Sex indeterminate
5) *Diaphysis* of the *humerus* 14.5 cm.
   Diaphysis of the *radius* 10.7 cm.
   Diaphysis of the *ulna* 12.2 cm.
   Length of the *clavicle* 8 cm.
6) The dental age surpasses the skeletal age (See no. 1)
7) Animal bones (goat/sheep?)

No. 11: Square Ø2 7.7. 1979; Burial 82; Tell 292

1) *Cranium: Frontial, parietal* and fragments of *temporal bone Maxilla, mandible* with teeth fragments
   PCS: 2nd thoracic vertebrae; humerus, ulna, femur, tibia Humerus, clavicle, and metatarsalia
3) Obliteration of the cranial suture indicates an age about 50 years

4) Male *In between* *Fema*
Mastoid process *Glabella/arcus* Robu
Thickness of the Cranial bones
Muscle attachments
Chin region
Joints
Total: probably male

5) *Dens epistrophei* transverse diameter 11.5 mm. height 36.5 mm.
   sagittal diameter 11.0 mm.
   Bimental breadth of the *mandible* 39 mm.
   Femur: Proximal transverse diameter 30 mm.
   Epigenetic trait 40-single
6) The mandible shows a heavy atrophy in the frontal alveolar arch, and total loss of teeth (by infection ?)
7) Postcranial bones are more *gracile* than robust
9) Pottery, bronze rings, scarabs; sex?

No. 12: Square A/7 Locus 5 B-40 24.3. 77;

Tell 349

1) *Cranium:* fragments of the *frontal, parietal, occipital* bones, *maxilla* and *mandible*
   PCS: shoulder girdle *(scapula* and *clavicle),* ribs, *vertebrae,* shafts of the *humerus and femur*
3) Dentition indicates an age (about 6 months 3 months)
   Skeletal maturation (long bones): 0.2-0.4 years
4) Indeterminate sex
5) Length of the *humerus diaphysis* 90 mm.
   Scapula-lateral height 40 mm.
   Transverse breadth 35 mm.
   Clavicle 46 mm.
6) Skeletal maturation indicates a lower age than the dentition (See also nos. 1 & 10)

No. 13: Square ♀2 286 7.7. 1979; Burial 83

1) *Cranium: Frontal, parietal, temporal, occipital* bones *maxilla* and *mandible*
   PCS: Clavicle, vertebrae; right and left *acetabulum* of the pelvic girdle & *os ischium*
   Long bones: *humerus, radius, ulna, femur, tibia, tarsalia, metatarsalia* and *phalanges*
2) Crouching position
3) The *humerus* is distally ossified and the femur proximally indicates an age; older than 19 years
   The proximal femur shows a *spongiosa* structure like grade 2 following the scheme of Acsadi & Nemeskeri (1970): early adult: 20-29 years
4) Most probably male, as indicated by the following markers: *Incisura ischiadica* small; *sulcus praeauricularis* absent; are compose; *mastoid* process; gonial region; general robustness dental size; and orbital ridge shape
5) diameter of the *capitulum radii* 23 mm.
   Proximal transverse diameter of the *femur* 32.5 mm.
   Proximal *sagittal* diameter of the *femur* 24.5 mm.
   Transverse diameter of the *caput femoris* 44 mm.
   Petrous portion 11.6 mm.; 6.2 mm.; 8.7 mm.
   Epigenetic traits-7-on both sides
6) Vertebrae have slight *osteochondrosis*
7) Robust constitution
8) Animal bones
9) Silver-ring, earrings; pottery; as idicated by the squatting position is thought to be female

No. 14: Square ♀6 Locus 1 1.4. 1977; Burial 08

1) Fragments of 4 little bones *(phalanges* II, long bone fragment)
3) Phalanges show *proximal* ossification of the *epiphyses;* fragments of the long bones indicate an adult or old age.
4) Sex is indeterminate
6) Scanty material, scattered material?
7) Medium robustness to *gracile*
9) "Finger and animal bones", sex?

No. 15: F1 387 Tell 20.4. 1978..

1) Highly crumbled material; human and animal bones mixed
3) Distal ossification of the *femoral epiphysis* older than 19 years
4) Size of the *patella,* robustness of the pubic bone and general robustness indicate most probably male
5) Epicondyle breadth of the *femur* 86 mm.

patella height	42 mm.
Patella sagittal diameter	22 mm.
Talus length	61 mm.

7) Very robust and large bones medium, muscle attachments
8) Animal bones are of goats and sheeps

No. 16: Square ♂3 283 1979; Burial 72

1) Not identifiable small cranial fragments, *mandible* fragments
   PCS: Humerus, radius, ulna and *femur*
2) Crouching position
3) *Spongiosa* structure of the *proximal femur,* no intravital tooth loss between 3.1-3.7: adult/mature
4) Probably male as shown by the robustness of the *linea aspera,* dental size of general robustness
   The fact that the diagnosis is mainly based on the robustness of the *femoral* weakens the classification as male, because the individual is expected to be a dancer by the archaeologists
5) Transverse diameter of the *femur* head

46 mm.
6) Periodontal disease
7) Very robust constitution
9) Several foot-rings, dancer, female

No. 17: Square A7 8? Locus 2 24.3. 1977 421 Tell
1) Human and animal bones are mixed
PCS: 4 vertebral bodies and 2 vertebral arches; *Ulna, radius* (right and left) *femur* and 3 *phalanges*
3) No dental remains, *diaphyses* of the long bones indicate an age of 0.4-0.6 years (possibly discrepancy to the dental age)
4) Sex is indeterminate
5) Greatest length of the *diaphysis-radius* 66 mm., *ulna* 74 mm.
6) *Femur* shaft shows a *proximal porous compacta* and an inflammatory disease
8) Calcaneus of a cow and several other animal bones

No. 18: Square D3 285 1979: Burial 80
1) *Cranium: Frontal, parietal, temporal* bones, *maxilla* and *mandible*
PCS: Right and left *humerus, radius, femur, tibia* and fibula; hip bone *(acetabulum), vertebrae,* ribs, *calvicle metatarsalia* and *phalanges* of the foot.
3) Cranial sutures still open; dental abrasion indicates an age of around 20 years (after Brothwell, 1972)
The median part of the *clavicle* is not ossified (23-26 years)
Crista iliaca is ossified (19-22 years); Proximal *femur* is ossified (more than 19 years)
No intravital tooth loss: early adult (20-21 years)
4) *Glabella* and *arcus superciliaris* (grade-2)
Mandible small as well as petrous portion;
Probably female
5) Petrous portion 11.2 mm., 6.8 mm., 7.6 mm.
Nasal breadth (Probably 28 mm.)
Epigenetic traits: 38 present
Distortion of the molar-2.5 distortion
9) Female as indicated by the crouching position and crossed arms.

No. 19: Square E8 Locus 2 Burial
1) Only several bones, *phalanges, carpalia* of the right hand, and *patella*
2) Stretching position
3) Adult or old
4) Sex is indeterminate
7) Robustness: average
8) Bones belong to skeleton No. 56
9) Male as shown by the kind of burial

No. 20: Square E2 Locus 81 299 1979 Burial
1) Incomplete, fragmented material
Teeth: 6 permanent teeth or parts of it (1 premolar and lower incisor), and 2 deciduous teeth
PCS: Axis, ribs, *proximal radius, clavicle, femur* and *fibula*
2) Crouching position
3) Dental diagnosis indicates an age of 3 years (infant I), *Corpus vertebrae* are not already ossified
4) Sex is indeterminate
9) Child; as indicated by the kind of burial-female

No. 21: Square E4 26.4. 1978 129; Burial 48
1) Approximately damaged bones; maximum size-unidentified bones of the skull and long bones (shafts)
3) General impression: infant I
4) Sex is indeterminate
9) Bronze addition, child, female

No. 22: Square C7 16.4. 1978, 6 Cemetery A; Burial 52
1) Few bones of human and animal skeletons
Skull fragments and parts of the pelvic girdle
2) Stretching position
3) Cranial sutures, ossification of the *iliac* crests of the hip bones early adult
4) Probably male as indicated by the thickness of the skull bones (misclassification is highly probable).
8) Animal bones, *distal phalanges* of horned cattle
9) Arrow head, spoon; male as indicated by the kind of the burial

No. 23 Square C2 ? Tell
1) One bone fragment of the *zygomatic*

arch
3) At least juvenile
4) Indeterminate Sex
7) *Gracile*
8) Scattered material, found beside animal bones

No. 24: Square H/7 Locus 2 26.2. 1977; Tell 138

1) Only dental remains of a human dentition
   Permanent teeth: 2 incisors, 3 premolars, and 4 molars
3) Teeth without any abrasion: about 20 years (late juvenile/early adult)
4) Size of the teeth indicates: possibly male
6) *Hypoplasia* of teeth

No. 25: Square F/6 Basket 2 8.4 1977; Burial 31

1) One bone or a child and *diaphysis* of the *tibia*
3) Determination of age by the length of the shaft: 2 months
4) Indeterminate Sex
5) Length of the *tibia* shaft 61 mm.
8) Possibly it belongs to burial no. 53

No. 26: Square E/6 28.3. 1977 100; Near Burial 1

1) Human and animal bones; only cranial fragments; *frontal* bone and *parietal* bones
2) Stretching position
3) As indicated by the robustness of the bones: adult or old
4) The thickness of the bones indicates a masculine sex (?)
5) Thickness of the cranial bones 9 mm.
8) Belongs to No. 54.

No. 27: Square D/3 1979 282; Burial 67

1) *Cranium:* neurocranial bones present; *mandible* and teeth
   PCS: Humerus, radius, 4 *phalanges,* and *femur*
2) Crouching position
3) Cranial suture closure and tooth abrasion indicate a mature/senile age
4) Most probably male as indicated by the extreme robustness of the *mastoid* process, orbital ridge curved, massive mandibula and *occipital* bone
5) Length of the *mastoid* process 35 mm. Breadth of the *mastoid* process 14.5 mm.
6) The third molar shows no attrition possible as shown of not having an antagonist, while the other teeth show a high degree of wear
7) Cranial bones very robust and not diagnosable *postcranium*
8) Chin is very prominent *(trignum mentale)*
9) Scarabs, bronze seal; female as indicated by the kind of burial

No. 28: Square G/1 Locus 5 Basket 13 20.2. 1979 Tell 314

1) Only postcranial fragments: ribs, *vertebrae, metacarpalia* and *tarsalia, phalanges, scapula, ulna* (incomplete). *Femur,* and parts of the pelvic girdle *(acetabula, sacrum)*
3) The *sacrum, femur spongiosa* and the *vertebrae* indicate an adult age (about 30 years)
4) Very robust hip bone and *femur* head indicate most probably male
5) *Ulna*

Maximal length	259 mm.
Physiological length	235 mm.
Circumference	31 mm.
Dorso-Volar diameter	14 mm.
Transverse diameter	14 mm.
Diameter of the midth	17.8 mm.
Femur, diameter of the *femur* head	48 mm.

No. 29: Square D/3 288 1979: Burial 66

1(*Cranium: frontal, parietal, occipital* bone, *zygomatic* bone, *mandible;* 8 teeth: 7 incisors, canines, premolars and 1 molar
   PCS: Clavicle, radius, femur, tibia and *fibula*
2) Molar attrition (Brothwell, 1972 grade ~~3~~1), cranial suture clusure: late adult
3) Weak expression of the protuberance of the occipital bone, chin *gracile, glabella* flat, orbital ridge sharp: probably female
4) Chin height 25 mm., thickness of the cranial bones 4.5 mm.
5) Very *gracile/gracile* constitution
6) Iron blade

No. 30: Square E/3 446 1979; Burial 77

1) *Cranium: frontal* bone, *parietal* bone and *occipital* bone
   PCS: left *humerus, radius, ulna;* ribs and *clavicle*
2) Suture obliteration: adult
3) Probably male as indicated by the general robustness the protuberance of the *occiput* (grade 2) and the thickness of the cranial bones
4) Thickness of the parietal bone 8-9 mm.
5) One very small and thin rib
6) Robust constitution of the preserved bones
7) Two bronze finger-rings; sex?

No. 31: Square D/3 1979 447; Burial 64 (Pl. CXVIII, 1)

1) *Cranium:* Neurocranium *occipital* the vertex-portion-plate preserved; *mandible,* 1 tooth
   PCS: Scapula, ribs, *phalanges,* and *femur*
2) Crouching position
3) Obliteration of the cranial sutures: adult (about 30 years)
4) Most probably male-as indicated by the tooth size, *occipital* bone protuberance, *linea nuchae,* and thickness of the cranial bones
5) *Femur* - proximal transverse diameter 34 mm.
   proximal *sagittal* diameter 23 mm.
   Epigenetic traits: 7 absent on both sides
6) The *nuchal* plane is sharply broken-down towards the *squama;* very thick bones.
7) Very robust *linea aspera*
8) Two trephine holes in the *lambda* suture of the *occiput,* and one in the left part of the lower *squama*
9) Bronze additions and pottery; female as indicated by crouching position

No. 32: Square C/3 Locus 65 287; Burial

1) *Cranium: frontal* and, *occipital* fragments, *mandible* and 1 molar several ribs and *phalanges, clavicle, humerus, ulna, tibia* and *femur*
2) Stretching position
3) Tooth abrasion and thickness of the neurocranium: early adult
4) Tooth size, very robust constitution, orbital ridge, and protuberance of the external *occiput* (1-2): most probably male
5) *Femur*-transverse diameter of the shaft 35 mm.
   Sagittal diameter of the shaft 31 mm.
   Radius-Transverse diameter of the shaft 17 mm.
   Sagittal diameter of the shaft 13.5 mm.
   Thickness of the *parietal* bone 7 mm.
6) Probably very tall individual: robust constitution
9) Stretching position: male

No. 33: Square D/3 449 1979; Burial 68 (Pl. CXIX).

1) *Cranium:* Neurocranium, and *mandible*
   PCS: vertebrae, ribs, several *phalanges, metatarsalia* and *carpalia, humerus, ulna, radius, femur* and *tibia*
2) Crouching position
3) Maturation of the skeleton and cranial suture closure: adult
5) Seems to be female: bones are *gracile,* no *preauricular sulcus, occipital* bone protuberance (grade 1)
6) Thickness of the cranial bones *(parietals):* 7.5 mm.
   Breadth of the *condylar* process of the *mandible* 19.5 mm.
   Minimal circumference of the *humerus* 58 mm.
   Epicondylar breadth of the *radius* 28 mm.
   Diameter of the *ulna* 14.5 mm.
   Transverse diameter of the *dens epistrophei* 8.5 mm.
   Sagittal diameter of the *dens epistrophei* 11.0 m.
7) *Phalanx* of the I. toe shows osteoarthritis
   Ribs with *osteoarthrosis costovertebralis*
   Vertebrae with *osteochondrosis*
8) Very *gracile* bones
9) Pottery, scarabs, female as idicated by crouching position

No. 34: Square C/3 1979 284: Burial 70

1) *Cranium:* partly preserved fragments of the *neuro*-and *splanchnocranium* 1 tooth.

PCS: Vertebrae, scapula, clavicle, humerus, ulna, radius, femur, tibia and *talus*

2) Crouching position
3) No obliteration of the sutures of the skull; molar attrition (after Brothwell, 1972) grade 2; proximal *tibia* is not ossified, apex of the P^3 still open: juvenile
4) Dental size, robustness of the long bones indicates: male
5) Transverse diameter of the *dens epistrophei* 9.5 mm.
   Sagittal diameter of the *dens epistrophei* 11.1 mm.
   Diameter of the *capitulum radii* 22 mm.
   Thickness of the *parietal* bone 7 mm.
   Breadth of the codyle of the *talus* 32 mm.
7) Very robust constitution on comparison with the age
9) Earrings, female as shown by the kind of the burial

No. 35: Burial?

1) *Cranium: parietal* bones, left petrous portion, and two M_3 (?)
   PCS: Atlas and axis; *phalanges* of the fingers, the toes, and *distal ulna;* both *femora, tibia* and *fibula*
3) Dentition: length of the long bones, ossification of the *femoral epiphyses* and the *phalanges,* and the *phalanges indicate an age about 15-16 years: juvenile*
4) Indeterminate
5) Transverse diameter of the *dens epistrophei* 11 mm.
   Sagittal diameter of the *dens epistrophei* 10 mm.
   Parietal arch 132 mm.
   Bregma-lambda-chord 110 mm.
   Maximum length of the *diaphysis, femur* 38.5 mm.
   tibia 31.5 mm.
   fibula 30.5 mm.
7) Very tall individual with respect to its age
8) Probaby belongs to skeleton No. 36

No. 36 (?)

1) *PCS:* Only postcranial fragments were preserved; *vertebrae,* ribs, *scapula,* pelvic bones, *phalanges, tarsalia, radius, ulna patellae, femora, proximal tibia* and *sacrum*
3) Sacral vertebrae not already ossified; ossifiestion of the long bones has not started; vertebral *epiphysis* opens and pelvic bones are not completely fused.
4) Most probably male as indicated by the greater *sciatic* notch and the arc compose.
5) Diameter of the head of the *radius* 190 mm.
   Length of the *diaphysis* of the *radius ulna* 212 m.
   Maximum length of the *humerus* 280 mm.
   Height of the hip bone 190 mm.
   Height of the *iliac* bone 86 mm.
   Breadth of the *iliac* bone 76 mm.
7) Relatively tall in comparison with his age.
9) Probably belongs to No. 35.

No. 37: Burial 19

1) Very badly preserved material in spite of the treatment with glue *Cranium: parietal, occipital* and *temporal* fragments
   PCS: Ribs, *vertebrae, carpalia, phalanges,* fragments of the pelvic girdle; right and left *humerus* and *ulna, radius*
2) Crouching position
3) Cranial suture closure indicates a senile (early senile) age
4) Probably female: The *mastoid* process is relatively robust but the *PCS* is more *gracile*
5) Proximal transverse diameter of the *femur* shaft 29 mm.
   Proximal *sagittal* diameter of the *femur* shaft 24 mm.
   Breadth of the *epicondyles* 58 m.
   Thickness of the *parietal* bone 8 mm.
7) Postcranial skeleton is more *gracile* than robust
9) Female as indicated by the type of the burial

No. 38: ?

1) Few pieces of the skull are not exactly identified • 1 molar of the permanent dentition

3) Attrition of the upper M^2 (Brothwell, 1972-grade 2) and sutures of the *cranium* indicate an age about 30-35 years
4) Indeterminate sex
5) Maximum thickness of the cranial bones is 8 mm.
8) Probably belongs to No. 40.

No. 39: ?

1) *PCS* only: ribs, *sternum; vertebrae; humerus* and *radius* (both sides); *ulna; femur, tibia* and *fibula* (both sides); *tarsalia, metatarsalia,* and *phalanges*
2) Status of the skeletal maturation (long bones): late juvenile (18 years)
3) Most probably male as indicated by the robustness and size of the *PCS*
4) Epicondylar breadth of the *humerus* (right/left) 61 mm. /61 mm.
   Smallest circumference of the shaft 60 mm./59 mm.
   Diameter of the head of the *radius* 22 mm / 23 mm.
   Epiocondylar breadth of the *radius* 32 mm.
   Transverse and *sagittal* diameter of the shaft 15 mm./10 mm.
   Transvese and *sagittal* diameter of the ulna (width of the shaft) 15.5 mm./12 mm.
   Proximal transverse diameter of the *femur diaphysis* 30 mm.
   Proximal sagittal diameter of the *femur diaphysis* 24 mm.
   Diameter of the width of the *femur* shaft 27 mm.
   Diameter of the *femoral* head *(sagittal)* 45 mm.
   Maximum length of the *tibia* 375 mm.
   Physiological length of the *tibia* 360 mm.
   Smallest circumference of the shaft 68 mm.
   Sagittal diameter *(foramen nutritium)* 33 mm,
   Transverse diameter *(foramen nutritium)* 24 mm.
7) Very robust constitution, marked muscle attachments, body slight around 160 cm.
8) Since the material is very well-preserved, one can expect, that the skull is also preserved in the material

No. 40: Burial?

1) *Cranium:* frontal, *parietal* and *occipital* bone as well as temporal bones, *maxilla;* and 15 teeth
   PCS: Ribs, *vertebrae, clavicle,* hip bone, long bones of the upper extremity, *femur* and foot bones
3) Molar attrition and suture obliteration: adult (25-35 years)
4) Probably female as indicated by the small *mastoid* process, the *orbital* ridge shape and the general *gracility*
5) Thickness of the *parietal* bone 7.5 mm.
   Diameter of the *femoral* head 49 mm.
6) *Gracile* constitution
7) Animal bones, born; probably belong to skeleton No. 38

No. 41: Nos. 11/11a (?)

1) Damaged as a result of treatment with glue; no cranial fragments
   PCS: Long bones of the upper and lower extremities; *sacrum; vertebrae,* ribs, *phalanges* and *metatarsalia*
2) Burial 11 - Stretching position
3) Skeletal maturation indicates an age about 15-16 years (juvenile)
4) Indeterminate Sex
5) *Radius;* head diameter 21 mm; relatively robust
6) *Spina bifida*
7) The individual is very robust in relation to his age
8) Almost belongs to No. 51

No. 42: (?)

1) *Cranium:* Very small fragments of the skull and *mandible,* 1 molar
   PCS: Ribs, *vertebrae, distal humerus, femur, metatarsalia* and *phalanges*
3) Molar attrition indicates an adult age
4) *Mandible* and *patella* robust: probably male
7) Relatively robust constitution
8) Most probably belongs to No. 43.

No. 43: (?)

1) *Cranium: parietal* bone, two dental fragments
   PCS: Scapula, ribs, *vertebrae, phalanges, radius* and *femur*
3) Molar attrition and skeletal maturation

indicate an early adult individual of age (about 25 years)
4) *Occipital* plane markedly profiled: probably male
5) Transverse diameter of the *dens epistrophei* 10 mm.
Sagittal diameter of the *dens epistrophei* 13 mm.
Thickness of the *parietal* bone 7 mm.
Diameter of the *radius* head 21 mm.
8) Bones are relatively robust
9) Most probably belongs to No. 42

No. 44: ? - Burial 17 (see also running No. 45) ♂6

1) *Cranium:* petrous portion of the right and left side; *mandible,* and 5 teeth
PCS: Scapula, ribs, *vertebrae,* bones of the pelvic girdle (*ischium, acetabulum), humerus, radius, phalanges, femur, patella, metacarpalia* and-*tarsalia*
2) Stretching position
3) No clear attrition of the teeth; *(radius epiphysis* ossified: early adult (25-30 years)
4) Most probably female as indicated by the large *patella,* the presence of the *sulcus praeauricularis,* the U-shaped *sciatic* notch, the shape of the hip bone and the weak modelled chin
5) Petrous portion, left: 12, 5; 8.25 mm., 12, 1; 8.0 mm.; diameter of the *patella* 21 mm.
Epicondylar breadth of the *radius* 31 mm.
7) Robustness: average
8) Most probably belongs to skeleton No. 45

No. 45: Square ♂6 1977 Burial 17
1) No cranial fragments were preserved
PCS: vertebral column, third *thoracic vertebra* to the *lumbar vertebra,* ribs, *sacrum, acetabulum* of the hip bone, *sacrum, humerus, radius, ulna, femur,* and *tarsalia*
2) Stretching position
3) Proximal *spongiosa* of the femur (grade I); ossification of the *distal epiphysis* of the *humerus* and the *proximal epiphysis* of the *ulna* and the *diaphyses* indicate: an (early) adult age
4) Most probably female: though the skeleton is relatively robust, the sex specific features of the pelvis *(sulcus praeauricularis)* which are compose indicate a female sex
5) Transverse diameter of the *dens epistrophei* 9 mm.
Sagittal diameter of the *dens epistrophei* 12 mm.
Epicondylar breadth of the *humerus* 59 mm.
Proximal transverse diameter of the *femur* 34 mm.
Proximal sagittal diameter of the *femur* 26 mm.
Diameter of the *femur* head 47 mm.
6) Slight impression of the vertebrate bodies (Schmorl's nodules)
7) Athletic constitution
8) If the diagnosis was based on the postcranial skeleton, there is no doubt that the individual would be of male sex; the skeletal remains belong to the Nos. 44 & 59. Animal bones were found with this skeleton.
9) An arrowhead was found in the neck (killed ?), stretching position indicates a masculine sex

No. 45: Square D/7 Burial 21
1) *Cranium:* Parts of the *frontal, parietal, temporal* and *occipital* bones, the *mandible* and *maxilla,* 4 teeth
PCS: Vertbrae, ribs, *humerus, ulna, radius* and *femur*
2) Stretching position
3) Molar attrition and the ossified *hyoid* bone indicate a mature age
4) Most probably male as indicated by the very marked protuberance of the *occiput* (grade 4 after Broca), the *orbital* ridge, the *arcus superciliaris,* the jaw bow, temporal line and the *processus mastoideus* as well as the petrous portion
5) Petrous portion 13.2 mm., 7.2 mm., 8.3 mm.
Height of the *mastoid* process 35 mm.
Breadth of the *mastoid* process 15.5 mm.
Proximal transverse diameter of the *femur* 31.5 mm.
Proximal *sagittal* diameter of the *femur* 31. 0 mm.

9) Male, as indicated by the position of bronze plate

No. 47: Square D/6 Burial 6

1) *Cranium: parietal, temporal* and *occipital* bone, and 4 teeth
   PCS: Vertebrae, ribs, pelvis (acetabula), humerus, femur and *phalanges*
2) Stretching position
3) Molar attrition (3+, Brothwell, 1972), M_3 present, cranial suture pattern: late adult
4) Very large *mastoid* process, *occipital* plane robust, *humerus* large: Most probably male
5) Thickness of the *parietal* bone 6.5 mm.
   Height of the *mastoid* process 39 mm.
   Breadth of the *mastoid* process 12 mm.
   Proximal transverse diameter of the *femur* 32 mm.
   Proximal *sagittal* diameter of the *femur* 29 mm.
6) *Osteochondrosis vertebrae* of the cervical vertebral bodies
7) Athletic constitution, very robust
9) Arrowhead between the *femora,* bronze-axe, seal: male

No. 48: Burial (?)

1) Highly fragmented material: fragments of the *parietal, temporal* and *occipital* bones; *metatarsal* bone
3) Ossified *larynx* and cranial suture obliteration indicate a mature age (45 years ±).
4) Very robust and large size of skull fragments: most probably male
5) Thickness of the *parietal* bone 10 mm.

No. 49: Burial (?)

1) *Cranium: Neurocranial* bones preserved but fractured *zygomatic arch, maxilla* and *mandibula* preserved 13 teeth
   PCS: Vertebrae, ribs, pelvis, *scapula,* all four extremities, hand and foot bones
3) Molar attrition, cranial suture obliteration and *spongine* structure of the *humerus,* no intravital dental loss: adult (about 25 years)
4) Those bones under research show no sex relevant features: indeterminate sex
5) Petrous portion right/left 13.1/12.7; 7.95/7.85; 10.4/9.7 mm.
   Thickness of the *parietal* bone 8 mm.
   Mastoid process height 34 mm.
   Ramus breadth of the *mandible* 29 mm.
   Chin height 23 mm.
   Bimental breadth 44 mm.
   Corpus height *(foramen mentale)* 23 mm.
   Epicondylar breadth of the *radius* 29.5 mm.
   Sagittal diameter of the *patella* 19 mm.
   Transverse diameter of the *tibis* 21.5 mm.
   Sagittal diameter of the *tibia* 28 mm.
6) Flat processes *palatinus*

No. 50: Square D/6 Burial 37

1) *Neurocranial* bones, *mandibular* fragment and some teeth
2) Stretching position
3) Molar attrition (3+, Brothwell, 1972), M_3 present and not abrased; cranial stuture: adult (25-30 years)
4) Probably male as indicated by the massive *mandible* and the markedly modeled *gonial* region
5) *Orbital* height (approximately) 36 mm. orbital breadth (approximately) 39 mm.
   Thickness of the cranial bones 8 mm.
   Chin height 32 mm.
   Bimental breadth 49 mm.
   Thickness of the *mandible corpus* (M1) 14.5 mm.
   Petrous portion 11.8, 6.5; 8.4 mm.
7) Robust constitution
8) Blade of a knife, bronze needle
9) Bronze plate, pottery, "a big stone on the chest"; as indicated by the kind of the burial: male

*No. 51: Square E/6 10.5. 1977 Shaft Grave No. 1 III. Individual (*Pl. CXIII, 1-4)

1) *Cranium:* preserved by glue, almost complete skull, dentition also well preserved;
2) Shaft tomb, crouching position?
3) The eruption of the M_3 is not already completed; juvenile, 16 years
4) Chin is robust in relation to the individual age, orbital ridge smooth shaped: probably male
2) *Glabello-occipital* **length** 188 mm.

Maximum cranial breadth	134 mm.
Nasion-prosthion height	71 mm.
Nasal height	44 mm.
Nasal breadth	21 mm.
Facial height	120.5 mm.
Orbital height	38 mm.
Orbital breadth	38 mm.
Bimadillary breadth	84 mm.
Portion-bregma height	114 mm.
Ramus mandibula breadth (smallest)	32 mm.
Ramus-corpus-angle	123°

6) *Leptodolichomorphic* skull, *leptostaphylin* palate deep *fossa canina,* and slight overbite
8) "A snail was found in the oral cavity" Most probably belongs to No. 41

No. 52: Square E/5 Burial 10

1) Several broken pieces of the skull (neurocranium), 1 molar and a fractured clavicle
2) Crouching position
3) Cranial suture closure and molar attrition indicate a late adult or early mature age.
4) Sex is indeterminate: no specific sex traits are available.
5) Thickness of the *neurocranium (parietal* bone) 8 mm.
8) Most probably these skeletal remains belong to No. 62
9) The squatting position indicates: female

No. 53: SR 41 (?)

1) Skeletal remains in a block of gypsum: bones of the skeleton were preserved except the lower extremities below the knees.
   Cranium: Parietal bones, *occipital* bone and *mandible*
   PCS: Vertebrae, scapula, hip bone, humerus, radius, ulna and parts of the *femoral* bone.
3) Molar attrition and cranial suture closure idicate a late adult early mature age.
4) Probably female: as diagnosed from the chin region, the *occiput* and the long bones.
5) Left *humerus,* greatest length 295 mm.
   Body height by Bach (1965) 161 cm.
7) *Gracile* individual
8) A bronze and a bone needle were found near the shoulder girdle.

No. 54: Burial 1 (Pl. CXVI, 4)

1) *Cranium: Frontal, parietal* and *occipital* bone, *mandible,* and 7 teeth
   PCS: Scapula, ribs, hip bone, *metacarpalia* and-tarsalia, *ulna, femur* and *phalanges*
2) Stretching position
3) Dental and skeletal maturation indicate an early adult age
4) While the *occiput* is indifferent; the *mandible* is very robust, by teeth, the *ulna* and the petrous portion as well, probably male
5) Thickness of the *parietal* bone 6-7 mm.
   Mandible - corpus height *(foramen mentale)* 32 mm.
   breadth of the corpus M_2 19.4 mm.
   Petrous portion 13.85, 8.35, 10.8 mm.
6) Healed injury at the right *corpus* of the *mandible* (cut-injury,?)
7) Robustness: average
9) Female as indicated by the kind of the burial

No. 55: Square C/6 Burial 14

1) *Cranium:* only fractured material of the *neurocranium*
   PCS: Clavicle, phalanges, radius, femur and *fibula*
2) Stretching position
3) Skeletal maturation indicates age - adult or old
4) Probably female as indicated by the *gracility* of the bones and especially the *crista supramastoidea*
5) Petrous portion 12.06, 5.9, 8.7 mm.
   Thickness of the *parietal* bone 6 mm.
6) *Gracile* constitution
9) Male as indicated by the kind of burial

No. 56: Square E/6 Burial 2

1) The skull is only represented by a small *neurocranial* fragment
   PCS: Vertebrae, radius and *ulna, femur, tibia* and *fibula;* hand- and footbones
2) Stretching position
3) Skeletal maturation indicates an adult or old age
4) Sex is indeterminate
8) Belongs to No. 19 with a high probabil-

ity
9) Male as indicated by the kind of burial

No. 57: Square C/6 Burial 42 (Pl. CXVII, 2-3).
1) *Cranium:* Deformed *calvarium* treated with glue, preserved teeth
   PCS: Ribs, *humerus, femur, tibia* and fibula
2) Crouching position
3) All cranial sutures still open; slight attrition of the teeth indicate: early adult
4) Probably female because the *zygomatic* arch *(processes temporalis)* is very *gracile* as well as the *nuchal* plane and the teeth; and teeth are small
5) As the result of deformation no measurements could be taken
6) 4 trephine holes are seen in the right part of the *neurocranium*
7) Relatively robust postcranial skeleton
9) Female as indicated by the crouching position

No. 58: Square C/6 Burial 22 (Pl. CXVII, 1).
1) *Neurocranial* fragments were preserved with glue, bones deformed.
3) Cranial suture obliteration indicates an age of 30 to 40 years (adult)
4) Most probably male as indicated by the sex specific *neurocranial* features *(glabella, arcus superciliaris,* and *nuchal* plane)
5) Minimum frontal breadth 114 mm.
   Stephanial breadth 118.5 mm.
   Frontal chord 108.5 mm.
   Parietal chord 116 mm.
6) 12 trephine holes on the right side of the skull.

No. 59: Burial 17 C/6
1) Only some cranial fragments and two pieces of vertebral bodies were preserved
2) Stretching position
3) Suture closure indicates an adult age
4) Probably male as indicated by the *orbital* ridge shape, the marked robustness of the *zygomatic* process and the *nuchal* plane.
5) Thickness of the parietal bone 7 mm. Petrous portion, right side 17.0; 9.55; 10.55 mm.
7) Petrous portion hyperrobust as a result of pathological infection.
8) Bronze needle; most probably belongs to No. 45

No. 60: Square C/7 Burial 11
1) *PCS* only: *humerus tibia, phalanges*
2) Stretching position
3) Skeletal maturation and general robustness indicate an age of adult or old
4) Indeterminate Sex
7) *Gracile* constitution
9) Male as indicated by the kind of the burial

No. 61: Square E/6 Burial 4
1) *Cranium: Processus mastoideus, parietal* bone, *mandible,* and 6 teeth
   PCS: Humerus, ulna, radius, femur, ribs and *phalanges*
2) Stretching position
3) The crown of the M_3 is not already developed, *clavicle* is not already ossified: juvenile
4) Indeterminate Sex
5) The bones are very *gracile* compared with the teeth size.
9) Male as indicated by the kind of the burial

No. 62: Square E/5 Burial 10
1) *PCS:* Some fragments of the long bones
2) Crouching position
3) General impression: adult or old
4) No sex specific variables are diagnosable: sex is indeterminate
8) Animal bones; the human remains probably belong to No. 52

No. 63: Square E/6 Burial 3
1) *Cranium:* except for the mandible no bones are preserved; and 1 molar
   PCS: Long bones *(humerus, radius, ulna, femur, fibula,* ribs, hand and foot bones
2) Crouching position
3) Attrition of the molar; ossification of the *epi-* and *diaphyses:* early adult
4) With a high probability female as indicated by the *gracile* mandible and the very *gracile* long bones

5) *Mandible corpus* height (*foramen mentale)* 25 mm.
Mandible corpus breadth (M_2) 14 mm.
Diameter of the *radius* head 20 mm.
9) Female as indicated by the kind of the burial

No. 64: Square E/5 Burial 9? (Pl. CXVIII, 3)
1) Only a fragment of the *femur*
2) Stretching position
3) Adult or old
4) Sex is indeterminate
8) *In situ, tibial* fragments shows three trephine holes side by side
9) Male as indicated by the type of the burial

No. 65: Burial ?
1) Cranial fragments, only very small pieces
3) Obliteration of the cranial sutures indicates a late mature age
4) The robustness of the *nuchal* plane and the thickness of the cranial bones indicate a high probability of misclassification of a male sex
5) Thickness of the *parietal* bone 8.6 mm.
7) Robust constitution

No. 66: Burial ?
1) *Cranium: Neurocranial* fragments of the *parietals; mandible* and 2 molars
PCS: Several vertebral bodies (axis etc.), *clavicle, femur* and *phalanges* of the fingers
3) Molar attrition, cranial suture closure and *spondylosis deformans* indicate a mature age (about 50 years)
4) *Vertebrae gracile* and chin of mandible as well: most probably female
5) Thickness of the *parietal* bone 7.3 mm.
Transverse diameter of the *dens epistrophei* 10 mm.
Sagittal diameter of the *dens epistrophei* 10.7 mm.
Diameter of the *radius* of the head 19 mm.
6) *Spondylosis deformans* (grade 2); intravital dental loss of the 4.3; 4.7 and *alveoli* closed
7) *Gracile* constitution

No. 67: Square D/6 Shaft Tomb No. 2 Burial 7
1) *Cranium:* Fragments of the frontal, *parietal,* temporal and *occipital* bones are preserved; the *splanchnocranium* is represented by the *maxilla* and *mandible* with almost complete lower dentition
PCS: Scapula, clavicle, vertebral bodies, sternum, hip bones, *femur, fibula, tibia, metacarpalia* and *-tarsalia, clacaneus,* and *talus*
2) Stretching position
3) All the cranial sutures are still open, molar attrition (Brothwell, 1972; grade 2 tc 3+): early adult: 20-25 years
4) Most probably male as indicated by the shape of the mastoid process, the mandible robustness, the zygomatic arch and the orbital ridge
5) Petrous portion left side 12.8; 6.9; 6.95 mm.
Mastoid process - hight 34.5 mm.
Mastoid process - breadth 16 mm.
Height of the chin 16 mm.
Height of the *mandible corpus* 29.5 mm.
Height of the *mandible ramus* 57.5 mm.
breadth of the *condylar* process 22 mm.
Depth of the *condylar* process 8.5 mm.
Height of the *glendoid* cavity 36.2 mm.
Breadth of the *glenoid* cavity 26 mm.
Patella height/ breadth/depth 42.4; 41.5; 19.2 mm.
Transverse diameter of the *tibial diaphysis (foramen nutritium)* 22.5 mm.
Sagittal diameter 29.5 mm.
Condylar breadth of the *talus* 32 mm.
Maximum *calcaneus* length 81 mm.
6) Anomaly of the position of the incisors
Advanced caries of the upper molars
Osteoarthrotic disease of the *phalangeal caput*
7) Robust constitution
8) Animal bones
9) Male as indicated by the kind of the burial

No. 68: Square C/6 Burial 16
1) No skull fragments and only bones *(humerus, femur* and *tibia)*
2) Crouching position
3) General robustness indicates an adult or older age

4) No available sex specific variables: indeterminate sex
5) Minimum circumference of the *humerus* shaft 59.5 mm.
7) Indeterminate sex
9) Female as indicated by the kind of the burial

No. 69: Burial?
1) The skull is only represented by the *occipital* bone
PCS: Ribs, *femur* and *fibula*
3) The skeletal maturation idicates: an adult or old
4) No diagnosable sex specific variables indeterminate sex
5) Transverse diameter of the *femoral collum* 28.6 mm.
Sagittal diameter of the *femoral collum* 21 mm.
7) Indeterminate sex

No. 70: Burial II (?)
1) Nearly no preserved cranial fragments
PCS: Clavicle, ribs, hip bone, *humerus, radius, ulna, femur, patella* and hand bones.
3) General robustness, small pieces of cranial bones (suture closure) indicate an age about 40 (adult-mature)
4) Most probably male as indicated by robust post-cranial skeleton
5) *Patella* height, breadth, depth 45.0, 47.0; 23.0 mm.
Diameter of the *femur* head 47 mm.
7) Robust constitution
8) Arrowheads and dagger; teeth of goat/sheep

No. 71: Shaft Tomb Skeleton No. 1 (?) Burial 3 (Pl. CXIV, 1-6).
1) Relatively good preserved skeleton *(postcranium)* — skull (see No. 72) represented by *zygomatic* arches only
PCS: Almost complete vertebral column, *sacrum, sternum* ribs, hip bones and long bones of the skeleton, hand and foot bones
2) Stretching position
3) Age determination by polysymptomatic diagnosis (Acsad I & Nemeskeri, 1970): pubic *symphysis; femur* and *humerus spongios* structures), endocranial suture closure indicates a lower age (about 25 years) than the *PCS* (early mature)
4) Sex specific features of the pubic bone indicate probably male
5) Transverse diameter of the *dens epistrophei* 10.5 mm.
Sagittal diameter of the *dens epistrophei* 12 mm.
Humerus maximum length 313 mm.
Transverse diameter of the head 47.5 mm.
Sagittal diameter of the head 43.5 mm.
Maximum diameter of the *diaphysis* 21 mm.
Minimum diameter of the *diaphysis* 17 mm.
Minimum circumference of the shaft 60 mm.
Epicondylar breadth 61 mm.
Radius:
maximum length 265 mm.
Functional length 243 mm.
Minimum circumference 39 mm.
Transverse diameter of the shaft 15 mm.
Sagittal diameter of the shaft 11.8 mm.
Ulna:
maximum length 273.5 mm.
Minimum circumference 16 mm.
Transverse diameter of the shaft 14.5 mm.
Tibia:
Maximum length 376 mm.
Physiological length 353 mm.
Medial length *(condyl-malleoulus)* 367 mm.
Proximal epiphyseal breadth 73 mm.
Distal epiphyseal breadth 51 mm.
Maximum diameter of the shaft (midth) 35 mm.
Minimum diameter of the shaft (midth) 26 mm.
Sagittal diameter *(foramen nutr.)* 40 mm.
Transverse diameter *(foramen nutr.)* 24 mm.
Minimum circumference of the shaft 80 mm.
Fibula:
Maximum length 365 mm.
Minimum circumference 31 mm.
Femur:
Proximal transverse diameter 33 mm.
Proximal *sagittal* diameter 26 mm.

Horizontal diameter of the head	47 mm.
Circumference of the midth	148 mm.
Circumference of the midth (shaft)	90 mm.
Epicondylar breadth	79 mm.

6) Osteochondrosis vertebrae; slight *spondylosis deformans;* and *dorsoventral* deformation of the *tibial* shafts
7) Medium robustness; body height by Breitinger (1937): Tibia/168.6 cm.
8) Within the material there was a further radius of a 14 to 17 years old child, which belongs probably to No. 51. The *zygomatic* bones fit together with the skull fragments of No. 72.
9) Male as indicated by the kind of the burial

No. 72: Shaft Tomb Skeleton No. 1 Big Male Burial 3 (Pl. CXIV, 1-6)

1) *Cranium:* Well preserved skull which fits with some bones of skeleton No. 71; Neurocranium better preserved than the *splanchno-cranium,* dentition incomplete, and atlas
2) Stretching position
3) Molar attrition and the obliteration of the sutures indicate an age around 25 years (early adult)
4) Probably male from the set of sex specific features of the skull, but not "masculine male" as indicated by the archaeologists

3) Maximum length of the skull	183 mm.
Glabello-occipital length	177 mm.
Nasion-inion length	174 mm.
Minimum frontal breadth	98 mm.
Maximum frontal breadth	121 mm.
Stephanion breadth	109 mm.
Frontal arch	140 mm.
Parietal arch	134 mm.
Occipital arch	110 mm.
Sagittal arch	384 mm.
Frontal chord	117 mm.
Parietal chord	116 mm.
Occipital chord	97.5 mm.
Frontal fraction	54 mm.
Parietal fraction	56 mm.
Occipital fraction	45 mm.
Frontal subtense	29 mm.
Parietal subtense	27 mm.
Occipital subtense	26 mm.
Nasal breadth	25.5 mm.
Mastoid process breadth	25 mm.
Mastoid process breadth	12 mm.
Bimental breadth of the *mandible*	39.5 mm.
Depth of the *corpus*	79.5 mm.
Chin height	31.5 mm.
Corpus height *(foramen mentale)*	28.5 mm.
Ramus height	53 mm.
Minimum breadth of the *ramus*	34 mm.
Condylar breadth	19 mm.
Condylar depth	9.5 mm.
Angulus mandibularis	124°

6) The alveolar process of the *maxilla* shows markedly prominent tooth sockets
7) As shown in (Pl. CXIV, 1-6), the skull has a *dolichcephalic* shape
8) The skull belongs to the same individual as the skeletal remains from No. 71.
9) Male as indicated by the kind of the burial

No. 73: Square C/6 Burial 15 (Pl. CXV, 1-4).

1) *Cranium:* The *neurocranium* and the *mandible* are well preserved, and the upper facial skeleton is damaged
   PCS: One fragment of the vertebral body
2) Stretching position
3) Molar attrition and cranial suture closure indicate an adult age about 25 years
4) The cranial sex specific features indicate: male

5) *Glabello-occipital* length	185 mm.
Minimum frontal breadth	112 mm.
Bigonial breadth of the *mandible*	100 mm.
Depth of the *mandible*	70 mm.
Chin height	29.5 mm.
Height of the *corpus (foramen mentale)*	30.5 mm.
Minimum breadth of the *ramus*	31.5 mm.
Height of the *ramus*	58 mm.

Epigenetic trait no. 10 present

8) The shape can be diagnosed from (Pl. CXIV, 1-6).
9) Male as indicated by the kind of burial

No. 74: Square D/6 Burial 7

1) *Cranium: Neurocranial parietal* bone only; *maxilla* and *mandible*
   PCS: Clavicle, vertebrae, phalanges, ribs, hip bone fragments *humerus, radius, ulna, femur, tibia* and *talus*
2) Stretching position
3) Tooth abrasion indicates a late adult age about 35 years
4) Most probably male as indicated by the general robustness and the special sex diagnostic features *(mastoid* process, *zygomatic* arch, etc.)
5) Thickness of the *parietal* bone 7-8 mm.
   Minimum circumference of the *humerus* 65 mm.
   Minimum circumferences of the *tibia* 93.5 mm.
   Head diameter of the *femur* 46.5 mm.
   Patella height, breadth, depth 43-20.5 mm.
6) Robust constitution
8) The material does not belong to the individual of No. 67
9) Male as indicated by the kind of burial

Palaeodemography (Total number of individuals, sex and age distribution, life expectancy etc.)

In this section the palaeodemography of the Tell el-Mazar population study results are based on the sample given in Table 3. Here the survey on the total number of individuals is provided. The reader finds individuals identified with their estimated ages at death, sex attribution (anthropological diagnosis) and the archaeological sex diagnoses. We have studied a total number of seventy-four separately stored skeletal remains, but it was discovered that some of them belonged to the same individuals. Therefore, the number of excavated individuals diminished to a total of sixty-four individuals. We reason that this number seems to surpass the total number of individuals, because there is a lack of information in the archaeological records; and a lot of the material has been destroyed by packing and transport. This is indicated by the question-marks in Table 3. Besides nine individuals of the sample belonged to material which came from Tell itself and not from the graveyard. This means that fifty-five skeletons at most came from the burying place. Those individuals excavcated from the Tell are age-distributed as follows: 4 infants (I); 1 adult or juvenile; 3 adults; 1 mature. The four adults are all masculine. The result of the archaeological and anthropological sex determination is listed in Table 4.

As seen from the right column of the table there are eighteen indeterminate skeletons based on anthropological diagnosis and twenty-six indeterminate skeletons based on archaeological diagnosis because their bones in most of the cases belong to children or they are so scanty that no sex diagnostic features were present. In Section 2 we demonstrated how the anthropological diagnosis has been established. The method of the archaeologists is based on the assumption that females had been buried in a crouching position while male individuals had been layed to rest in a stretching position.

If we follow the archaeological diagnosis we find a feminity index of 80.95 which means that the females are better identified than the males. Just opposite to this result is the sex diagnosis by anthropological methods. If we regard only the skeletons from the graveyard, we find that double of the male skeletons are females. This means the masculinity index is 200. If we observe the differences in detail there are ten discrepancies out of twenty-seven comparable diagnoses between the anthropological and the archaeological determinations. In other words, the uncertainity is 37% within the discrepancies. Skeletons number 5, 16, and 34 are probably males. Those skeletons in which we have little doubt that our diagnosis could be wrong (skeletons 4, 9, 13, 27, 31) belong to the male group. In two cases we classified skeletons, 4 and 45, as females inspite of their stretching positions which classify them as males. How to overcome these controversial diagnoses is a problem. To solve this problem, we have to answer these questions: what are the facts that support the anthropological viewpoint?;

Table 3: Tell el-Mazar: Comparison Between Anthropological And Archaeological Data

No.	*Square*	*Burial*	*Sex. Anthrop.*	*Archaeol.*	*Age (Years)*
1	Tell E6	3	?	Female	4-5 Infant I
2	D5	34	?	Female	Infant I
3	Bath Tomb	23	Probably Fem.	Female	Mature Senile
4	D3	76	Male	Female	Early Adult
5	C3	78	Probably Male	Female	About 40
6	D7	53	?	Female*	Neonatus 2 months
7	C4	51	Probably Male	Male	Adult or Old
8	E4	84	Probably Fem.	?	Early Adult
9	D3	79	Male	Female	Late Mature
10	Tell F8	11?	?	?	3.5-6 Infant I
11	Tell C2	82	Probably Male	?	About 50
12	Tell A7	40	?	?	6 Months ± 3
13	C2	83	Male	Female	Early Adult
14	E6	8	?	?	Adult or Old
15	Tell F1	?	Male	?	Adult or Old
16	C3	72	Probably male	Female	Adult Mature Dancer
17	Tell A7	?	?	?	0.4-0.6 Infant I
18	D3	80	Probably Fem.	?	About 20/21
19=56	E8	? L2	?	Male	Adult or old
20	C2	? L81	?	Female	3 Infant I
21	E4	48	?	Female	Infant I
22	C7	52	Probably Male		Early Adult
23	Tell G2?	?	?	?	Juvenile /Adult
24	Tell H7	?	Probably Male	?	About 20
25	C6	31	?	?	0.2 Infant I
26=54	E6	Near B1	Male	Male	Early Adult
27	D3	67	Male	Female	Mature Senile
28	Tell G1	L5	Male	?	About 30
29	D3	66	Probably Fem.	?	Late Adult
30	E3	77	Probably Male	? ✝	Adult
31	D3	64	Male	Female*	About 30
32	C3	L65	Male	Male	Early Adult
33	D3	68	Probably Fem.		Adult mature
34	C3	70	Probably Male	Female	Juvenile
35=36	?	?	Male	?	15-16 Juvenile
37	?	19	Probably Fem.	Female	Early Senile
38=40	?	?	Probably Fem.	?	25-35
39	?	?	Male	?	18 Late Juvenile
41=51	D7	II/IIA?	Probably Male	? ✝ ✝	15-18 Juvenile
42=43	?	?	Probably Male	?	About 25
44=45	C6	17	Female	Male*	25-30
46	D7	21	Male	Male	Mature
47	D6	6	Male	Male	Late Adult
48	?	?	Male	?	Adult or Old
49	?	?	Probably Fem.	?	About 25
50	D6	37	Probably Male	Male	25-30
52	E5	10	?	Female	Late Adult/ Early Mature
53	SR 41?		Probably Fem.	?	Late Adult/ Early Mature

55	C6	14	Probably Fem.	Male	Late Adult/ Early Mature
57	C6	42	Probably Fem.	Female	Late Adult
58	C6	22	Probably Male	?	30-40
60	C7	11	?	Male	Adult or Old
61	E6	4	?	Male	Juvenile
63	E6	3	Female	Female	Early Adult
64	E5	6?	?	Male	Adult or Old
65	?	?	Probably Male	?	Late Mature
66	?	?	Female	?	About 50
67	D6	7 Shaft	2 Male	Male	20-25
68	C6	16	?	Female	Adult or Old
69	?	?	?	?	Adult or Old
70	?	11(?)	Male	?	About 40
71-72	D6	3 Shaft	Male	Male	About 25
73	C6	15	Probably Male	Male	About 25
74	D6	7	Male	Male	About 35

* Though the archaeologists are of the opinion that the individual was buried in a squatting position, the map indicates possibly a stretching position;
** See above, vice versa
+ Squatting (crouching) position
++ Stretching position?

Table 4: Sex Determination of the Skeletal Remains From Tell el-Mazar

Sex determination by	*Male* *	*Female*	*Indeterminate*		*n*
Anthropological methods	32(28)	14	18 (13)	64 (55)	
archaeological methods	17	21 (20)	26 (18)	46 (55)	
Discrepancies anthrop.	Male	anthrop. female		total	
archaeol.	female 8	arcaheol. male 2		10	
Coincidence both diagnoses male 11		both diagnoses female 6			17
Not comparable one diagnosis missing	30	both diagnoses missing 7			37
		Total sample			64

* Data within the brackets concern the graveyard except the Tell.?

and, what are the shortcomings of the archaeological hypothesis?

Anybody concerned with the osteological sex determination knows that the rate of misclassification depends, to a high degree, on both the completeness of the material under study and the methodological inventory that can be applied (see N. N. Henke, 1974, 1977, 1979; Eale & Henke, 1979). Since the bones of the Tell el-Mazar population are badly preserved there may be some mistakes in our diagnoses, especially concerning those skeletons that are determined as "probably" male or female. As we reviewed those diagnoses which differed from the results of the archaeological determination, we are sure that the anthropological diagnosis refutes the archaeological assumption that the kind of burial can serve as a sex diagnostic marker. We have doubt that this hypothesis can be maintained though it seems to be obvious that the archaeological diagnosis is correct in the case of burial No. 16 (female dancer). A good argument in contradiction with the hypothesis of the archaeologists that the squatting and stretching positions are in-

Table 6: The abridged life table of the Tell el-Mazar population; both sexes

Age (x)	*Distribution of death* No. (D_x)	per cent	*Survivors* (l_x)	*Probability of death* (g_x)	*Total No. of years lived between ages x and x + 5* (L_x)	*Total after Lifetime* (T_x)	*Life expectancy* (e^0_x)
0-4	4.34	8.19	100.00	0.0819	479.525	3,347.575	33.48
5-9	0.67	1.26	91.81	0.0137	455.900	2,868.050	31.24
10-14	—	—	90.55	0.0000	452.750	2,412.150	26.64
15-19	5.00	9.43	90.55	0.1041	429.175	1,959.400	21.64
20-24	7.22	13.62	81.12	0.1679	371.550	1,530.225	18.86
25-29	9.22	17.40	67.50	0.2578	294.000	1,158.675	17.17
30-34	4.72	8.91	50.10	0.1778	228.225	864.675	17.26
35-39	4.72	8.91	41.19	0.2163	183.675	636.450	15.45
40-44	3.65	6.89	32.28	0.2134	144.175	452.775	14.03
45-49	3.15	5.94	25.39	0.2340	112.100	308.600	12.15
50-54	3.15	5.94	19.45	0.3054	82.400	196.500	10.10
55-59	2.65	5.00	13.51	0.3701	55.050	114.000	8.44
60-64	1.65	3.11	8.51	0.3655	34.775	58.950	6.93
65-69	1.65	3.11	5.40	0.5759	18.775	24.175	4.48
70 - x	1.65	2.20	2.20	1.0000	5.500	5.500	2.50
Total	53.00	100.00	100.00		3,347.575		

sex-differentiated lifetables, though it is well known from the literature that the average lifespan of women was apparently shorter in prehistoric times than that of men which means the sex ratio influences the results. The result of the sex mixed life table is given below and, in our opinion, this method can give us valuable demographic information though the basis is not quite correct in the sense of palaeodemography (Table 6).

The distribution of death is given in the left column of Table 6 and in Figure 2. It is obvious from the curve that the death rate of the infant I and infant II class is under-represented possibly due to the fact that selection has occurred in the preservation of skeletal material. Furthermore there is often a tendency not to save bones, especially of infants and children, thinking them of no particular interest and consequence; but, in the present study we are sure that the last cause has no relevance to our material. We think that the infants could have been buried in separate places as is possibly indicated by the high percentage of child-skeletons from the Tell. The deficit of infants II is usual because the high death rate concerns the youngest group (infant I). The peak of distribution is between 25-29 years and this is also in accordance with most of the palaeodemographic skeletal series.

If we look at Figure 3 we can conclude from the distribution of survivors that there is an obvious decline of survivors in the first class. After this period with a high risk from infectious diseases, malnutritions, etc., there is a stagnation in the survivorship; and, beginning with the adults, there is a steady decline with a flattening in the late adults and early mature phase. This is the normal pattern of distribution observed from several prehistoric populations to be seen from the different examples given by Acsadi & Nemeskeri (1970).

The probability of death in the Tell el-Mazar population (Table 6, column Qx) has a high rate in the first phase of life and decreases to zero in the infant II group (10-14). Then we have an increase to the 25-29 year-old individuals, a small decline and a stagnation in the late adults and early mature phase and a steady increase in the oldest phases.

Finally, we conclude from the last column (Table 6, Fig. 4) that the life expectancy of the Tell el-Mazar

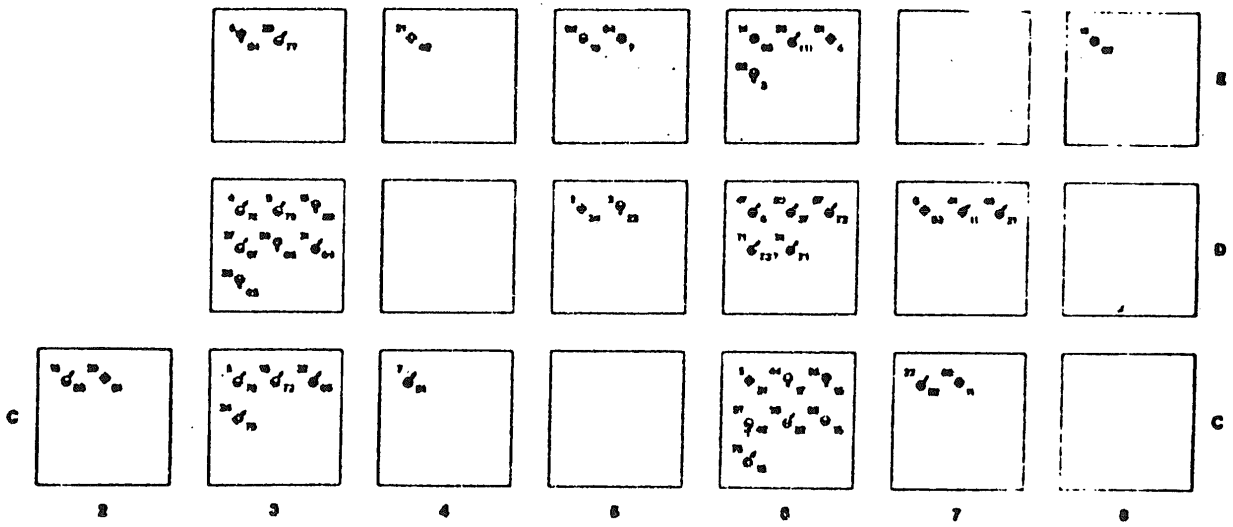

Fig. 1: Burial map of Teel el-Mazar (graveyard) signs ♂ male; ♀ Female, ○ undetermined, ◇ child (infant/Juvenile). Position of the skeleton: ● Stretching ⊖ unknown, ◒ squatting. Running nos.: ⓪ burial nos.. Identified skeletons n = 43.

Table 6: The abridged life table of the Tell el-Mazar population; both sexes

Age (x)	*Distribution of death* No. (D_x)	per cent	*Survivors* (l_x)	*Probability of death* (g_x)	*Total No. of years lived between ages x and x + 5* (L_x)	*Total after Lifetime* (T_x)	*Life expectancy* (e^0_x)
0-4	4.34	8.19	100.00	0.0819	479.525	3,347.575	33.48
5-9	0.67	1.26	91.81	0.0137	455.900	2,868.050	31.24
10-14	—	—	90.55	0.0000	452.750	2,412.150	26.64
15-19	5.00	9.43	90.55	0.1041	429.175	1,959.400	21.64
20-24	7.22	13.62	81.12	0.1679	371.550	1,530.225	18.86
25-29	9.22	17.40	67.50	0.2578	294.000	1,158.675	17.17
30-34	4.72	8.91	50.10	0.1778	228.225	864.675	17.26
35-39	4.72	8.91	41.19	0.2163	183.675	636.450	15.45
40-44	3.65	6.89	32.28	0.2134	144.175	452.775	14.03
45-49	3.15	5.94	25.39	0.2340	112.100	308.600	12.15
50-54	3.15	5.94	19.45	0.3054	82.400	196.500	10.10
55-59	2.65	5.00	13.51	0.3701	55.050	114.000	8.44
60-64	1.65	3.11	8.51	0.3655	34.775	58.950	6.93
65-69	1.65	3.11	5.40	0.5759	18.775	24.175	4.48
70 - x	1.65	2.20	2.20	1.0000	5.500	5.500	2.50
Total	53.00	100.00	100.00		3,347.575		

sex-differentiated lifetables, though it is well known from the literature that the average lifespan of women was apparently shorter in prehistoric times than that of men which means the sex ratio influences the results. The result of the sex mixed life table is given below and, in our opinion, this method can give us valuable demographic information though the basis is not quite correct in the sense of palaeodemography (Table 6).

The distribution of death is given in the left column of Table 6 and in Figure 2. It is obvious from the curve that the death rate of the infant I and infant II class is under-represented possibly due to the fact that selection has occurred in the preservation of skeletal material. Furthermore there is often a tendency not to save bones, especially of infants and children, thinking them of no particular interest and consequence; but, in the present study we are sure that the last cause has no relevance to our material. We think that the infants could have been buried in separate places as is possibly indicated by the high percentage of child-skeletons from the Tell. The deficit of infants II is usual because the high death rate concerns the youngest group (infant I). The peak of distribution is between 25-29 years and this is also in accordance with most of the palaeodemographic skeletal series.

If we look at Figure 3 we can conclude from the distribution of survivors that there is an obvious decline of survivors in the first class. After this period with a high risk from infectious diseases, malnutritions, etc., there is a stagnation in the survivorship; and, beginning with the adults, there is a steady decline with a flattening in the late adults and early mature phase. This is the normal pattern of distribution observed from several prehistoric populations to be seen from the different examples given by Acsadi & Nemeskeri (1970).

The probability of death in the Tell el-Mazar population (Table 6, column Qx) has a high rate in the first phase of life and decreases to zero in the infant II group (10-14). Then we have an increase to the 25-29 year-old individuals, a small decline and a stagnation in the late adults and early mature phase and a steady increase in the oldest phases.

Finally, we conclude from the last column (Table 6, Fig. 4) that the life expectancy of the Tell el-Mazar

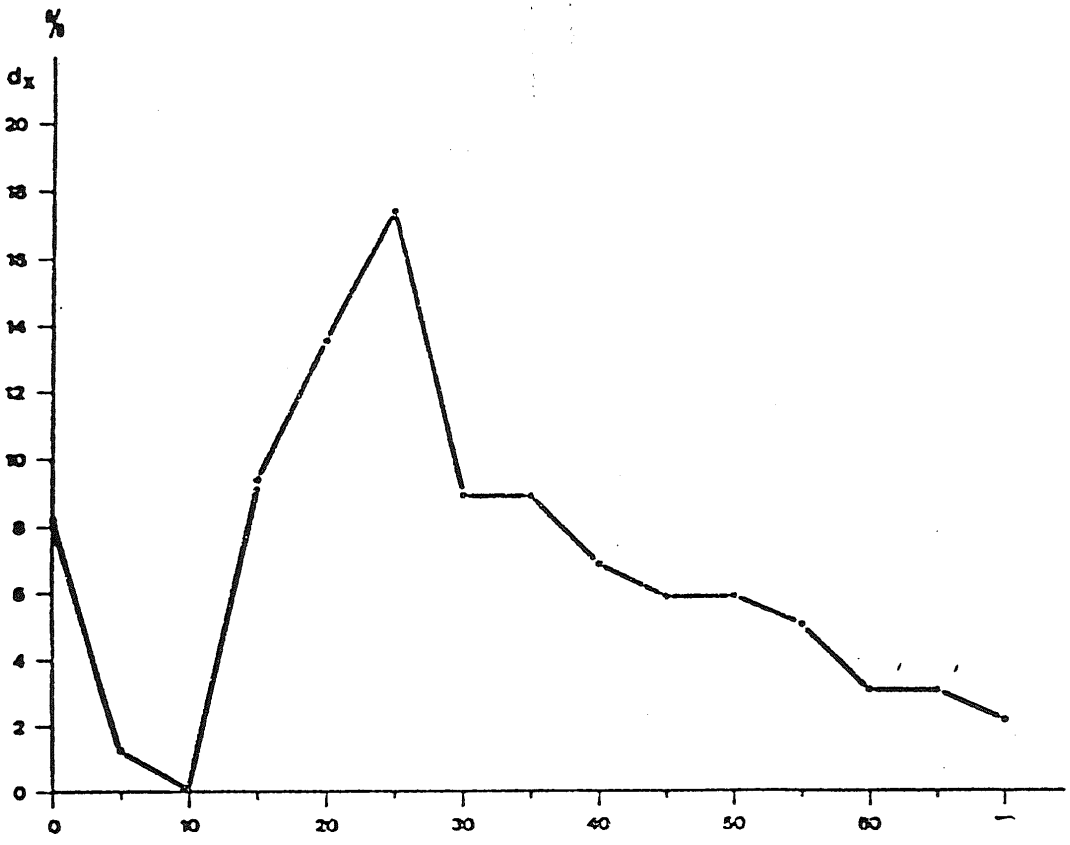

Fig. 2: Death rate of the Tell el-Mazar population

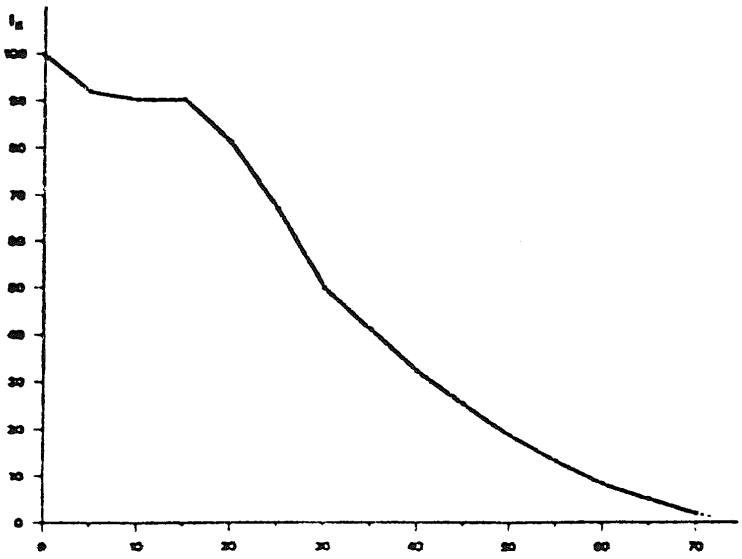

Fig. 3: Survivorship within the Tell-el Mazar population.

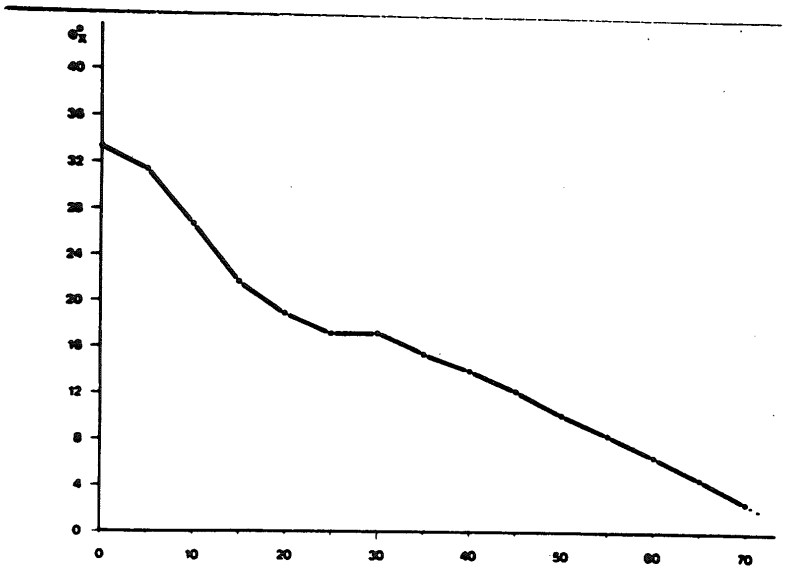

Fig. 4: Life expectancy of the Tell-el Mazzar population (both sexes).

Table 7: Diseases in the Tell el-Mazar Population

Type of Disease	*Running Number of the Skeleton*
Anthritic *exostoses (phalanges)*	3; 33; 67
Osteoarthritis *costovertebralis*	33
Osteochondrosis *vertebralis*	4; 5; 13; 33; 47; 71
Schmorl's nodules	5; 45
Arthritic *spondylosis*	5
Spondylosis deformans	9; 66; 71
Ankylosis of the *distal radius and the carpalia*	3
Fracture of the *radius*	3
Fracture of the *mandible*	54
Inflammatory disease of the *femur*	17
Spina bifida	41
Parodontal disease	3; 5
Periodontal diseases (incl. atrophy of the *alveolar* arch)	9; 11; 16
Malocclusion	51
Deflected teeth	67
Intravital dental loss	66
Caries	3; 67

It is obvious from the above given table that we cannot establish profound statistics of diseases because the skeletons are incomplete; but we can conclude that the observed bone diseases are mostly degenerative. Beside this main category we find a few inflammatory and inborn diseases as well as injuries.

One observation should be separately mentioned; that is, the dental age overwhelms the skeletal age. If we follow the hypothesis that the skeletal maturation depends to a high degree on the environmental factors while the dental maturation is more genetical, we come to the conclusion that there seem to be factors of malnutrition that induced the slower skeletal maturation (Sundick, 1977). One of the most interesting results from the skeletons from Tell el-Mazar are the cranial and postcranial trepannings, which are illustrated in Pl. CXVII-CVIII While trepanning of the vault is well-known from different places all over the world and has been undertaken since the stone age (Piggott, 1940; Stewart, 1958), Postcranial trepanning is very seldom. In the present cases, the holes are very small (about 405 mm. in diameter), but this is in no way an exception as can be shown from the example given by Mikic (1980) for a Yugoslavian skull (Pl. CXVIII, 2) of the Illyrian period (500-400 B.C.). In the demonstrated cases, the trephine holes are on the right cranial vault of skeleton No. 58 (Burial 22, male, adult), which has twelve holes and of the individual No. 57 (Burial 22, probable female, early adult), which has only four holes. In another case we could observe three holes in the occipital region of the skull (No. 31, probably male, adult). Two of the holes are situated in the *lambda* and one below the *nuchal* crest on the nuchal plane. The postcranial trephine holes are unpreserved material and we are very grateful to Professor K. Yassine, who took the pictures of the material *in situ.* While the *humerus* of the individual from Burial 9 shows only one hole in the *proximal diaphysis,* there are

population is, from birth, 33.5 (33-34) years. This age is about one-half of the life expectancy in an industrialized population (Acsadi & Nemeskeri, 1970). This result is very similar to that among contemporary people in other regions. If we would correct the data, since there seems to be a deficit of infant individuals in our sample, the life expectancy would be slightly lower.

Generally, we can say that the derived data fit well in to the theory that the prehistoric populations existed under conditions which are comparable with those in underdeveloped countries due to a high mortality rate in the youngest groups and a high death rate of early adults by traumatic diseases in males and death in association with childbirth in females.

Quantitative Morphology

To broaden our knowledge of the people in the past, we have to analyse their racial and ethnic affinities. Those methods that have been established for comparing populations are based on uni- and multivariate analysis of metric and non-metric traits (Schwidetzky, 1971; Howells, 1974). As we have mentioned, little is known about the racial and ethnic changes in the middle and Near East (Ferembach, 1959, 1960, 1970; Arensburg, 1973). It is not possible to demonstrate hypotheses of ethnic evolution in this region from the past to the present because the material gives no corresponding information.

The largest amount of ancient human remains ever discovered in the Middle East was unearthed at Lachish and reported by Risdon (1939). Risdon concluded from his anthropological data that the people from Lachish came from or were closely related to the upper Egyptian people of the same period. Arensburg (1973) came to the conclusion that there are strong affinities to local Mediterranean people especially from sites in Israel, and that the Iron Age groups do no differ markedly from the Middle Bronze age populations (Giles, 1953; Hughes, 1965). Another conclusion concerns the continuity of morphological characters from the past up to the present time. Most of the typological features of the Iron age people can be found in the recent Bedouin population and in some groups of modern Jews (Arensburg, 1973).

Though we can run no metric analysis of population comparison, we want to compare those scanty data given in the catalogue with the data published in the literature for people of the same period. The only crania from which we got some information (numbered by 50, 51, 71, 72 and illustrated in Figures 1-3) show characters that are very similar to those crania that are described as Mediterranean. The skulls are *dolichocrania* or with a tendency towards *mesocrany*. The vault is *orthocranic* and *metiocrania,* the orbits are *hypsiconch* and the nasal aperture is *mesorrhin*. The facial index varies within the *mesene* and *leptene* category that means the available skulls fit very well to those people which form a continuum from the Middle Bronze period up to recent Bedouin groups. A comparison with those skeletons of recent Bedouins which have been studied recently in Jordan, Henke and Disi (1981), confirmed this conclusion.

Palaeopathology (Including Injuries And Trepanning)

Paleopathology is defined as the study of diseases in ancient human populations as revealed by their skeletal remains (Steinbock, 1976). The term paleopathology was popularized if not invented by Sir Marc Armand Ruffer within the last century, while dealing with the pathological traits of the extensive collection of Egyptian mummies. The literature since then consists of a lot of casuistic reports on isolated specimens of bone pathology. The recent view of paleopathology highlights the question of reconstructing the social aspects of ancient societies. This means paleopathological studies contributie to the illumination of ancient population and their life conditions. To get some information from the skeletal material of Tell el-Mazar, we worked out the following Table 7, which gives an overview of those diseases that could be observed in the Iron age population.

three holes situated side by side in the tibia of skeleton No. 33.

One would ask what are the motives for trepanning the skeletons. We guess that in the present case that the holes were set shortly before death during life or after death because no healing process was observed. We do not know whether there are medical motives for this procedure or ritual implications. The possibility that these holes are man-made or have randomly developed is rendered remote by the fact that the archaeologists excavated an instrument (114.2 mm. long and 3.5 to 3.3 mm. in diameter) which had obviously served as a drill for trepanning the demonstrated holes.

Conclusions

The present paper deals with the skeletal material of the Iron age graveyard of Tell el-Mazar. A sample of sixty-four individuals has been studied and described, and the demographic, morphological and paleopathological results are presented. Because the material was not completely preserved there is a broad deficit of information, but it was possible to come to the following conclusions:

1) The anthropological sex determination of the skeletons indicates that there was a misproportion of male and female individuals within the population, which means that the masculinity index is about 200. This result is contradictory with the archaeological result. Based on the assumption that the type of burial can serve as an indicator of sex (squatting position= female; stretching position = male) the archaeologists found a balanced sex ratio. Possible misclassifications by the anthropological diagnosis are discussed along with the unproven hypothesis of the archaeologists. The conclusion of the discussion is that there is no evidence that the anthropological diagnosis is wrong though it might be correct in some cases. We are of the opinion that there is nearly no evidence that the archaeological hypothesis of sex differentiated burials can be maintained.
2) The paleodemographic analysis leads to the conclusion that there is a small deficit of children within the sample that may be due to preservation factors or to separate burying of children in some cases. The age distribution, probability of death and the life expectancy were calculated by an abridged life table. The results coincide with those from other contemporary populations. Especially the low life expectancy of 33.5 years (both sexes) is indicative of prehisotric populations with a very low life-standard and a high mortality rate in the childhood and adulthood.
3) The scanty morphological data (metric and non-metric) cannot serve as an extensive analysis of racial and ethnic relationships to other populations from the Middle and Near East; but it is obvious from the poor skeletal remains that there are typological affinities to the Meditteranean group as being described for the period of Middle Bronze age up to the present (especially Bedouin groups).
4) The ancient diseases are mostly degenerative and only in some cases due to injuries and inflammations. A reconstruction of a pattern of typical diseases cannot be given from the material.
5) Within the material under study there are three skulls; skulls fragments and

two postcranial skeletons with small (about 4 mm.) trephine holes. The instrument which could have served for drilling the holes has also been excavated, so that there is little doubt that these holes are real trepannings.

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