unter rhodischer Oberhoheit zu bleiben habe. Gegen Ende des Jahrzehnts haben die Kaunier ihr Ziel aber dennoch erreicht und ihre libertas zurückgewonnen (s.o.).

Inwieweit ihnen die Ehrungen für mächtige Römer dabei von entscheidendem Vorteil waren, wissen wir nicht, solange unbekannt ist, unter welchen Umständen Kaunos wieder civitas libera wurde. Auch nach der Wiedergewinnung der Freiheit fuhr Kaunos fort, einflussreichen Römern durch Ehrenstatuen zu schmeicheln[23]. Je mehr dies zur routinemässigen Pflicht wurde[24], desto weniger politische Bedeutung muss den Ehrungen zugekommen sein. Die Ehrung des Murena aber war für die Kaunier der Anfang zäher Bemühungen gewesen, die schliesslich zum Erfolg führten.

[23] G. E. Bean, a. O., Nr. 26.27.28.29.

[24] Dion von Prusa, or. 34, 105: Die Rhodier sagen, sie müssen alle Statthalter ehren.

KAUNOS'TA L. LICINIUS MURENA VE OĞLU GAIUS ŞEREFİNE DİKİLMİŞ İKİ HEYKEL

RAINER BERNHARDT

Çev. BAKİ ÖĞÜN

1) Üzerinde bir süvari heykeli dikilmek için dört delik açılmış beyaz mermerden büyük dikdörtgen bir kaide; profilinin sağ yanının ön ve arka köşeleri kırılmıştır. y. (Profil dahil) 155 cm. Gen. 81 cm. Uz. 210 cm. Harf y. 1.8 cm. Satır ara. 1.8 cm. (Lev. I, 1).

'Ο δῆμος ὁ Καυνίων ἐπαινεῖ καὶ στε-
φανοῖ Λεύκιον Λικίνιον Λευκίου
υἱὸν Μουρήναν αὐτοκράτορα,
εὐεργέτην καὶ σωτῆρα γεγενη-
μένον τοῦ δήμου χρυσῶι στεφά-
νωι, τιμᾶι δὲ καί εἰκόνι χαλκῆι ἐφίππωι
ἀρετῆς ἕνεκεν καὶ εὐνοίας τῆς εἰς ἑαυτόν.

2) Beyaz mermerden yuvarlak kaide, üzerinde heykel için iki, biri de küçük destek için olmak üzere üç delik görülür: üst profili kısmen kırıktır; y. (Profil dahil) 72 cm. Çapı. ca. 70 cm. Dikdörtgen bir tabla üzerinde durmaktadır. Harf y. 1.7 cm. Satır ara. 1.3 cm. (Lev. I, 2).

'Ο δῆμος ὁ Καυνίων ἐπαινεῖ
καὶ στεφανοῖ Γάιον Λικίνιον
Λευκίου υἱὸν Μουρήναν εὐερ-
γέτην καὶ σωτῆρα γεγενημέ-
νον τοῦ δήμου χρυσῶι στεφάνωι,
τιμᾶι δὲ καὶ εἰκόνι χαλκῆι ἀρετῆς
ἕνεκεν καὶ εὐνοίας τῆς εἰς ἑαυτόν.

Her iki kaide Ankara Üniversitesi DTC Fakültesi adına Prof. Baki Öğün tarafından yönetilen kazılarda 1970 yılında Kaunos'ta açığa çıkarılmıştır[1].

[1] Burada, yazıtların yayınlanmasında bana yol gösteren profesör Herrmann'a, 1972 yazında beni misafir ederek yazıtları bana yayınlamak üzere veren profesör Öğün'e ve seyahat için para yardımında bulunan Deutschen Forschungsgemeinschaft'a teşekkür ederim.

Bunlar, muhtemelen liman agorasının bir kenarını teşkil eden yerde, şimdi bir çeşme anıtı (Nymphaeum) olarak kabul edilen ve üzerinde bir gümrük nizamnamesi yazıtı bulunan yapı ile büyük stoa arasındaki bir anıtlar grubunun yanında bulunmuştur[2] (Lev. II, 1). G. Murena'nın yuvarlak kaidesi (No. 2), biraz daha küçük olmak üzere, büyük atlı heykeli kaidesinin öte tarafında, aşağı yukarı aynı uzaklıktaki, yazılı üst kısmı kaybolmuş, başka bir kaide ile benzerlik göstermektedir[2a]. Böylece bunlar üç heykelden müteşekkil simetrik bir grup teşkil eder (aşağı bk). Bu gurubun güney doğusunda, çok yakınında Kaunos'un ileri gelen bir ailesi şerefine dikilmiş, üzerinde yazıtlar görülen bir exedra, kuzey batısında hemen yuvarlak kaidenin bitişiğinde daha sonraki devirde inşa edilmiş bir çömlekçi fırını vardır. Bu anıt grubunun çevresi, önüne muhtemelen daha geç devirde yapılmış bir başka heykel kaidesi ile daraltılmıştır (Lev. II, 2).

L. Licinius Murena Kaunos'ta şimdiye kadar şeref heykeli dikilmiş Cumhuriyet Devrindeki Romalıların en tanınmış olanıdır[3]. Burada onun hayat hikâyesini bütün detayları ile anlatmaya lüzum yoksa da en önemli olaylardan bahsedilecektir: İ.Ö. 84–81 yıllarında Murena Sulla tarafından Asia eyaletinin başına getirilmişti. Kendisi hayli müessir bir şekilde korsanlarla mücadeleye girişmiş ve bağımsız Kibyra prensliği arazisini Roma eyaletine katarak hakimiyetine son vermiştir. Sulla'nın şan ve şöhretinin ardında kalmayan şöhret hırsı yüzünden İ.Ö. 83 yılından itibaren Mithridat'ın memleketine üç kere yağma seferi yapmıştır. Bu sayede imparator unvanını almıştır. Üçüncü seferde, Sulla ile yapmış olduğu sulh anlaşması yüzünden diplomatik yollardan boşu boşuna protesto ettikten sonra hücuma geçen Mithridat'ın ordularına karşı feci bir yenilgiye uğradı. Bunun üzerine İ.Ö. 81 de Sulla onu komutanlıktan aldı; fakat onun için Roma'da Mithridat'a karşı zafer şenliği düzenlenmesine müsaade etti[4].

[2] G. E. Bean, JHS 73 (1953), 97ff. Nr. 38 = SEG XIV 639; B. Öğün, TAD XIX–II, 1970 s. 196, Res. 8–9.

[2a] G. Murena'nın yuvarlak kaidesinin temeli atlı anıtın kaidesinden 83 cm., öte yanındaki kaide 95 cm. uzaklıktadır. G. Murena'nın anıtının altyapısının her iki kare basamağının yan uzunluğu 106 ve 92 cm., yükseklikleri 26 ve 27 cm. ona karşılık diğer kaidedeki iki dikdörtgen basamağın boyutları 98×93.5 ve 78×80 cm. ve yük. 24 ve 27.5 cm. G. Murena'nın temelinin üst basamağı üzerinde yuvarlak kaidenin gövdesi için yuvarlak bir çıkıntı yapılmış, öbür taraftaki anıtta ca. 66 cm. çapındaki yuvarlak kaide doğrudan doğruya dikdörtgen temele oturtulmuş ve üç zıvana ile tutturulmuştur. Ölçülerdeki farklar gözle pek farkedilmeyecek kadar azdır. Belki de her iki anıt önceden hazırlanmadan mevcut malzemeden yararlanılarak yapılmıştır.

[3] Başka Romalıların şereflendirme heykelleri için bk. G. E. Bean, JHS 74 (1954), 85 v.a.

[4] L. Licinius Murena'nın hayat hikâyesi ve onun Anadolu'daki yaptığı işler hakkında bk. F. Münzer, Licinius 122, RE XIII 1, 1926, 444 v.a. ve D. Magie, Roman Rule in Asia Minor to the End of the third Century after Christ, Princeton 1950, Cilt 1, s. 240–245.

Murena bu yazıtta αὐτοκράτωρ (İmperator) unvanı ile anıldığına göre yazıtın terminus post quem'i İ.Ö. 83 yılı olmaktadır[5]. Bu yazıt çoktan beri bilinen Rodos (Syll.[3] 745)[6] ve Messene'de (IG V 1, 1454) bulunmuş Murena'yı ἰμπεράτωρ unvanı ile tanıtan yazıtların yanında yer almaktadır. İmperator unvanının her üç yazıttaki bahsediliş şekli, yunan yazıtlarında alışılmış bir şekil olan Flamininus, Mummius ve Sulla gibi ünlü ordu komutanlarının (hatta Sulla kendisinden önce kimsede görülmeyen bir tutum ile imperator unvanına Roma paralarında önem verdiği halde) ancak zaman zaman kullandıkları[7] şekilden başkadır. Sulla'nın tutumu için yapılan açıklamada, onun kanunsuz durumunu düzeltmeyi düşündüğü kabul edilmektedir[8]. Aynı şey Murena için de, bir farkla geçerli olabilir. Sulla imperator olarak tutumunu her şeyden önce Romalılara, ona karşılık Murena ise Romanın tabilerine kendi kanunsuz valiliğini, Sulla'nın İtalya'daki zaferinden[9] sonra senatoca resmen tanınıncaya kadar, kabul ettirmek için bu unvanı kullanmış olmalıdır. Murena eyalette kendi imperator unvanına büyük değer vermiştir. Murena'nın Mithridates'e yenildiği halde Roma'da zafer şenliği tertiplemiş olması kendini beğenmişliğinin ve şöhret düşkünlüğünün de bu işte rol oynadığını göstermektedir.

Kaunos'taki yazıtta ἰμπεράτωρ yerine αὐτοκράτωρ kelimesinin kullanılmasının sebebini Rodos ve Messene'deki yazıtlar açık bir şekilde anlatmaktadır. Yunanlılar latince ve yunanca deyimler arasında bir fark gözetmemekte ve her iki dildeki kelimelerden birini arzularına göre diğerinin yerine kullanmaktadır[10].

Murena'nın şereflendirilmesinin sebebi konusunda ise genel olarak bu tür şereflendirilmelerden beklenenden başka bir sebep aramak gerekir: Messenedeki şereflendirme yazıtının sebebi olarak şehrin Sulla ile iyi ilişkiler kurmak istediğine[11] dair örnek gösterilirse de bu durum Kaunos yazıtı için şüphelidir.

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[5] Murena'nın ordu tarafından imparator ilân edilmesi Cic. pro Mur. 5, 12; De imp. Cn. Pomp. 8.

[6] IG XII 1, 48 ve Dessau 8768; bunun için bk. F. Münzer, Cornelius 194), RE IV 1, 1900. 1369 v.a.

[7] Dessau 8771 ve A. Plassart, BCH 50 (1926), 437.

[8] H. Mattingly, Some New Studies of the Roman Republican Coinage, Proceed. of the Brit. Acad. 39 (1953), 263.

[9] R. Combès, Imperator, Paris 1966, 101 eğer Murena'nın "Practur" unvanının senatoca tanınmasını Sulla'nın zaferinden sonra olduğunu yazsaydı doğru olacaktı. Bunun için : T.R.S. Broughton, The Magistrates of the Roman Republic 2, New York 1952, 62 A. 4.

[10] R. Combès'nin (a.g.e. s. 114) Doğu Yunanda Sulla'nın yazıtlarındaki örnekte her iki kelime arasında bulmak istediği fark böylece doğru sayılamayacaktır.

[11] S. Accame, Il dominio romano in Grecia dalla guerra acaica ad Augusto, Rom 1946, 139.

Rodos yazıtı benzer örnek olarak gösterilemez. Çünkü o Murena için bir şereflendirme yazıtı değil, aksine Romalı memurlara gönderilen heyetlerin masraflarını üzerine alan bilinmeyen bir iyiliksever içindir. Birinci Mithridates savaşındaki mertçe davranışı yüzünden Romalıların teveccühünü kazanmış olan[12] Rodos'ta bulunmuş Murena için herhangi bir şereflendirme yazıtı tanımıyoruz. Hakikat halde Rodos'ta Murena ve onun Legat'ı Aulus Terentius Varro şerefine bir dekret bulunduğunu tahmin ediyoruz. Çünkü her ikisi (Syll.[3] 745 Z. 5/6 ve 9–11) yazıtında πρόξενος καὶ εὐεργέτης olarak anılmaktadır. Diğer bahsi geçen Romalılar için bu unvanlar kullanılmamıştır. Her ne ise Kaunosluların Romalılarla ilişkileri çok kötü idi. Çünkü bilindiği üzere Kaunos Mithridates ile beraber olmuş ve bütün İtalyalıları şehrin surlarında öldürmüştür[13]. Onun için Romalıların zaferinden sonra Kaunos bağımsızlığını kaybetmiş ve Sulla tarafından Kaunosluların nefret ettikleri Rodosluların idaresine verilmiştir[14]. Ondan sonra ilk olarak 60–51/50 yılları[15] arasında bağımsızlığını yeniden kazanmış olmalıdır[16]. O halde İ.Ö. 63 yılında ölmüş olan Murena[17] Kaunos'lulara bağımsızlığını vermemiştir. Böylece Murena'nın şereflendirilmesi, birinci Mithridates savaşında Romalılara karşı tutumlarından ötürü zararlı çıktıktan sonra, herhalde sessiz bir umutla Kaunos'luların eski bağımsızlığına tekrar kavuşmak için, kuvvetli Romalılarla yeniden iyi ilişkiler kurmak maksadıyla, yapmış oldukları bir deneme şeklinde açıklanabilir. Murena'nın korsanlarla savaşı, bir liman şehri olarak Kaunos için de yarar sağladığından, şereflendirilmesinin zahiri sebebi olabilir. Muhtemelen εὐεργέτης ve σωτήρ[18] unvanları, Murena'nın korsanlara karşı başarısının, hiç olmazsa bir zaman için, modern araştırıcıların tahminlerinden daha başarılı olduğuna işaret etmektedir.

Babasının atlı heykeli yanında heykeli bulunan oğlu beklenen şekilde, Murena'nın Asia seferindeki ordusunda babasının komutasında çalışan[19], komutanın büyük oğlu Lucius değil, onun Gallia Transalpina'da İ.Ö. 64/63

[12] H. H. Schmitt, Rom und Rhodos, Münchener Beiträge zur Papyrusforschung und antiken Rechtsgeschichte, 40. Heft, 1957, 181/2.

[13] App. Mithr. 23, 89.

[14] Bu, Cic. ad Quint. fr. 1, 1, 30 (İ. Ö. 60) da kaydedilmektedir.

[15] R. Bernhardt, Imperium und Eleutheria, Diss. Hamburg 1971, 142 A. 262.

[16] Kaunos bağımsız bir şehir olarak ilk defa Plin. n.h. 5, 104 te bildirilmektedir.

[17] F. Münzer, L. Licinius Murena 122) RE XIII 1, 1926, 446.

[18] εὐεργέτης ve σωτήρ unvanları için bk. H. W. Pleket, The Greek Inscriptions in the "Rijksmuseum van Oudheden" at Leyden, Leiden 1958 Nr. 5 s. 14; ve A. D. Nock, Essays on Religion and the Ancient World, Oxford 1972, s. 720 v.a.

[19] F. Münzer, L. Licinius Murena 123), RE XIII 1, 1926, 446 v.a.

yılında Legat'ı olarak bilinen ve muhtemelen 59 yılında "kurulischer Ädil" olan[20] küçük kardeşi Gaius'tur. Kaunos'a kendileri hizmet etmedikleri halde, şehre hizmet etmiş olan Romalıların akrabalarına yapılmış çeşitli şereflendirme örnekler gözönünde bulundurulacak olursa[21], bu heykel için Kaunos'lularla Gaius Licinius Murena arasında başka ilişkiler aramaya ihtiyaç yoktur. Yukarıda bahsedildiği üzere Murena'nın atlı heykelinin öte yanında bulunan kaide yüzünden büyük oğlu Lucius'un da Kaunos'ta şerefine dikilmiş bir heykelinin bulunduğuna muhakkak nazarı ile bakılabilir. Bu durumda bu heykeller grubu dikkate alınarak Asia'daki ikâmeti sırasında Murena'nın yanında her iki oğlunun bulunduğu sonucuna varılabilir.

Besbelli Kaunos'lular yalnız şereflendirme ile tekrar bağımsızlıklarına yeniden kavuşma imkânını bulamıyacaklarını gördüler. Ne olursa olsun İ.Ö. 60 yılından önce Rodosluları Roma Senatosuna şikâyet ettiler[22]. Fakat pek dinletemediler. Sonra, eğer olaylar hakkında H. Hommel tarafından ileri sürülen kronolojiyi (aşağı bk.) kabul edecek olursak güney Aiolis'teki Gryneion Apollonunun kehanetine başvurarak ona: "Kendilerine iyi ve faydalı mahsul sağlamak için hangi tanrıların merhametine sığınmaları gerektiğini" sordular. "Eğer Leto'nun oğlu Phoibos'a ve atası Zeus'a taparlarsa kazanaçlı çıkacakları; (sonra) buradaki ağaçlara zincirlerinizi bağlayın" cevabını aldılar. H. Hommel, Philologus 102 (1958), 84 v.a. Kaunos'luların bunun arkasında gizli bir sorusu olduğunu, Rodos'tan bağımsızlıklarını yeniden nasıl kazanabileceklerini sorduklarını düşünmektedir. Bu sorudan hiç haberleri olmamaları gereken Rodosluları nazarı itibara alarak, görünüşte mahsul ile ilgili olduğunu söyleyip asıl soruyu saklamışlardır. Muhtemelen bunun üzerine Kaunos, Strabo'nun bahsettiği (14, 652) Rodos'tan ayrılma denemesine geçmiştir. Fakat Roma Senatosu Kaunos'un bundan böyle de Rodos idaresinde kalmasına karar vermiştir. Fakat Kaunos'lular yüzyılın ortasına doğru amaçlarına ulaşmış, bağımsızlıklarını yeniden kazanmışlardır (yukarı bk.).

Kaunos'un hangi şartlar altında yeniden bağımsızlığına kavuştuğu bilinmediği sürece, bu şereflendirmelerin güçlü Romalıların kararlarında ne derece tesiri olduğunu bilemeyiz. Bağımsızlıklarını yeniden kazandıktan sonra da Kaunos'lular şereflendirme heykelleri ile nüfuzlu Romalıların yüzlerine gül-

[20] F. Münzer, C. Licinius Murena 119), RE XIII 1, 1926, 444; T.R.S. Broughton, The Magistrates... Bd. 2, 170 ve 189.

[21] G. E. Bean, JHS 74 (1954) Nr. 23.24.26 (Burada açık bir şekilde Aulus Afranius'un sadece kardeşi Lucius'un yüzünden şereflendirildiği bildirilmektedir). 28.29.

[22] Cic. ad Quint. fr. 1, 1, 30 (İ. Ö. 60).

meye devam etmişlerdir[23]. Bu şereflendirmeler gittikçe rutinleşen bir görev haline geldikçe[24] daha az politik önem kazanmışlardır. Fakat Murena'nın şereflendirilmesi Kaunos'lular için, onları sonunda başarıya götüren devamlı gayretlerin başlangıcı olmuştur.

[23] G. E. Bean, a.g.e. Nr. 26.27.28.29.

[24] Dion von Prusa, or. 34, 105: Rodoslular bütün valileri şereflendirmeleri gerektiğini söylerler.

Kaunos, Inschrift auf der Basis des Reiterstandbilds des L. Licinius Murena.
Kaunos, L. Licinius Murena'nın atlı heykelinin kaidesindeki yazıt.

Kaunos, Inschrift auf der Rundbasis des G. Licinius Murena.
Kaunos, G. Licinius Murena anıtının yuvarlak kaidesi üzerindeki yazıt.

Kaunos, Statuenbasen für Murena und seine Söhne, Blick gegen das Nymphäum.
Kaunos, Murena ve oğullarının heykel kaideleri; çeşme anıtına (nymphäum) doğru bakış.

Kaunos, Statuenbasen für L. Licinius Murena und seine beiden Söhne.
Kaunos, L. Licinius Murena ve her iki oğlunun heykel kaideleri.

PREHISTORIC METALLURGY - ANOTHER LOOK

PRENTISS DE JESUS

Part I

In the early days of archaeological research in the Near East archaeologists and historians held that there were cultural centers which fostered technical advances and which later spread to other areas. It seemed inconceivable that two different cultures could invent independently the same thing. This was a theorem with which diffusionists saw the evolution of history and prehistory. Expanded research and a second look at the diffusionists' approach has obliged archaeologists to alter somewhat the idea of diffusing centers. Independent invention and development have now become acceptable premises. Diffusionism, although still with us, now sports newer, if somewhat strange, vocabulary[1]. The result of these modifications in method has been a reassessment of previously published archaeological material. But more importantly, standard theories have come under close scrutiny to see whether they measure up to modern archaeological views. Fortunately, many have not stood up, and we are faced with a fresher look at old problems.

Much has already been written about metallurgy in the Near East, and oddly enough, for all its abundance and literature it is the least well understood of any of ancient man's important legacies.

Regarding the history of metallurgy of the Near East, it has at last been recognized that the introduction of metal-using cultures did not come from Azerbaijan and the Caucasus, as was once held by a former generation of archaeologists[2]. Their misinterpretations were not due to reckless guessing but rather to the one-sided and fragmentary aspect of the available archaeological material from which they had to draw conclusions. All due respects to the *bonne volonté* of these early pioneers in archaeology, we must regard many of their theories as non-workable. Independent invention of smelting and the use of bronze is now confirmed. We see that Southeastern European,

[1] C. Renfrew, *The Emergence of Civilisation*, London 1972.

[2] J. De Morgan, *La Préhistoire Orientale*, Paris 1927, Tome III, pp. 162–339 and especially pp. 252–3.

Near Eastern and Middle Eastern cultures often went their own way in many activities as well as metallurgy and despite similarities and contacts with their neighbors[3]. We are hence obliged to look at the development of metallurgy within a smaller sphere.

Anatolia's earliest known metal artifacts come from Çayönü Tepesi in South East Turkey[4], generally dated around the end of the VIIIth Millennium B.C. The metal is native copper which has been worked into simple tools. Malachite ore from this site is also reported, but it is not yet obvious whether ore was smelted by the inhabitants of Çayönü. There seems to have been some early attraction to malachite stone, probably as ornament. Professor Ralph Solecki found a small malachite bead at Shanidar, Iraq[5] dated to some 10,000 years ago. Trade with ore-rich Anatolia, even at that time, is suggested[6].

Dated slightly later than the Çayönü finds is a small hammered bead of native copper from Ali Kosh, Iran[7]. This artifact probably has no relation to Anatolia, since native copper and copper ores are known in Central and Western Iran[8]. In fact, the metallurgy which seems to develop in Western and North Western Iran in the Vth and IVth Millennia B.C. may bear only distant relationships with metallurgical advances witnessed in the North West[9].

Copper and lead beads were reported at Çatal Hüyük as early as level

[3] C. Renfrew *P. P. S.* 1969, pp. 12–47; H. C. Bhardwaj, *Indian Journal of History and Sciences* 5, no. 2, pp. 229–237; K. Branigan, *Copper and Bronze-working in Early Bronze Age Crete*, Lund 1968.

[4] The date of these object varies, according to interpretation, from 6600 B. C. to 7000 B. C. *Radiocarbon* 10, 1968, pp. 108 ; P. J. Watson, *Chronologies in Old World Archaeology*, pp. 61-100; A. C. Wehrwein, *New York Times*, Oct. 22, 1964.

[5] R. Solecki, *Antiquity* XLIII, 1969, pp. 311–314.

[6] Anatolian links are also borne out by the presence of obsidian at Shanidar. Cf. Solecki *ibid.*, pp. 312–314 and map p. 313.

[7] Dated 6750–6000 B. C., F. Hole and K. V. Flannery, *P. P. S.*, 1967, p. 177. A copper bead is also reported at Ramad (Iraq), A. Fr. Lanord and H. de Contenson, *Paléorient*, Vol I, 1973.

[8] For Central Iranian deposits, M. Maczek *et al*, *Arch. Aus.* 10, 1952, pp. 61–69 and map p. 66; for South West and North West Iran, J. R. Caldwell, *Tal-i-Iblis*, Illinois 1967, map p. 12; for general deposits in Iran, W. B. Fischer, *The Land of Iran*, Cambridge 1968, pp. 501–5 and figs. 119, 120; for recent and detailed geological reports, especially D. Bazin and H. Hubner, *Copper Deposits in Iran*, Report no. 13, Tehran 1969, pp. 4–9 and plate XXXV; and A. Brants *et al*, *The Geological Environment of the Chahar Gonbad Copper Mine*, Report no. 16, Tehran 1969, for a copper mine in the Kerman Province.

[9] P. R. S. Moorey, *Iran* VII, 1969, pp. 131–53, especially pp. 132–3.

IX (ca. 6400 B.C.)[10] and again in levels VIII and VII (ca. 6280–6050 B.C.)[11]. In level VII (ca. 6200–6050 B.C.) small copper tubes were found[12], and in level VI (6050–5880 B.C.) in shrine burials men as well as women were found wearing copper rings[13]. Shrine VI A 25 yielded a string skirt with decoration of small copper *tituli*[14]. However, the most interesting of finds from the metallurgical point of view was the small piece of copper slag[15] from House E in level VI A 1 (ca. 5880 B.C.), indicating that we may have but a sketch of the metallurgical activity at that time. With a mere 5% of the mound of Çatal Hüyük excavated there will be undoubtably new evidence occurring to elucidate the metallurgical industry once excavations begin there again. At present one notices the poverty of copper finds with regard to the practice of copper smelting, but perhaps the demand for the metal did not warrant greater production. It is interesting to note that after level VI no copper occurred. Whether this is due simply to chance or whether there was some sort of a cut in production is not possible at this moment to say.

In later periods copper is even less represented. Hacılar's meager metal finds can be summed up as follows: "The use of copper is certain, and traces of it have survived as green stains on the interiors of pots in Hacılar VII and VI or as minute fragments (of beads, pins or awls) in Hacılar II A, II B and I A–B. The shape of not a single metal object was recognizable, and finds of copper are rare"[16].

It is Mersin which, on the chronological scale, next produces metal artifacts. Two pins, one from level XXII and one from level XXI, can be dated roughly to ca. 5000 B.C.[17]. One of the pins, termed "nail-headed" can almost be called sophisticated for the period, as it is made of two pieces. One cannot assume with certainty that this innovation took place at Mersin. Hence, it is possible that other examples exist elsewhere.

One suspects that around this time or somewhat later (ca. 4750 B.C.) metallurgy as an industry is beginning to get a foothold in Southern Anatolia,

[10] J. Mellaart, *Çatal Hüyük*, London 1967, p. 207. Dates used for Çatal Hüyük in this article are taken from *ibid.*, p. 52.

[11] J. Mellaart, *An. St.* XVI, 1966, p. 183 and J. Mellaart, *An. St.*, XIII, 1963, p. 99.

[12] J. Mellaart, *An. St.* XIV, 1964, p. 114.

[13] J. Mellaart, *ibid.*, p. 95.

[14] J. Mellaart, (supra n. 10) 219 and J. Mellaart, (supra n. 12) 114.

[15] J. Mellaart, (supra n. 12) 114 and H. Neuninger *et al*, *Arch. Aus.* 35, 1964. pp. 98–110 for analysis and identification.

[16] J. Mellaart, *Excavations at Hacılar* Vol. I, Edinburgh 1970, p. 153.

[17] J. Garstang, *Prehistoric Mersin*, London 1953, p. 76, fig. 50.

for it is now that we have the appearance of one of the most important artifacts of the Chalcolithic Period - the Can Hasan macehead from level IIb[18]. Now displayed in the Ankara Museum, this macehead is a considerably large piece of native copper weighing on the order of 200 grams and roughly in the form of a ball. The significance of this piece lies not in its size but in its workmanship. Through the center of the macehead is a shaft-hole, roughly 2 centimeters in diameter. It seems likely that this hole was formed during casting and not drilled afterwards. Shaft-hole casting in Anatolia is hence known here for the first time. Other contemporary examples may be exhumed later. but the Can Hasan macehead is no doubt a milestone in metallurgical history.

Attention now should be brought to Mersin, as it is this coastal site that will bear us the best indication of technical advances in metallurgy. In level XVII (ca. 4300 B.C.) a large copper chisel was found, and a seal attributed to level XVI, almost contemporary with the latter, was analyzed by Professor Ufuk Esin who found it to be definitely bronze[19]. This seal containing 2.6 % tin could be no other than an intentional bronze using smelted copper and smelted tin. Hence, somewhere around 4300 B.C. this charming little seal ushered in *de facto* the Bronze Age in Anatolia.

An adze and chisels also occurred in level XVI[20] along with six roll-headed pins.[21] As if to suggest that smelting was performed on the site, a piece of copper ore, also from level XVI, was found in courtyard 179[22].

Beycesultan is the only site to date which produced metal finds of any note comparable to those of Mersin. Although the date of Beycesultan's metalwork and early periods may be doubted by some, there is good indication still that the excavator's dates are high enough to fall somewhere in the middle of the Vth millennium.[23] In level XXXVIII a lunate-shaped piece of copper with

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[18] D. French, *An. St.* XII, 1962, p. 33. For analysis, U. Esin, *Kuantatif Spektral Analiz...*, İstanbul 1967, U. Ed. Fak. Yayın. No. 1427, p. 130, no. 17635.

[19] J. Garstang, (supra n. 17) pp. 108–9. For analysis, U. Esin, (supra n. 18) 144, no. 17871.

[20] J. Garstang, (supra n. 17) 108 and fig. 80 b, p. 132.

[21] *Ibid.*, p. 139, fig. 85 and pp. 137–40. For analyses, of axes, U. Esin (supra n. 18) 144–5, nos. 17873, 17874; of the pins, *ibid.*, p. 144, nos. 17875, 17876, 17877, 17878, 17879; for a chisel, *ibid.*, p. 144, no. 17872.

[22] J. Garstang, (supra n. 17) 137.

[23] J. Muhly, *Copper and Tin: The Distribution of Mineral Resources and the Nature of the Metals Trade in the Bronze Age*, Transactions published by the Conn. Acad. of Arts and Sciences, Hamden, Conn., 1973, pp. 208 and 379 note 257. For defence of his dating methods cf. J. Mellaart, *An. St.* XX, 1970, pp. 55–6.

triangular section was found. Succeeding levels gave an array of artifacts, none of which is bronze[24].

Mersin, however, still continues to give us bronze artifacts in the Late Chalcolithic Period. An unpublished toggle pin from either level XIV or XIII (i.e. ca. 4000 B.C.) was found by Professor Esin to contain 1.3% tin.[25] Hence, most likely an intentional bronze. A second artifact, a point or borer, from level XIV contained 2.1% tin, another intentional bronze[26].

The advent of tin at Mersin, a coastal site, raises certain questions. Why did it occur first there? Was the presence of this tin due to maritime trade or to land-based trade? In levels XXI–XVI a strong Halafian influence is felt, and Professor Garstang appropriately described the extent of this influence as "the Halafian impact." He seemed to want to suggest that not only was this due to trade but to the influx of some Halafian people[27].

It has been stated that there was an intrusive culture from the Central Anatolian Plateau in level XVI[28]. Yet, one feels that the Halafian impact is still being felt but now with a distinctive Ubaidian flavor[29]. The superior technique of Halafian pottery found at Mersin could have developed concurrently with the introduction of bronze into the area. Were it not for the preponderant Halafian element at Mersin one may feel free to suspect that bronze was discovered at Mersin itself. Could bronze technology, then, have come from the East? If the Halafians are, indeed, responsible for the introduction of bronze into Anatolia, we may be getting closer to the inventors of bronze itself. The more typically Halafian site of Tall Arpachiya yielded the first metal in Northern Mesopotamia[30]. Although it is not known whether these pieces are of copper or bronze, they date to approximately the same time as the bronze seal at Mersin. Moreover, the stamp-seals from Arpachiya are not totally unlike the Mersin example[31].

It may be a weak argument to say that bronze-working came from a culture whose metal artifacts have not yet been shown to be particularly outstan-

[24] D. Stronach in Lloyd and J. Mellaart, *Beycesultan* Vol. I, London, 1962, p. 198 for catalog of metal artifacts of the Chalcolithic Period. For analyses, U. Esin, (supra n. 18) 128–9.

[25] U. Esin, (supra n. 18) 145, no. 17884.

[26] *Ibid.*, p. 145, no. 17882.

[27] J. Garstang, (supra n. 17) 102.

[28] J. Mellaart, *Anatolia before c.* 4000 *B. C. and* 2300–1750 *B. C.*, 1967, C.A.H. Fasc. 20, p.24.

[29] J. Garstang, (supra n. 17) 148, fig. 92 and p. 143.

[30] Consisting of a few pins and a chisel, M. E. L. Mallowan and J. Cruikshank, *Iraq* II, pt. I, 1933, p. 104 and Plate X.

[31] *Ibid.*, p. 93, fig. 50 and plate VII.

ding, apart from their antiquity, but it must be pointed out that of the small number of metal artifacts of Halafian date none has been analyzed[32]. It must also be stressed that few Halafian sites are well-known and even fewer have been excavated. We are also obliged to admit that due to abundant Halafian finds in the ore-bearing regions of South East Turkey[33] and the excellent quality of their handicrafts that the people of Halafian culture were certainly capable of practicing bronze metallurgy[34].

That Anatolian cultures had been using and smelting copper before the middle of the Vth millennium B.C. has been described above, but it is quite possible that the secret of bronze-working (and especially the supply of tin) had eluded them until contact with the Halafian culture. At that time the Anatolian copper-smith met his more technically advanced counterpart from the East and was quick to comprehend the advantages of bronze over copper. If we have not resolved the important problem of tin supply, a closer look at the Halafian legacy in Anatolia adds a new dimension to the development of metallurgy in the Near East. Consequently, we may have to refrain from trying to fit Chalcolithic (i.e. Halafian) Cilicia into a Central and Western Anatolian complex, as its affinities seem oriented towards the East and fall into the Halafian galaxy.

Part II

The evidence for the understanding of metal-producing techniques becomes somewhat clearer during the first half of the Third Millennium B.C. However, if we can see a definite evolution in different areas of Anatolia, correlation between these areas is difficult, as much for metallurgy as for other archaeological material[35]. The nature of the evidence so far suggests little sharing of wealth between Central Anatolia and the North West. In other words, there seems to have been little contact between the two areas. This

[32] M.E.L. Mallowan and J. Cruikshank, (supra n. 30) 104.

[33] A. Dönmez and W. C. Brice, *Iraq* XI, 1949, pp. 44–58, pls. XXXI (1–6), XXXIII (b); J. Mellaart, *The Earliest Settlements in Western Asia*, 1967, C. A. H. Fasc. 59, pp. 31–36; P. J. Watson in M. Mellink, *AJA* 73, 1969, p. 205; H. Hauptmann in Mellink, *AJA*, 77, 1973, p. 171; *Paléorient*, Vol. I, 1973, P. J. Watson and S. Le Blanc, pp. 119-133.

[34] G. Roux, *Ancient Iraq*, Middlesex, 1966, p. 66; V. G. Child, *The Most Ancient East*, London, (1928) 1969, pp. 111-112 and note 31.

[35] J. Mellaart, p. 368 in *The Cambridge Ancient History: The Early History of the Near East* Vol. I Pt 2, London 1971.

tells us that they evolved separately, each drawing on its own sources of livelihood. On this premise and in front of the evidence discussed below, we may assume that the metallurgy of the Central Anatolian Plateau is unrelated to that of the Anatolian North West.

Troy I does not produce a massive array of metalwork but suggests a slow and definite use of copper for a variety of objects. Blegen as well as Schliemann found metal artifacts at Troy I[36], and of those analyzed only one is a tin bronze[37]. The piece is an unidentifiable fragment having a content of 10.18 % tin. There are other objects of relatively pure copper and still others which have a high content of arsenic.

At EB I Thermi, Town I, awls, pins and drills were found, one of which is bronze[38], and curiously, a tin bracelet of this same period was also uncovered.

In Central Anatolia, at Alishar "Late Chalcolithic" (considered here to be EB I), there are three fragments which are definitely tin bronzes[39]. Generally speaking, the metal artifacts from Alishar are more for decorative purposes than utilitarian, contrary to those of Troy[40]. Alishar seems to have established a tin source different from that of Troy, conceivably situated somewhere near the Pontic coast[41].

If it has been said that Central Anatolia was somewhat behind in cultural achievement, it was not lagging in metallurgical technology. It was at least equal to that of Troy. It is nevertheless evident that there is active trade going on in the North West along the coast. This may very well have been

[36] A correction in Blegen's catalogue is necessary here. The fragment no. 33–319 from Troy I c (Blegen *et al*, *Troy I*, Princeton 1950, text p. 104, pls. p. 215) has been identified as a piece of ceramic.

[37] Stefan Przeworski, *Opera Selecta*, Warsaw 1967, p. 202, no. 30 and H. Schmidt, Berlin 1902, no. 6667. Other analyses of Troy I can be found in S. Przeworski, *ibid.*, p. 202 and R. Tylecote., *Bull. of the Historical Metallurgy Group*, No. 7. July 1966, pp. 20–29, nos. 1, 2, and 37. 4.

[38] W. Lamb, *Thermi*, Cambridge 1936, p. 215, no. 31, 64.

[39] Von Der Osten, *The Alishar Hüyük*, Chicago 1937, OIP XXX, nos. e 1801 p. 339 and e 2465 p. 338. Also, E. F. Schmidt, *The Alishar Hüyük*, Chicago 1932, OIP XIX, p. 29.e

[40] H. H. Von Der Osten, *The Alishar Hüyük*, Chicago 1937, OIP XXVIII, p. 31.

[41] Research by the author in the field with Ergun Kaptan of the Natural History Museum of M.T.A. (Mineral Exploration Institute of Turkey) has tackled the problem of ancient mining and metal supplies. A project begun in 1973 located smelting sites in Central Anatolia. It is the feeling of the author that there are at least two sources of tin supply in Anatolia. One would be available to the Western Anatolian coastal sites and another exploitable by the Centra Anatolians. Results of this and other research are forth-coming.

the case in Central Anatolia, though on a smaller scale. But since only Alishar at the moment represents the area in EB I one cannot be sure as to what extent it had interconnections with its neighbors. More published stratified material is necessary before we can really understand what is going on.

When comparing Central and North Western Anatolia we must bear two points in mind. First, the nature of the metalwork at Alishar suggests that it is not the heart of this tradition but a peripheral example of it. Sophisticated tin and copper smelting technologies are reflected in the analyses of the Alishar material. This technology was not developed to produce only pins and trinkets such as at Alishar but for a more ambitious production of bronze and copper artifacts. This tells us that the main stream of the EB I metallurgy at Alishar exists elsewhere.

The second point to bear in mind is that the metallurgical technology at Troy is closer to the impetus which pushed Trojan metalwork to its flowering.

In the North West during the second phase of the Early Bronze Age we see an evolution of what took placein EB I. The repertoire of the Trojan smith multiplies tenfold. In fact, the great array of metalwork leads us to suspect that perhaps we have missed a step in the evolution. Troy II metalwork, including jewellery, seems far too developed to be but a simple continuation of Troy I technology. In Troy I we have artisanal production of pins, borers and utility tools, while in the succeeding period we have a variety of jewellery collected in hoards, heavy battle-axes, knives, daggers and spearheads as well pins and rings. What is lacking is evidence, somewhere, of the intermediary forms and techniques between EB I and EB II.

Decerative artifacts especially retain our attention. There is no concrete style in the repertoire of Troy II jewellery. It belies eclecticism, almost gaudiness. The gold pins are disproportionate, imposing and over-decorated, and the earrings mix forms which are not harmonious[42]. If Trojan culture is inherent in these artifacts its specific elements are not readily discernible. The producer of these pieces seems to have drawn on other art forms and perhaps even other technologies.

It has been stated that the destruction of Troy I brought an end to the culture of that site and precipitated the flight of the people to other parts of Anatolia[43]. This upheaval seems to have affected as well other Troy culture

[42] H. Schmidt (supra note 37), plate II no. 6133, p. 233 no. 5878, p. 234 nos. 5879 and 5880.

[43] J. Mellaart (supra note 35), 384.

sites in the North West and along the Eastern Aegean coast[44]. Hence, the destruction is on the order of an invasion.

An alternative view suggests that the destruction of Troy I was due to an internal calamity and emphasizes cultural continuity into Troy II[45]. Schliemann, himself, had still another view, "It is impossible to ascertain from the ruins of this first settlement whether it was peacefully abandoned by its inhabitants or whether it was destroyed by the hand of an enemy, for there are no signs of either a partial or a general catastrophe."[46]. He had apparently missed the signs of conflagration which were later revealed by the University of Cincinnati excavations[47].

If the destruction was due to outsiders from the Aegean[48] and the Troy I settlers fled, the Troy II invaders[49] either brought with them their metallurgical technology[50] or maintained their contacts with others who possessed this technology. In either case it is unlikely that the tin source was different from that of Troy I. It is also probable that the copper and precious metal sources were the same.

Troy II material looks like a commercial enterprise, especially when we observe that contacts outside of Anatolia grow considerably during this period. As for the metals, of those analyzed, Troy I produced only one tin bronze, two arsenical bronzes and four coppers. In Troy II, twenty-seven are tin bronzes, four are arsenical bronzes and eight are smelted or native coppers. This is, of course, considering all of Troy II, including II g. This sudden spurt of wealth would seem to indicate that the Troy I people were not responsible for it, though somehow they may have had a hand in it in the beginning. The forces at work which brought about the enrichment of Troy II, and especially Troy II g -- Schliemann's "Burnt City", are not fully understood. Only by further excavation in the Troad as well as in Thrace will the problem become clearer.

On the Central Plateau another situation unfolded. In EB II Alishar shows no outstanding metal types. Of those pieces analyzed there are eight

[44] *Ibid.*, pp. 383–4.

[45] C. W. Blegen, *Troy*, London 1963, p. 59 and C. W. Blegen (supra note 36), p. 204.

[46] H. Schliemann, *Troja*, London 1884, p. 39.

[47] C. W. Blegen (supra note. 36), 39.

[48] J. Mellaart (supra note 35), 384, has suggested Thrace.

[49] The new "invaders" may conceivably be attributed to Troy II b, since new cultural additions occur at that level. J. Mellaart, *The Chalcolithic and Early Bronze Ages in the Near East and Anatolia*, Beirut 1966, p. 140.

[50] J. Mellaart (supra note 35), 392.

tin bronzes, six arsenical bronzes and seven coppers. This is a slight increase in the proportion of tin bronzes to coppers and arsenical bronzes from the previous period[51], but the metal repertoire in EB II does not seem to have widened much more than to the production of trinkets and pins. Tin trade, if not tin production, has increased in this period. The smith now finds tin desirable though not necessarily indispensable, since pins of copper or bronze are produced with equal workmanship. The smith has learned to work with what he has and is, hence, always looking for ways to overcome his difficulties[52]. whether they be shortages of metal supply or techniques in workmanship.

Around the middle of the IIIrd Millennium B.C. Alishar is clearly upstaged in the domain of metalwork by the Royal Tombs of Alaca which best represent the craft in the area. The tombs, themselves, have consistantly come under revision, and although authors do not entirely agree on their stratigraphic positions the popular tendency is to place them after 2500 B. C. Professor Bittel lucidly explains the problems involved not only for the dating of the tombs but for establishing relationships between the Central Anatolian material (Hüyük and Alaca) and that of the Troad[53].

It may generally be stated that that the Tombs fall into a period between 2400–2200 B.C., in other words, the latter part of EB II or the beginning of E B III in Central Anatolia[54].

The exhaustive inventory need not be listed here. One might point out, however, not only the expertise of the workmanship but also the great quan-

[51] In Alishar EB I the ratio is 3:3:3.

[52] Four of the Alishar pieces show high concentration of lead. Could it be that the smith mistook lead for tin? Cf. analyses, H. H. Von Der Osten (supra note 39), p. 339 nos. 700 and e 860; and U. Esin (supra note 18), pp. 124–5 nos. 17769 and 17770.

[53] K. Bittel, "Beitrag zur Kenntnis anatolischer Metallgefässe der zweiten Halfte des dritten Jahrtausends v. Chr." *Jahrbuch des deutschen Archäologischen Instituts* 74, pp. 25–31. The similarities in metal vases and jewellery of the Troad and Central Anatolia (Hüyük and Alaca) pose an interesting problem. It may be premature to try to draw conclusions on these similarities until more than just metalwork is available. Although trade may account for the parallels in metalwork, one must also remember that Çanakkale has known copper ore deposits, and precious metals and ores were accessible in the immediate vicinity of Troy. Gold deposits have been reported in North Eastern Greece and on Thasos, L. De Launay, *La Géologie et les richesses minérale de l'Asie*, Paris 1911, pp. 615–619; and in the Troad, C.W. Ryan, *A Guide to Known Minerals in Turkey*, Ankara 1960, pp. 2–3; and H. Schliemann, (supra note 46), pp. 49–50. Copper sources are known in the Anatolian North West, *Turkiye'de Bakır, Kurşun ve Çinko Yatakları*, Ankara 1966, MTA Pub. no. 133, pp. 66, 82–86 and 88.

[54] J. Mellaart, *An. St.* VII. 1957, p. 66 and M. Mellink, in R. W. Ehrich (Ed.), *Old World Chronologies*, Chicago 1954, pp. 116–7.

tity of metal in kilograms alone. Gold and silver were used freely, as if new sources of both had been discovered. Luxury goods predominate, suggesting that the people of Alaca EB II culture were not bellicose. On the contrary, they seem to have been quite religious, as implied by the many sun disks, standards, and other ritual material. They may even have enjoyed the pomp and ceremony of court-life. It is indeed surprising that a large palatial structure of some sort has not been uncovered.

Of the metal analyzed twenty-one are tin bronzes, seven are arsenical bronzes and seventeen are smelted or native coppers, a net increase of the use of tin over EB I at Alishar.

The origins of the Alaca EB II culture is at present unknown, but one is able to make a calculated guess. Professor Özgüç stated in 1958 that indications point to the Pontic region, especially in the area around Tokat-Amasya, for the heartland of the Alaca culture[55]. This opinion still stands, especially in the light of the later-dated Horoztepe material. Horoztepe seems at home in the North, whereas the Alaca EB II culture was definitely a new-comer to the south. The Alaca people arrived with a fully developed metallurgy which they presumably had acquired in the North. One might point out here that the area from Merzifon through Horoztepe to Erbaa and beyond is known to be copper ore-bearing. Ancient mines and smelting sites in this area are not only possible: they are probable.

One would expect outposts to fade first when they could no longer draw stimulus or livelihood from their mother culture. Alaca may very well have been in this situation. It has been said that the Alaca Tomb culture came to an end in level 5 due to a violent earthquake. This does not agree with the geologists' view which does not place Alaca in an earthquake zone[56]. There are nevertheless signs of violence in level 5 which seems to have brought the fall of the ruling class.

The very promising excavations by Raci Temizer at Eskiyapar may do much in explaining what actually happened during the Royal Tomb period.

Horoztepe most definitely represents a continuation of the Alaca culture in the North. Yet here we find more daring uses of metal. For example, the bulls' horns on the standards sweep gracefully up and far away from their heads[57]. Such flourish and delicacy are not seen at Alaca where the standards

[55] T. Özgüç, *Horoztepe*, Ankara 1958, p. 59.

[56] E. Ilhan, in A. S. Campbell (Ed.), *Geology and History of Turkey*, Tripoli 1971, pp. 434 and 432 (map).

[57] T. Özgüç (supra note 55), pl. XVII no. 5 a–b.

have a tendency to be elegant and heavy. And unlike Alaca there is an additional war-like character to the Horoztepe repertoire. Crescented axes occur for the first time in Central Anatolia. Thrusting swords, daggers and halberds are present in abundance. This array of weaponry suggests some kind of re-grouping of the Alaca-Horoztepe people in response to an outside threat[58].

What happened to the Alaca-Horoztepe culture at the close of EB III? Here the archaeological record is a blank. We know not whether the culture persisted for a few centuries afterward. We do know, however, that its influence in the greater loop of the Halys had been entirely wiped out. We suspect that the growing economic and political power of the Cappadocians to the South far out-flanked the Alaca-Horoztepe people. Long-distance trade now seems to have established alliances with which the Alaca-Horoztepe people could not contend.

The period of the Alaca-Horoztepe culture, as we know it, was a brief blossoming of metallurgical activity. Comparable creativity and ingenuity occurred neither before nor after in all of Central Anatolia.

Central and North Western Anatolia are not the only two areas to have developed metallurgical traditions. As we have seen above there are forces early at work in Cilicia and in the South East. They continue to develop more or less independently of the rest of Anatolia until the establishment of the trading colonies[59].

[58] For a possible identification of this threat, J. Mellaart (supra note 35), p. 686.

[59] These areas will be treated in another article by this author. In preparation. The author wishes to express his thanks to Assistant Dr. Aykut Çınaroğlu of the Department of Archaeology at Ankara University for having translated into Turkish the summary of this article.

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THE GREEK DARK AGES, by V. R. d'A. Desborough. Pp. 388, figs. 39, pls. 60, map. Ernest Benn, London, 1972. £ 5.00.

Between the collapse of Mycenaean civilization and the emergence of Archaic and Classical Greece lies a "dark age" of several centuries about which we are lamentably ignorant. Mr. Desborough has chosen to study the darkest period of all, *ca.* 1125–*ca.* 900 B.C. From over 150 sites (the annotated index is worth the price of the book), some incompletely published, others with highly contradictory evidence; and from a knowledge of details of other sites as yet unpublished, Desborough attempts a synthesis, admittedly tentative, given the unsatisfactory nature of the evidence.

He identifies an Early Dark Age, *ca.* 1125–1075, a disjointed time marked by two phenomena. 1) A "new Sub-Mycenaean culture," characterized principally by a debased form of Mycenaean pottery distinct from and subsequent to Furumark's LH III Cl, and characterized to a lesser extent by single inhumations of the dead in cist graves and the appearance of long pins and fibulae, breaks away from its Mycenaean predecessor in central mainland Greece. 2) The rest of Mycenaean civilization and many of its settlements are terminated without replacement. Causes for these changes are obscure, although possibilities include one or more of the following: internal weakness in the Mycenaean social structure, Rhys Carpenter's theory of a radical change in climate, or an invasion from the north (the traditional Heraclid return.) Unfortunately, these proposed causes have not been confirmed archaeologically.

The beginning of Desborough's Late Dark Age is in the middle of the eleventh century, coincident with the invention in Athens of another pottery style, the Protogeometric. This second period is prosperous, and foreign contacts become common. Athens exports colonists to Ionia and Protogeometric pottery in all directions. Cypriot metal and the techniques for its working are imported to Athens and Euboea. Inhumation starts to be replaced by cremation in pots, although exceptions and variations abound. The climax of the PG style and the LDA period comes about 950. In the half-century thereafter the rest of Greece starts to catch up with Athens. Great experimentation everywhere in pottery results *ca.* 900 in a new style, the Geometric, and in a general air of stability and progress, at which point Desborough terminates his Late Dark Age.

Desborough's method of surveying each of these periods is to take up the evidence geographically in the manner of his *Protogeometric Pottery* (1952), a work which provides the skeletal structure of this book, particularly the relative and absolute chronologies. A short section on the types of material evidence attests the poverty of the data. Only a handful of sites provide evidence of construction, and only one, Karphi, has a plan, although Iolkos and Old Smyrna may have them eventually. Tombs, sanctuaries, the dress accessories noted above, armor (two helmets and seven shield-bosses), weapons, and metals receive summary treatment. Ancient literary accounts and their contradictions receive even shorter consideration: "...there were kings, there were movements of people - - - but that is all." The skeleton, therefore, is more prominent than the flesh, and therein lies a major problem.

Athens, because of the excellence of its Protogeometric pottery, plays a disproportionately large role in Desborough's account of the progress of the LDA. Thus four PG vases at Knossos, two at Kanli Kastelli, and none in the Mesara are said to confirm a north-south flow. Elsewhere, where such statistics do not fit the general picture provided by the pottery, they are discarded as irrelevant. Of the long iron dress pins with bronze globes Desborough writes: "This remarkable, and evidently artistically pleasing, combination was characteristic of Athens, so much so that it must surely have been invented there." Is this reasoning not circular? Such an intense focus also ignores possible connections with other areas in the Mediterranean. Aside from a number of undocumented "northern influences" nothing from the outside worth discussing seems to have entered the Greek world for over two centuries.

These northern influences are a problem partly because of the layout of the book. The text is generally unfootnoted, but one can refer to the excellent plates, figures, and site index for details. Unaccountably, no such information is provided for the areas from which influence is so often said to have come. Thus one must take much on faith, for the internal evidence is shaky. If the destruction of Teichos Dymaion turns out to be late rather than early (as suggested by the "decadent and chaotic" pottery), or if the gap at Iolkos is longer than Verdhelis first thought, or if Snodgrass is correct in his assertion that Barbarian Europe lagged three to four hundred years behind Greece in the development of iron-working (*PPS* 31 (1965) 232ff.), then not much of an archaeological argument can be made for a northern invasion.

This book's principal virtue is that an authority on the period, knowing well that the evidence which produced his conclusions may be out of date

within a decade, has nevertheless put himself on record. *The Greek Dark Ages* should definitely, as Desborough hopes, stimulate others to further and deeper research.

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