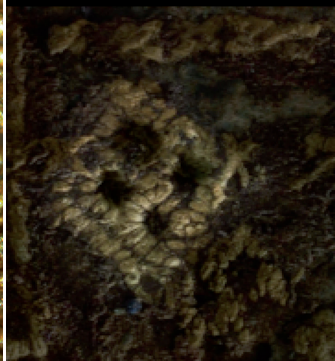
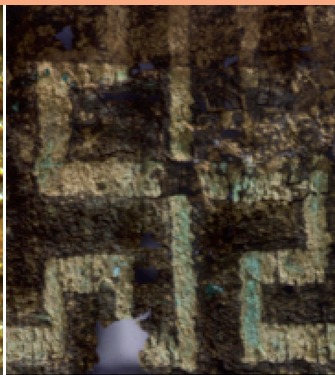
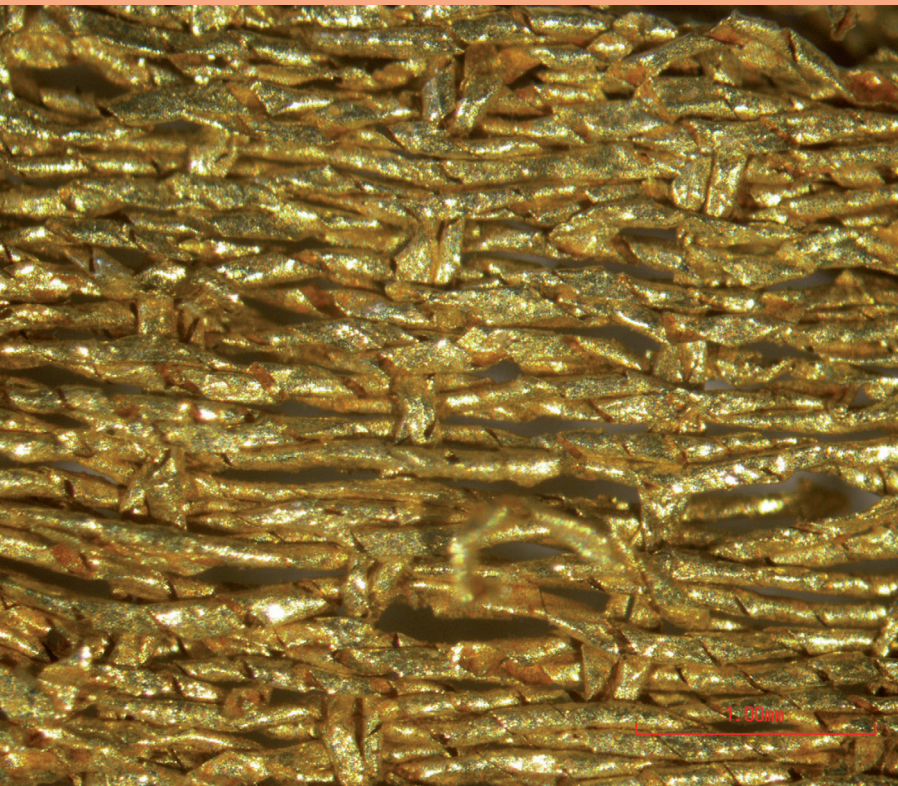




TEXTILES AND DYES IN THE MEDITERRANEAN ECONOMY AND SOCIETY

*Maria Stella Busana, Margarita Gleba, Francesco Meo
and Anna Rosa Tricomi (eds.)*



Textiles and Dyes
in the Mediterranean
Economy and Society



Participants of the VI *Purpureae Vestes* International Symposium on Textiles and Dyes in the Ancient Mediterranean World
Padova - Este - Altino, Italy 17 – 20 October 2016

PURPUREAE VESTES VI
Textiles and Dyes in Antiquity

Textiles and Dyes
in the Mediterranean
Economy and Society

**Proceedings of the VIth International Symposium
on Textiles and Dyes in the Ancient Mediterranean World
(Padova - Este - Altino, Italy 17 – 20 October 2016)**

*Maria Stella Busana, Margarita Gleba, Francesco Meo
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2018

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Conference Website

<http://purpureaevestes.weebly.com/>

ABBREVIATIONS

<i>AA</i>	<i>Archäologischer Anzeiger</i>
<i>AAAd</i>	<i>Antichità Alto Adriatiche</i>
<i>AAIpi</i>	<i>Archeologia delle Alpi</i>
<i>ACalc</i>	<i>Archeologia e calcolatori</i>
<i>ActaInstRomSue</i>	<i>Acta Instituti Romani Regni Sueciae</i>
<i>AdI</i>	<i>Annali dell' Istituto di corrispondenza archeologica</i>
<i>Aegyptus</i>	<i>Aegyptus. Rivista italiana di egittologia e di papirologia</i>
<i>Aevum</i>	<i>Aevum: Rassegna di scienze storiche, linguistiche e filologiche</i>
<i>AHAMadrid</i>	<i>Anales de Historia del Arte, Universidad Complutense, Madrid</i>
<i>AIONArch</i>	<i>Annali dell' Istituto universitario orientale di Napoli. Dipartimento di studi del mondo classico e del Mediterraneo antico. Sezione di archeologia e storia antica</i>
<i>AJA</i>	<i>American Journal of Archaeology</i>
<i>AJP</i>	<i>American Journal of Philology</i>
<i>AmAnth</i>	<i>American Anthropologist</i>
<i>AmJAncHist</i>	<i>American Journal of Ancient History</i>
<i>AnalP</i>	<i>Analecta papyrologica</i>
<i>AnatSt</i>	<i>Anatolian Studies</i>
<i>Ancient Textiles</i>	<i>C. Gillis and M.-L. Nosch (eds.), Ancient Textiles, Production, Craft and Society, Proceedings of the First International Conference on Ancient Textiles, held at Lund, Sweden and Copenhagen, Denmark, on March 19-23, 2003, Oxford 2007.</i>
<i>AnnRevAnth</i>	<i>Annual Review of Anthropology</i>
<i>AntJ</i>	<i>The Antiquaries Journal</i>
<i>AntK</i>	<i>Antike Kunst</i>
<i>AntTard</i>	<i>Antiquité tardive. Revue internationale d'histoire et d'archéologie</i>
<i>AntW</i>	<i>Antike Welt: Zeitschrift für Archäologie und Kulturgeschichte</i>
<i>APAAnthAss</i>	<i>Archaeological Papers of the American Anthropological Association</i>
<i>APS</i>	<i>American Philosophical Society</i>
<i>AqNos</i>	<i>Aquileia Nostra</i>
<i>Archaeology</i>	<i>Archaeology CIETA</i>
<i>ArchCla</i>	<i>Archeologia Classica</i>
<i>ArchJ</i>	<i>Archaeological Journal</i>
<i>ArchKorrBl</i>	<i>Archaeologisches Korrespondenzblatt</i>
<i>ArchPF</i>	<i>Archiv für Papyrusforschung und verwandte Gebiete</i>
<i>ArchVen</i>	<i>Archeologia Veneta</i>
<i>Aristonothos</i>	<i>Aristonothos. Scritti per il Mediterraneo antico</i>

<i>ARP</i>	<i>Accordia Research Papers</i>
<i>ATN</i>	<i>Archaeological Textiles Newsletter</i>
<i>ATR</i>	<i>Archaeological Textiles Review</i>
<i>AttiIIPP</i>	<i>Atti della Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria, Firenze 1973-</i>
<i>AttiMemMagnaGr</i>	<i>Atti e memorie della Società Magna Grecia</i>
<i>AttiMGrecia</i>	<i>Atti del Convegno di Studi sulla Magna Grecia (Taranto 1961-), Napoli-Taranto 1962-</i>
<i>AttiPPE</i>	<i>Atti dell'Incontro di Studi "Preistoria e Protostoria in Etruria"</i>
<i>AttiVen</i>	<i>Atti. Istituto veneto di scienze, lettere ed arti</i>
<i>BA</i>	<i>Bollettino di archeologia</i>
<i>BABesch</i>	<i>Bulletin antieke beschaving. Annual Papers on Classical Archaeology</i>
<i>BAntFr</i>	<i>Bulletin de la Société nationale des antiquaires de France</i>
<i>BAProv</i>	<i>Bulletin archéologique du Provence</i>
<i>BASP</i>	<i>Bulletin of the American Society of Papyrologists</i>
<i>BClevMus</i>	<i>The Bulletin of the Cleveland Museum of Art</i>
<i>Bdl</i>	<i>Bollettino dell'Istituto di corrispondenza archeologica</i>
<i>BerRGK</i>	<i>Bericht der Römisch-Germanischen Kommission</i>
<i>BICS</i>	<i>Bulletin of the Institute of Classical Studies</i>
<i>BMMA</i>	<i>Bulletin of the Metropolitan Museum of Art, New York</i>
<i>BMOP</i>	<i>The British Museum Occasional Papers</i>
<i>BMTRB</i>	<i>The British Museum Technical Research Bulletin</i>
<i>BollMusCivPadova</i>	<i>Bollettino del Museo Civico di Padova</i>
<i>BPI</i>	<i>Bollettino di Paleontologia Italiana</i>
<i>BSA</i>	<i>British School at Athens Annual</i>
<i>BSPF</i>	<i>Bulletin de la Société Préhistorique Française</i>
<i>BullCom</i>	<i>Bollettino della Commissione archeologica Comunale di Roma</i>
<i>Bulletin CIETA</i>	<i>Bulletin du Centre International d'Étude des textiles anciens</i>
<i>BVerona</i>	<i>Bollettino del Museo Civico di Storia Naturale di Verona</i>
<i>CahLig</i>	<i>Cahiers ligures de préhistoire et de protohistoire</i>
<i>CCJB</i>	<i>Collection du Centre Jean Bérard</i>
<i>ChrÉg</i>	<i>Chronique d'Égypte</i>
<i>CIL</i>	<i>Corpus Inscriptionum Latinarum, Berlin, 1863-</i>
<i>CIJ</i>	<i>The Classical Journal</i>
<i>CMS</i>	<i>Corpus der minoischen und mykenischen Siegel</i>
<i>CP</i>	<i>Classical Philology</i>
<i>CPR</i>	<i>Corpus Papyrorum Raineri. Vienna.</i>
<i>CpS</i>	<i>Corpus der ptolemäischen Sklaventexte</i>
<i>CRAI</i>	<i>Comptes rendus de l'Académie des Inscriptions et Belles Lettres (Paris)</i>
<i>DialA</i>	<i>Dialoghi d'Archeologia</i>
<i>EJA</i>	<i>European Journal of Archaeology</i>
<i>ES</i>	<i>E. Gerhard, A. Klügmann and G. Körte, Etruskische Spiegel I - V, Berlin 1840-1897.</i>
<i>EstAlavesa</i>	<i>Estudios de Arqueología Alavesa</i>
<i>FOLD&R</i>	<i>Fasti On Line Documents & Research</i>
<i>FuBerBadWürt</i>	<i>Fundberichte aus Baden-Württemberg</i>
<i>GRBS</i>	<i>Greek, Roman and Byzantine Studies</i>
<i>HisMemFrance</i>	<i>Histoire et Mémoires de l'Institut Royal de France. Classe d'Histoire et de Littérature Ancienne</i>
<i>Historia</i>	<i>Historia. Zeitschrift für Alte Geschichte</i>

<i>InscrIt</i>	<i>Inscriptiones Italiae</i>
<i>ITNME</i>	L. Rodríguez Peinado and A. Cabrera Lafuente (eds.), <i>La investigación textil y los nuevos métodos de estudio</i> , Madrid, 2014, http://www.flg.es/images/publicaciones/investigacion-textil-nuevos-metodos.pdf .
<i>JAA</i>	<i>Journal of African Archaeology</i>
<i>JAIC</i>	<i>Journal of the American Institute for Conservation</i>
<i>JANER</i>	<i>Journal of Ancient Near Eastern Religions</i>
<i>JAS</i>	<i>Journal of Archaeological Science</i>
<i>JBL</i>	<i>Journal of Biblical Literature</i>
<i>JCACCP</i>	<i>Journal of the Canadian Association for Conservation of Cultural Property</i>
<i>JCE</i>	<i>Journal of Chemical Education</i>
<i>JDAI</i>	<i>Jahrbuch des Deutschen Archäologischen Instituts</i>
<i>JdI</i>	<i>Jahrbuch des Deutschen Archäologischen Instituts</i>
<i>JEA</i>	<i>The Journal of Egyptian Archaeology</i>
<i>JGS</i>	<i>Journal of Glass Studies</i>
<i>JHS</i>	<i>Journal of Hellenic Studies</i>
<i>JJurP</i>	<i>Journal of Juristic Papyrology</i>
<i>JMedA</i>	<i>Journal of Mediterranean Archaeology</i>
<i>JÖAI</i>	<i>Jahreshefte des Österreichischen Archäologischen Instituts</i>
<i>JRA</i>	<i>Journal of Roman Archaeology</i>
<i>JRGZM</i>	<i>Jahrbuch Romisch–Germanisches Zentralmuseum Mainz</i>
<i>JRS</i>	<i>Journal of Roman Studies</i>
<i>KA</i>	<i>Kühn Archiv</i>
<i>Kaskal</i>	<i>Kaskal: rivista di storia, ambienti e culture del Vicino Oriente Antico</i>
<i>KOSMOS</i>	M. L. Nosch and R. Laffineur (eds.), <i>Kosmos. Jewellery, adornment and Textiles in the Aegean Bronze Age. Proceedings of the 13th International Aegean Conference / 13e Rencontre égéenne internationale, University of Copenhagen, Danish National Research Foundation's Centre for Textile Research, 21-26 April 2010</i> , Leuven 2012.
<i>Ktema</i>	<i>Ktema. Civilisations l'orient, de la Grèce et de Rome antiques</i>
<i>Lana</i>	P. Basso and M. S. Busana (eds.), <i>La lana nella Cisalpina romana: economia e società. Studi in onore di Stefania Pesavento Mattioli</i> , Padua 2012.
<i>LibSt</i>	<i>Libyan Studies</i>
<i>MAA</i>	<i>Mediterranean Archaeology and Archaeometry</i>
<i>MAH</i>	<i>Mélanges d'archéologie et d'histoire</i>
<i>MAL</i>	<i>Monumenti Antichi dell'Accademia dei Lincei</i>
<i>MatPop</i>	<i>Materiali per Populonia</i>
<i>MBAH</i>	<i>Marburger Beiträge zur antiken Handels-, Wirtschafts- und Sozialgeschichte</i>
<i>MDAI</i>	<i>Mitteilungen des Deutschen Archäologischen Instituts</i>
<i>MdI</i>	<i>Monumenti dell' Istituto di Corrispondenza Archeologica</i>
<i>Mediterranea</i>	<i>Mediterranea. Quaderni annuali dell'Istituto di Studi sulle Civiltà Italiane e del Mediterraneo Antico del Consiglio Nazionale delle Ricerche</i>
<i>MÉFRA</i>	<i>Mélanges d'archéologie et d'histoire de l'École française de Rome. Antiquité</i>
<i>MemAAACVerona</i>	<i>Memorie dell'Accademia d'Agricoltura, Arti e Commercio di Verona</i>
<i>MémAcInscr</i>	<i>Mémoires présentés par divers savants à l'Académie des inscriptions et belles lettres (Paris)</i>
<i>MemLinc</i>	<i>Memorie: Atti della Accademia nazionale dei Lincei, Classe di scienze morali, storiche e filologiche</i>
<i>MusHelv</i>	<i>Museum Helveticum</i>
<i>MVerona</i>	<i>Memorie del Museo Civico di Storia naturale di Verona</i>
<i>MZ</i>	<i>Mainzer Zeitschrift</i>

<i>NAVe</i>	<i>Notizie di Archeologia del Veneto</i>
<i>NESAT IV</i>	L. Bender Jørgensen and E. Munksgaard (eds.), <i>Archaeological Textiles in Northern Europe, NESAT IV</i> , Copenhagen 1992.
<i>NESAT VIII</i>	J. Maik, (ed.), <i>Pricelles Invention of Humanity - Textiles</i> , Łódź 2004.
<i>NESAT IX</i>	A. Rast-Eicher and R. Windler (eds.), <i>Archäologische Textilfunde. Archaeological Textiles, NESAT IX</i> , Ennenda 2007.
<i>NESAT X</i>	E. Andersson Strand, M. Gleba, U. Mannering, C. Munkholt and M. Ringgaard (eds.), <i>North European Symposium for Archaeological Textiles X</i> , Oxford 2010.
<i>NESAT XI</i>	J. Banck-Burgess and C. Nübold (eds.), <i>NESAT XI: the North European Symposium for Archaeological Textiles XI</i> , Rahden 2013.
<i>NESAT XII</i>	K. Grömer and F. Pritchard (eds.), <i>Aspects of the Design, Production and Use of Textiles and Clothing from the Bronze Age to the Early Modern Era. NESAT XII</i> , Budapest 2015.
<i>NESAT XIII</i>	M. Bravermanová, H. Březinová and J. Malcolm-Davies (eds.), <i>Archaeological Textiles Links Between Past and Present. NESAT XIII</i> , Liberec/Praha 2017.
<i>NotALomb</i>	<i>Notiziario della Soprintendenza Archeologica della Lombardia</i>
<i>NSc</i>	<i>Notizie degli Scavi di Antichità</i>
<i>NTJ</i>	<i>The Nordic Textile Journal</i>
<i>NZZ</i>	<i>Neue Zürcher Zeitung</i>
<i>OJA</i>	<i>Oxford Journal of Archaeology</i>
<i>OpArch</i>	<i>Opuscula archaeologica</i>
<i>OpAthRom</i>	<i>Opuscula: Annual of the Swedish Institutes at Athens and Rome</i>
<i>OpRom</i>	<i>Opuscula Romana. Skrifter utgivna av Svenska institutet i Rom</i>
<i>Origini</i>	<i>Origini. Preistoria e protostoria delle civiltà antiche</i>
<i>PAPhS</i>	<i>Proceedings of the American Philosophical Society</i>
<i>PBF</i>	<i>Prähistorische Bronzefunde</i>
<i>PBSR</i>	<i>Papers of the British School at Rome</i>
<i>PGM</i>	<i>Papyri Graecae Magicae</i>
<i>PLup</i>	<i>Papyrologica Lupiensis</i>
<i>PREl</i>	O. Longo (ed.), <i>La porpora. Realtà e immaginario di un colore simbolico, Atti del Convegno di Studio</i> , Venezia, 1998.
<i>PreistAlp</i>	<i>Preistoria Alpina</i>
<i>PRNedInstR</i>	<i>Papers of the Royal Netherlands Institute in Rome</i>
<i>PVI</i>	C. Alfaro, J.P. Wild and B. Costa (eds.), <i>Textiles y tintes del Mediterráneo en época romana. Purpureae Vestes I</i> (Ibiza, 8-10 noviembre 2002), Valencia 2004.
<i>PV II</i>	C. Alfaro and L. Karali (eds.), <i>Vestidos, textiles y tintes: Estudios sobre la producción de bienes de consumo en la Antigüedad. Purpureae Vestes II</i> (Atenas, 24-26 noviembre 2005), Valencia 2008.
<i>PV III</i>	C. Alfaro, J.P. Brun, P. Borgard and R. Pierobon Benoit (eds.), <i>Textiles y tintes en la ciudad antigua. Purpureae Vestes III</i> (Nápoles, 13-15 noviembre 2008), Valencia/Naples 2011.
<i>PV IV</i>	C. Alfaro, M. Tellenbach and J. Ortiz (eds.), <i>Production and Trade of Textiles and Dyes in the Roman Empire and Neighbouring Regions. Purpureae Vestes IV</i> (Valencia, 5-6 noviembre 2010), Valencia 2014.
<i>PV V</i>	J. Ortiz, C. Alfaro, L. Turell and M.J. Martínez (eds.), <i>Textiles, Basketry and Dyes in the Ancient Mediterranean World. Purpureae Vestes V</i> (Montserrat, 19-22 march 2014), Valencia 2016.
<i>PZ</i>	<i>Prähistorische Zeitschrift</i>
<i>QatnaSt</i>	<i>Qatna Studien</i>
<i>QI</i>	<i>Quaternary International</i>
<i>QLaPaRS</i>	<i>Quaderni del Laboratorio di Preistoria e Archeologia Sperimentale</i>
<i>QSP</i>	<i>Quaderni di Studi Pompeiani</i>
<i>QuadAER</i>	<i>Quaderni di Archeologia dell'Emilia Romagna</i>

<i>QuadAVen</i>	<i>Quaderni di Archeologia del Veneto</i>
<i>QuadFriulA</i>	<i>Quaderni Friulani di Archeologia</i>
<i>QZ</i>	<i>Quantitative Zoology</i>
<i>RACFr</i>	<i>Revue archéologique du Centre de la France</i>
<i>RANarb</i>	<i>Revue archéologique de Narbonnaise</i>
<i>RassAPiomb</i>	<i>Rassegna di archeologia. Associazione archeologica piombinese</i>
<i>RendLinc</i>	<i>Atti della Accademia Nazionale del Lincei. Rendiconti</i>
<i>RB</i>	<i>Riggisberger Berichte</i>
<i>RdA</i>	<i>Rivista di Archeologia</i>
<i>RDAC</i>	<i>Report of the Department of Antiquities, Cyprus</i>
<i>RendNap</i>	<i>Rendiconti della Accademia di archeologia, lettere e belle arti, Napoli</i>
<i>RendTrent</i>	<i>Rendiconti della Società di Cultura Preistorica Trentina</i>
<i>RivStPomp</i>	<i>Rivista di Studi Pompeiani</i>
<i>RM</i>	<i>Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung</i>
<i>RPortA</i>	<i>Revista portuguesa de arqueologia</i>
<i>RScPreist</i>	<i>Rivista di Scienze Preistoriche</i>
<i>RStLig</i>	<i>Rivista di studi liguri</i>
<i>ScAnt</i>	<i>Scienze dell'antichità. Storia, archeologia, antropologia</i>
<i>SEBarc</i>	<i>Sylloge Epigraphica Barcinonensis</i>
<i>SMS</i>	<i>Syro-Mesopotamian Studies</i>
<i>StAnt</i>	<i>Studi di antichità. Università di Lecce</i>
<i>StEtr</i>	<i>Studi Etruschi</i>
<i>StPap</i>	<i>Studia papyrologica</i>
<i>StSopPomp</i>	<i>Studi della Soprintendenza Archeologica di Pompei</i>
<i>StTroica</i>	<i>Studia Troica</i>
<i>SupplIt</i>	<i>Supplementa Italica</i>
<i>Textiles in Europe</i>	M. Gleba and U. Mannering (eds.), <i>Textiles and Textile Production in Europe from Prehistory to AD 400</i> , Oxford and Oakville 2012.
<i>Tools, Textiles and Contexts</i>	E. Andersson Strand and M.-L. Nosch (eds.), <i>Tools, Textiles and Contexts: Investigating Textile Production in the Aegean and Eastern Mediterranean Bronze Age</i> , Oxford/Philadelphia 2015.
<i>TROPIS</i>	<i>TROPIS. International Symposia on Ship Construction in Antiquity</i>
<i>TSArch</i>	<i>Trans-Saharan Archaeology</i>
<i>WPZ</i>	<i>Wiener Prähistorische Zeitschrift</i>
<i>ZPE</i>	<i>Zeitschrift für Papyrologie und Epigraphik</i>

QUALITIES OF TEXTILES AND THEIR TERMINOLOGY IN DOCUMENTARY PAPYRI FROM EGYPT

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Abstract: Egypt offers a unique prospect for textile research, as it is the only place where textiles, as well as texts written on papyri, parchments or ostraka have been uncovered, all preserved due to the arid climate. These documentary texts provide information about various aspects of textiles and textile production. Terms denoting specific qualities are frequently attested, but hardly understood. This paper aims to contribute to a better understanding of the terminology concerning specific qualities of textiles identified in written sources, specifically qualities relevant to the actual condition of fabrics (new or already used, worn or completely damaged fabrics) and their size. The analysis presented here is based on a thorough study of the vast papyrological evidence. Our initial goal is to locate the terms defining the qualities in question, study them in their context and group them. This systematic examination of their meaning and use in context, which follows methods of both papyrological and philological analysis, is combined with a thorough examination of the preserved textiles. This comparison provides valuable insights concerning ancient textiles and textile production in Graeco-Roman Egypt.

Keywords: Egypt, Papyri, Textiles, Late Antiquity, Use, Repair, Size

Riassunto: L'Egitto offre un'opportunità unica per la ricerca tessile, in quanto è il solo luogo dove, grazie al clima arido, i tessuti insieme a testi scritti su papiro, pergamena o ostraca, si sono conservati, fornendo utili informazioni su vari aspetti riguardanti i tessuti e la produzione tessile. Tuttavia, sebbene i termini che indicano specifiche qualità dei tessuti sono frequentemente attestati, risultano di difficile comprensione. Il presente lavoro mira a contribuire a una più profonda conoscenza della terminologia relativa alle specifiche qualità di tessuti annoverate dalle fonti scritte, vale a dire le qualità relative alle reali condizioni dei tessuti (tessuti nuovi o usati, usurati o completamente danneggiati) e alle loro dimensioni. L'analisi è basata su uno studio accurato dei vasti documenti papirologici: l'obiettivo iniziale corrisponde ad individuare i termini che definiscono le qualità in questione, studiarli nel loro contesto e, quindi, creare dei raggruppamenti. L'esame del significato dei vocaboli e del relativo uso nel loro contesto, che segue i metodi dell'analisi papirologica e filologica, è abbinato ad un'approfondita analisi dei tessuti conservati, facendo emergere preziose informazioni sui tessuti antichi e sulla produzione tessile nell'Egitto greco-romano.

Introduction

EGYPT is the only place in the world where texts and textiles have survived from associated archaeological contexts due to the arid climate. The combination of papyrology and textile research creates a holistic approach in order to evaluate, complement and reconsider the evidence. This paper will synthesize the evidence gained from documentary texts, such as contracts, lists and letters, preserved on papyri, parchments and ostraka dated to a period extending from the

Ptolemaic to the early Arab period (323 BC–AD 800). Additionally, a large corpus of preserved garments as well as furnishing textiles from burial ground dated to Late Antiquity (c. AD 300–800) allows for a comparison of the textile evidence with the papyrus texts. This paper focuses on indications of using textiles in everyday life (“wear and tear”) and information pertaining to the sizes of textiles.

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1. Signs of use: “Wear and tear”

The papyrus documents under study contain single words as well as prepositional phrases denoting the quality of a fabric on the basis of its actual condition. All of these linguistic elements offer valuable insights concerning:

- a. the distinction between new and old textiles, as well as different aspects of old and used textiles
- b. the use of already worn textiles¹

1.1. New and already used textiles

The adjectives *kainos* and *kainourgios* denote new fabrics which have not been used yet and are, consequently, in good condition. The synonym *neos* is only documented once in a known textile context: P.Fam. Tebt. 49, (b) col.ii.3 (possibly AD 205; Antinoopolis: “new cushions” (τύλαι νέ[αι - -]). In contrast, *palaios* is used to denote old and already used fabrics. The words and phrases included in boxes 2 through 5 (Table 1) have more specific meanings.

The derivatives of *tribo* are used for textiles that have undergone a certain amount of damage.² Both *tribakos*

“Wear and Tear”		
1.	καινός = καινούργιος = νέος	new (i.e. not used at all or in good condition)
	παλαιός	old
2.	< τρίβω: to rub, to wear out	
	τριβακός	rubbed, worn-out
	τρίβων	worn-out garment (possibly a cloak)
	τριβώνιον, τριβωνάριον (diminutives of τρίβων)	
	τριβάς	worn-out / worn-out garment
	ἡμιτριβής = μεσοτριβής = μεσοτριβακός	half or partly worn-out
3.	τεθεραπευμένος (< θεραπεύω “to take care of, to treat medically”)	mended
4.	< χράομαι: to use	
	ἀπὸ χρήσεως	used
	ἀπὸ ὀλίγης χρήσεως	slightly or hardly used
	ἄχρηστος (< ἄ + χράομαι)	useless
5.	σεσημμένος (< σήπω, “to rot”) = σαπρός	rotten
	σεσινωμένος (< σινόω, “to damage”)	damaged
6.	ῥυπαρός	filthy
	καθαρός (or καθάριος)	clean
	πεπλυμένος (< πλύνω, “to wash, to launder”)	laundered

Tab. 1. Overview of Greek terms indicating the use of textiles.

¹ For all of the English translations offered, Ancient Greek dictionaries, such as ADRADOS 1989²-2009; SOPHOCLES 1992; LAMPE 1978 and LSJ⁹, as well as the editors’ suggestions were critically examined.

² See also DIETHART 1992, 57-64.

and the compounds *hemitribes*, *mesotribes* and *mesotribakos* (“half-worn”) are frequently used. Thereby, *hemi-* and *meso-* illustrate a lesser amount of damage in comparison to *tribakos*.³ However, the exact degree of damage cannot be defined based on the papyrus texts.

Similarly, it is difficult to draw the distinction between the meaning of the prepositional phrases *apo chreseos* (“of use”) and *apo oliges chreseos* (“of rare use, i.e. hardly used”); for example, the writer of the memorandum P.Fouad 74 (possibly 6th century AD; unknown provenance), asks the recipient for “a sticharion of Antiochia, decorated, hardly used, at a price of ten carats, more or less” [ll. 6-7: στιχάριον ἀντιοχίσιον, ἔμπλουμον, ἀπὸ ὀλίγης χρήσεως, | ἕως τιμῆς κερ(ατίων) ι, πλέον ἔλαττον].⁴ It is noteworthy that this “hardly used” but no longer new garment maintains a relatively high price⁵).

Documents containing lists of objects include brand new garments or furnishing textiles as well as already used ones. In other words, terms falling into the semantic field of “wear and tear” tend to coexist. The papyrus P.Cair.Zen. I 59092 (= Sel.Pap. I 182; possibly 257 BC; Alexandria) provides Zenon’s long packing list including new (e.g. l. 8: [χλαμὺς] ὀροβοειδῆς θερινὴ καινὴ α “one vetch-coloured new summer [i.e. cloak]”), worn (e.g. ll. 11-12: αὐτόχρους χειμερινὸς χειριδωτὸς τριβακὸς α | αὐτόχρους χειμερινὸς τριβακὸς α “one worn natural-coloured winter tunic with sleeves ... one worn natural-coloured winter tunic”), as well as half-worn clothes (e.g. l. 5: θερινὴ ἡμιτριβῆς α “one half-worn summer [i.e. garment]”). All of these textiles were recorded for Zenon’s trunk, which he may have taken on a journey.

The noun *tribon* is of particular interest regarding the quality of clothing. The dictionaries and some editors do not translate it as “threadbare garment” in general, but as “threadbare cloak.”⁶ Literary attestations of this noun as well as its morphological diminutives (*tribonion* and *tribonarion*) indicate that it was most likely

used to denote a cloak in a less than perfect condition. In many cases, *tribon* is referred to as a component of an outfit worn by people deliberately leading a very plain lifestyle. The following passage from the *Historical Miscellany* of Claudius Aelianus (2nd to 3rd century AD) refers to Agesilaus II (c. 444-c. 360 BC), king of Sparta, who was famous for his wisdom and his contempt of material goods (AEL. N.A. 7,13,1-4):

“When Agesilaus of Sparta reached an advanced age, he often went out barefoot and without an overcoat, wearing just a tunic (τρίβωνα), even early in the morning on a winter’s day.” (Ἀγησίλαος ὁ Λακεδαιμόνιος γέρων ἤδη ὦν ἀνυπόδητος πολλάκις καὶ ἀχίτων προήει, τὸν τρίβωνα περιβαλλόμενος αὐτόν, καὶ ταῦτα ἐώθινος ἐν ὥρα χειμερίῳ).⁷

1.2. Cleanliness and filthiness

The notions of oldness and newness are close to those of filthiness and cleanliness, in the sense that a used piece of clothing gets dirty (cf. *ρύπαρος* < *ρύπος* “dirty”, “filth”) and needs to be washed. In the previously mentioned packing list belonging to Zenon’s archive, P.Cair.Zen. I 59092, the writer mentions *peplumena* (“laundered”) pieces of clothing (ll. 2; 3; 6; 10; 13; 18; 20).

The adjective *katharos* (“clean”) is also associated with washing wool as a raw material for textiles. The writer of P.Sakaon 95 (Mar. 11, AD 301; Thraso, Arsinoite nome), for example, refers explicitly to “clean spun wool” for sale (ll. 9-10: ἐριδίον [l. ἐριδίῳ] καθαρὰς [l. καθαρῶν] | νενημένας [l. νενημένων]).⁸

³ For the variation of *hemi-* and *meso-* see DIETHART 1992, 59-60.

⁴ On the dating see BL XI 82.

⁵ On the prices of textiles see further MORELLI 2004, 74.

⁶ For example, P.Giss.Apoll. 28 (= P.Giss. I 76; AD 117-120; Hermopolite nome; see HGV), note to l. 2.

In LSJ⁹ (supplement, s.v.) this noun is translated as “cloak (sometimes with the implication of being worn or threadbare)”.

Τριβάς is attested only in P.Fam.Tebt. 49, (a) col.ii.4-5; (b) col.i.6 (possibly AD 205; Antinoopolis). In both dictionaries LSJ⁹ and MONTANARI 2004² s.v., it is considered to be an adjective, whereas the editor of the papyrus text believes that it is used either as an adjective or a noun. Moreover, in his opinion, the words belonging to the word family of *tribo* should be related to a sort of smoothing technique (polishing or rubbing) for the production of fine garments (see n. to l. 6).

⁷ English translation: WILSON 1997, 252-253.

⁸ There are cases where the meaning of *katharos* needs to be further explored: according to YOUTIE 1973, 1031-1034; esp. 1032 and 1034 (= BL VII 67), who offers a review on the edition of P.Harr. I 105 (possibly 3rd century AD; see BL XI 90; unknown provenance), the adjective *καθρεία*, which is attested in l. 13, should be translated as “fine”, “refined”, “neat” or as “simply white”.

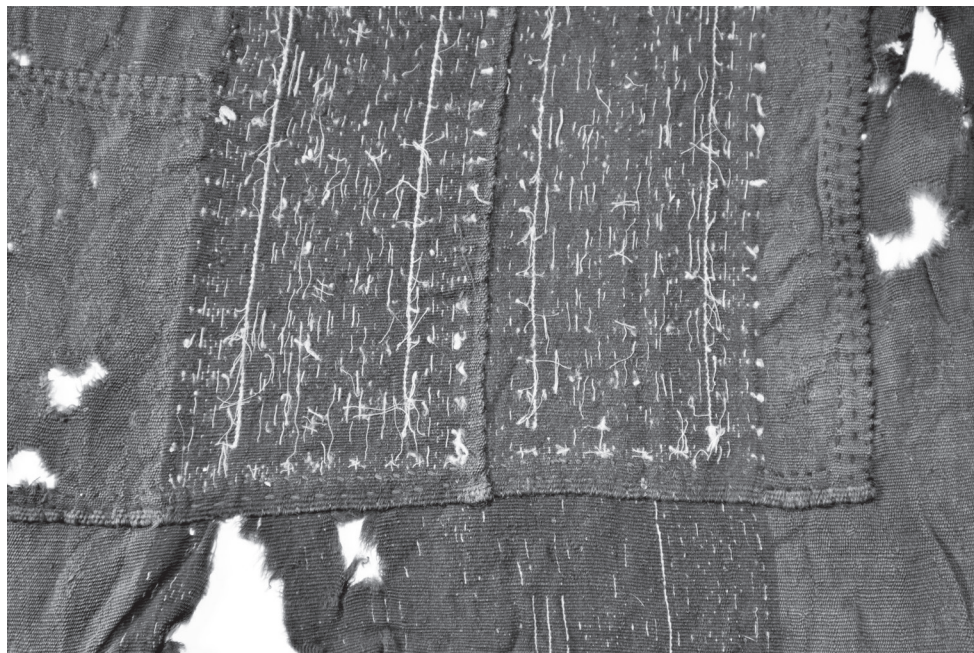


Fig. 1. Reverse side of a tunic with a patch: inv. no. P.Vindob. Stoff 256, detail (© Papyrussammlung, Austrian National Library, Vienna).

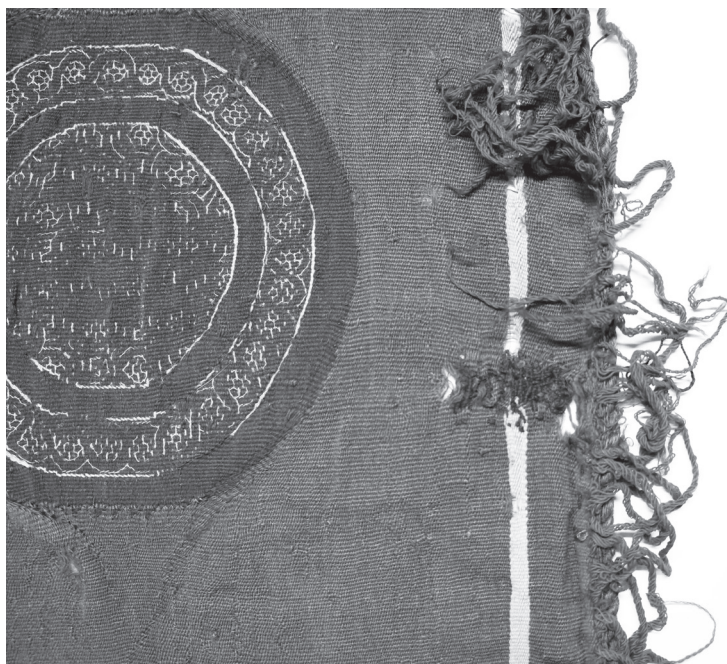


Fig. 2. Darning of a garment: inv.-no. P.Vindob. Stoff 256, detail (© Papyrussammlung, Austrian National Library, Vienna).

1.3. *Repairing garments*

Preserved textiles from Late Antique Egypt often show evidence of repairs, patches and darning (Figs. 1 and 2, Pl. XII). The participle *tetherapeumenos* illustrates

this long-term use of textiles. For example, the private letter P.Oxy. XLII 3060 (2nd century AD; Oxyrhynchos) mentions “a grey set of garments, half-worn and repaired” (l. 3: σύνθε[σι]ν σπανήν ἢ[μιτ]ριβῆν (l. ἡμιτριβῆ) [τεθ]εραπευμένην).⁹

⁹ BL VIII 265; on the meaning of σπανός see ARCE 1985.

1.4. Completely damaged garments

Achrestos, *sesemmenos* and *sesinomenos* refer to garments or furnishing textiles that may no longer be used either because the organic material of the fabric is rotten and decayed or because it has been damaged in another way. In the return of temple property P.Oxy. XII 1449 (AD 213–216; Oxyrhynchos), the writer records “one damaged and useless (i.e. textile) ... all the *himatia* decayed and useless with age, a decayed and useless Phoenician-coloured (i.e. purple-coloured) bed covering” (ll. 50–51: σεση(μμεν) | [ἀ]χρηστ(ο) α, τὰ δὲ ἱμάτια πάντ(α) ἀπὸ τ(οῦ) χρο(νου) σεση(μμένα) ἄχρηστ(α); ll. 55–56: περίστρωμα | [φοι]νείκινον (l. φοινίκινον) σεση(μμένον) ἄχρηστ(ον)).

The same applies to the “worn-out Attalian garment” (*ἀτταλιανὸν σαπρόν*) mentioned in ll. 6–7 of the private letter P.Giss.Apoll. 1 (= P.Giss. I 21; c. AD 113–115; Hermopolis). In another private letter, P.Iand. VI 100 (second half of the 4th century AD; unknown provenance), the writer, an ascetic woman, refers to a *kolobion* that has been damaged and has become useless (ll. 11–12: καὶ περὶ το(ῦ) | κολοβίου, σεσινωμένον ἐ[στί]ν. “And regarding the *kolobion*, it has been damaged”).¹⁰

2. Size of clothing and textiles

In order to determine the sizes of clothing and textiles, general practical information pertaining to manufacturing must be understood. Fortunately, documentary papyri provide at least some insight into this matter. In ancient times, clothing mostly consisted of wide lengths of fabric, draped on the body and secured by pins, fibulae or in some other way. Over time, a wider variety of garments are mentioned in Late Antique texts, with the ancient *chiton* (a tunic) and *himation* (an outer garment) being replaced as basic clothes.

One of the most ubiquitous garment types is the “tunic”, which is a modern term broadly referring to any shirt-like garment with or without sleeves. It was produced by weaving it as single piece on the loom or by sewing more pieces together.¹¹ Tunics were worn by women, men and children, with no restriction to gender or age. In fact, the social status of a person was indicated by the shape, quality and creation of this single garment.

In view of the evidence provided by preserved textiles, information can be found pertaining to the size of clothing and furnishing textiles in papyrological documentary sources.

Size		
1.	μέτρον, pl. μέτρα	measurement (provided in metric length, e.g. cubits)
2.	μικρός, -ά, -όν	small (size)
	μέγας, μεγάλη, μέγα	large (size)
3.	παιδικός, -ή, -όν	<παῖς children-sized
	γυναικεῖος, -α, -ον	< γυνή woman-sized
	ἀνδρεῖος, -α, -ον = ἀνδρικός -ή, -όν = ἀρσενικός -ή, -όν	< ἀνὴρ man-sized
4.	τέλειος, -α, -ον	adult-sized

Tab. 2. Overview of Greek terms indicating size.

¹⁰ English translation: MATHIESON 2014, 238; see n. 39, for additional information.

¹¹ CARROLL 1988, 38; GRANGER-TAYLOR 1982; PRITCHARD 2006, 45.

2.1. Size according to measurements of length and width

In ancient times, textiles were produced in a predetermined size, that is to say, textiles were made bespoke to fit the individual customer. The finished products, such as the preserved textiles from Late Antique Egypt, show different methods of execution, and each garment is a unique piece. The papyrus texts provide information about the process before textiles were made, when they were planned and ordered.¹² First, it was necessary to receive a person's measurements, *metra*, in order to weave a garment (Fig. 3 and Tab. 3). How the fabric was measured, considering the often irregular shape of hand-woven textiles, and if seams and starting and finishing borders were included is not explained and must remain unanswered for the time being.

The finished textiles were divided into small and large sizes. This distinction is even found in connection with the previously mentioned classification of women's and men's clothes: P.Oxy. LIV 3776 constitutes a declaration by the *othoniopolai*, an association of *othonion*-merchants, listing various items with their respective prices. Amongst “all kinds of *othonion*: Tarsian women's *dalmatika* of large size” are recorded, which are further subdivided into three different qualities (ll. 15–16 ὁ[θ]ό[νης] π[αν]τοίας δαλματικ(ῶν) | [γυναικ(εῖων)] τ[αρ]σικ(ῶν) μεγάλ(ου) μέτρ(ου); Jul. 24, AD 343; Oxyrhynchos).

The same articles are already found 16 years earlier

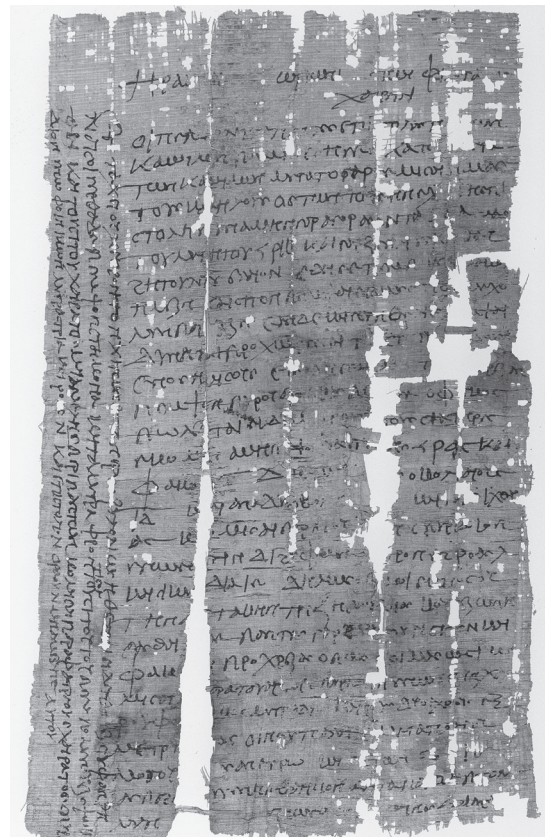


Fig. 3. In the perpendicular postscript of the letter SB VI 9025, measurements and material for weaving a *chiton* are requested (© Papyrology Collection, University of Michigan, Ann Arbor).

SB VI 9025	Second century AD; Oasis Parva or Oxyrhynchos ¹³	ll. 31–32: εἰ δὲ θέλεις ὕφανθῆναι σοι ἐνθάδε, πέμπσον στήμονα καὶ τὰ μέτρα.	“If you want to have one (i.e. a <i>chiton</i>) woven for you here, send warp threads and the measurements.”
P.Tebt. II 414	Second century AD; Tebtynis, Arsinoite nome	ll. 26–28: δότω καὶ ἡ θ υγάτηρ Κεφαλαῖτος τὸ μέτρον Τεφερσαίτι.	“[...] give the size (i.e. of the garment) to Tephersais, and let her sell it [...]”
P.Oxy. LIV 3776	AD 343; Oxyrhynchos	ll. 15–16: [ὁ]θ[ό]νης π[αν]τοίας δαλματικ(ῶν) [γυναικ(εῖων)] τ[αρ]σικ(ῶν) μεγάλ(ου) μέτρ(ου).	“All kinds of <i>othonion</i> : Tarsian women's <i>dalmatika</i> of large size.”

Tab. 3. Selection of papyrus texts in which *metron* is used as the measurement for textiles.

¹² BOGENSPERGER 2016.

¹³ On the provenance, see BAGNALL 2008, 21–30.

in another declaration, P.Oxy. LIV 3765 (c. AD 327; Oxyrhynchos), where female *dalmatika* are listed, and are classified according to different qualities (α , β , and probably γ) but without further indication of size (ll. 12–13: ὀθόνης παντοίας δελματικῶν ταρσικῶν γυναικείων).

Apart from clothes, “small” and “large” are used to describe the size of furnishing textiles. P.Oxy. XIV 1645 (Aug. 31, AD 308; Oxyrhynchos) records “two small worn cushions” in addition to “two worn mattresses” (l. 9: τ[υ]ρῖα (l. τυλεῖα) μικρὰ τριβακὰ δύο, στρωμάτια τριβακὰ δύο).

Precise measurements, such as cubits, *pecheis*, were recorded in addition to the weight, when finished fabrics were traded or requisitioned by the government. For example, the receipt P.Mich. I 120 (mid-3rd century AD; see HGV; Philadelphia) possibly reflects some activities of the *othonion*-monopoly in Ptolemaic times (Fig. 4).¹⁴ Depending on the actual unit of measurement used, this text refers to two *othonion*-fabrics, each of 100.25 cubits long. In Egypt, the cubit is the basic unit of linear measurement from Ptolemaic until Roman times (1 cubit = 0.525 m).¹⁵ Thus, P.Mich. I 120 records two linen fabrics that were 52.6 m long. Their width is not provided, because it was presumably evident to the intended reader and was restricted to the looms in use. However, they are further described according to their weight, one weighing 40.5 *mna*, the other 35 *mna*. Given that in Ptolemaic times the Phoenician weight standard was introduced to Egypt (1 *mna* = 355 g), the first *othonion* fabric weighs 14.38 kg and the second 12.4 kg.¹⁶

2.2. Size according to gender and age

Garment types were not restricted to gender or age; however, their individual components, style and quality indicated the wearer’s social status. Amongst preserved textiles, children’s garments are distinctly discernible by their smaller size and their comparatively large neck-openings. In papyrus texts, children’s garments are unambiguously referred to by the adjective *paidikos*.

The situation regarding adult-sized garments is more complicated. In fact, adjectives for both genders occur

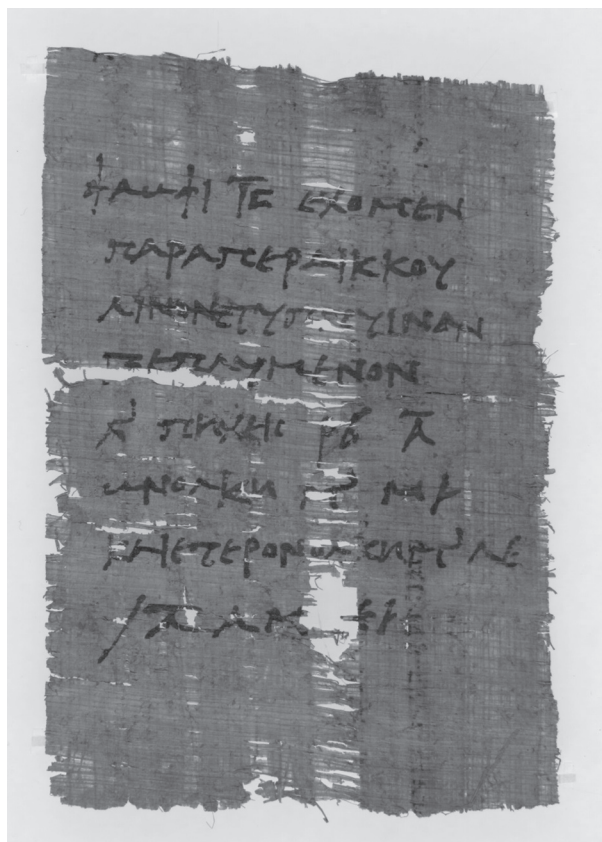


Fig. 4. The receipt of two *othonion*-fabrics P.Mich. I 120 (© Papyrology Collection, University of Michigan, Ann Arbor).

with textiles: *gynaikeios*, as well as *andreios*, *andrikos* and *arsenikos* respectively (Tab. 2). Such a distinction was necessary, as various types of garments remained in use until Late Antiquity. The list of textiles dating to between the sixth and seventh century AD, P.Berl. Sarisch. 23 (unknown provenance), records ten *othonia*; women’s garments and children’s garments are specified.¹⁷ Their execution, especially the length of the garment, might determine if it was a woman’s or a man’s garment.

The distinction between women’s, men’s and children’s garments was also used in Diocletian’s Edict of AD 301, which records that the dyeing and bleaching of women’s clothes is costlier than men’s and children’s (Edict. Diocl. 7, 54-59; 26 *passim*). This difference plausibly results from more “material” necessary for female clothes, which corresponds to the higher price, i.e. maximum wages given in that chapter.¹⁸

¹⁴ On the *othonion*-monopoly, see HEICHELHEIM 1933.

¹⁵ BAGNALL 2011, 185.

¹⁶ BAGNALL 2011, 189-190.

¹⁷ On *othonion*, see BARTINA 1965.

¹⁸ LAUFFER 1971, 122–123, 169-176.

Hand-woven clothes were likely made according to a kind of standard size, but needed to be altered to fit the customer. Complete tunics often show a tuck around the waist, where the fabric was pleated in order to adjust the garment's length to its wearer.¹⁹ In a few cases, this tuck was later undone. Thereby, the fabric was pleated more at the sides than in the middle of the garment in order to achieve the same border at the bottom, while wearing the garment on the body.²⁰ One explanation is that this waist tuck served to adapt the garment to each individual wearer after a basic form was woven on the loom.²¹

In addition to adjectives denoting women's and men's apparel, the term *teleios* was used in combination with various garments. Derived from its basic meaning "perfect", "complete", "full grown", it served as a generic term for textiles for adults.²²

2.3. Diminutives as indication of size?

In addition to measurements and adjectives denoting size according to gender and age, diminutives may convey some practical information on the actual size of garments in Ancient Greek. Therefore, diminutives could be used as equivalent to the adjectives *mikros* ("small") or *leptos* ("fine").

Diminutives can be recognized by their specific morphology. Two of the basic suffixes are *-ιον* or *-άριον*. However, their development and meaning constitute a more complicated matter.²³ In order to express the meaning "smaller", a comparison must be established. In other words, a smaller size can only be meant if it is compared with the size of a normal garment within the same group.²⁴ As noted above, the receipt P.Oxy. XIV 1645 mentions "two small worn cushions, two worn mattresses" (l. 9: τ[υ]ρῖα [l. τυλεῖα] μικρά τριβακά δύο, στρωμάτια τριβακά δύο) among other objects (Aug. 31, AD 308; Oxyrhynchos). In this passage, the use of *μικρά* possibly serves as a confirmation that the morphological diminutive denotes the size. However, in the private letter P.Ant. I 43, dating to some time later than the previous document, the writer states that "I have given you a blanket, and several minas of the

old currency, and a *large* (little?) cushion" (ll. 4–5: ἔτωκά (l. ἔδωκά) σοι λωτίκιν (l. λωδίκιον) καὶ μνᾶς | παλεοῦ (l. παλαιοῦ) καὶ τυλάριν μέγα; late 3rd to 4th century AD; Arsinoite nome). Is the combination of a diminutive with the adjective "large" a contradiction? What is more probable is that the morphological diminutive of the noun *tyle* is not connected to the notion of smallness. According to Walter Peterson, this is the case when diminutives form a class of their own.²⁵ In this particular letter, the class of small cushions are seen in contrast to, for instance, larger mattresses, and are not compared with types of cushions, where size is relevant. Nevertheless, it is impossible to judge if this meaning of diminutives is generally in use from a certain point in time, or only in these few cases attested in written sources. Furthermore, apart from smallness, diminutives indicate either personal close affection and are used in a hypocoristic function in order to express daintiness and one's endearment or in a derogatory way.²⁶ In all of these cases, the idea of size is not relevant at all.

2.4. Make it half: use of the prefix *hemi-*

The prefix *hemi-* can refer to half-sized textiles: P.Oslo II 56 is a second century AD private letter of unknown provenance, in which various textiles (garments, household and furnishing textiles) are requested to be purchased in Bousiris: "a good half-sized cushion, if you find a larger — see to it that you don't forget anything — and another cheaper one from Sais" (ll. 6–8: ἡμιτύλιν (l. ἡμιτύλιον) καλὸν εἴ τι μείζω — βλέπε οὖν μὴ | ἀμελήσης — ἄλλο χεῖρω τῆς Σάεως).

This term is also mentioned in the account BGU I 40 from the second or third century AD, where two half-sized cushions are recorded (l. 12: εἡμιτύλια β [l. ἡμιτύλια]).²⁷

Conclusion

Written sources, in particular Greek documentary papyri enrich our understanding of ancient textiles. Tex-

¹⁹ E.g. VERHECKEN-LAMMENS 1994, 102.

²⁰ Personal discussion with Martina Dax, Austrian Museum of Applied Arts, Vienna.

²¹ Cf. KWASPEN and VERHECKEN-LAMMENS 2015, 167.

²² LSJ⁹ s.v.; PREISIGKE 1927, 585–587 s.v: "was sein Ziel erreicht hat; ausgewachsen"; thanks to Arthur Verhoogt for personal discussion.

²³ Cf. SWANSON 1958; WATT 2013.

²⁴ PETERSON 1910, 131–153.

²⁵ PETERSON 1910, 164–166.

²⁶ PETERSON 1910, 113–131; 169–184.

²⁷ The editor, however, translates "zwei zweiteilige Matratzen". On the dating, see BL I 11.

tiles are described with their distinctive qualities using a clear terminology. The condition and the size of textiles were as noteworthy as the materials used, the decorations or the colours of the fabrics. This information seems perfectly in line with the preserved textiles from the same period. In addition, these textual sources contain clues that are not detected by the materials alone, especially as the archaeological context is often lost. Papyrus texts illustrate a high spread and demand of used and worn garments in daily life, a circumstance that is hard to determine from the historic textiles due to age-related decay. The clear use of language reveals a well-known categorisation of used textiles in everyday life of ancient societies. The attestations falling into the category of “wear and tear” offer valuable information about the way the ancient writers conceived and correlated the notions of the fabric’s age and its usefulness. Textiles which were not new, were sold, bought, sent and used in everyday life. In addition, measures were taken to repair, mend, darn or patch textiles, so that they could be used for a longer period. Moreover, the clear distinction between “worn” and “half-worn” illustrates this long-term use. It is interesting that if new textiles are mentioned, they often occur with worn and half-worn pieces, which demonstrates the mixed assortment in the ancient household.

As far as the size of textile is concerned, in some cases the precise length and width are mentioned in the papyri, whereas in other cases, garments are produced specifically for women, men and children. As the majority of preserved textiles housed in collections and museums worldwide lack secure archaeological contexts, information pertaining to the gender of the deceased is lost. Therefore, the evidence gained from the papyri complements our understanding of ancient textiles.

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Abbreviations

All abbreviations of papyrological editions follow the online-version of the Checklist of Greek, Latin, Demotic and Coptic Papyri, Ostraca and Tablets:

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- LSJ⁹: H. G. Lidell, R. Scott, H. S. Jones, *A Greek-English Lexicon with a revised supplement*. Oxford 1996⁹.



Bustamante-Álvarez et al.: a) *Kermes vermilio* Planch. on a kermes oak, Andilla, Valencia; b) grains of kermes soaked in vinegar; c) dye bath prepared with kermes grains (images: M. J. Martínez).



Bogensperger and Koroli: Reverse side of a tunic with a patch: inv.-no. P.Vindob. Stoff 256, detail (© Papyrussammlung, Austrian National Library, Vienna).

Bogensperger and Koroli: Darning of a garment; inv.-no. P.Vindob. Stoff 256, detail (© Papyrussammlung, Austrian National Library, Vienna).



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This volume gathers the contributions of the 6th Purpureae Vestes International Symposium, which took place in Padova-Este-Altino, Veneto, Italy in October 2016. The topic, Textiles and Dyes in the Mediterranean economy and society, focused on the role of textile production and dyeing as economic activities of the various ancient cultures of the Mediterranean area, highlighting conservatisms and innovations in the various Mediterranean textile traditions and customs. An important impetus for this has been provided by the recent advances in textile studies and the numerous scientific projects that are using textile evidence to understand wider economic developments of ancient Mediterranean societies. The 53 articles collected in this volume follow a chronological (from the Bronze Age to the High Middle Ages) and geographical (from East to West and from Italy to the provinces) order. The last section deals with broader aspects that transgress chronological or geographical boundaries.