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Dating Danish textiles and skins from bog finds by means of ^{14}C AMS

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ABSTRACT

This study presents the results of 44 new ^{14}C analyses of Danish Early Iron Age textiles and skins. Of 52 Danish bog finds containing skin and textile items, 30 are associated with bog bodies. Until now, only 18 of these have been dated. In this paper we add dates to the remaining finds. The results demonstrate that the Danish custom of depositing clothed bodies in a bog is centred to the centuries immediately before and at the beginning of the Common Era. Most of these bodies are carefully placed in the bog – wrapped or dressed in various textile and/or skin garments. The care with which these people were placed in the bog indicates that they represent a hitherto unrecognised burial custom supplementing the more common burial pratice for this period.

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1. Introduction

It is well known that organic materials such as human remains, textiles and skins are in most cases subject to rapid decomposition, and are rare finds in an archaeological context. Their preservation requires special environmental conditions to prevent their destruction by microorganisms. North European peat bogs constitute an environment which is particularly conducive to the preservation of organic materials and Denmark possesses a unique and very rich collection of prehistoric bodies and garments found in bog deposits (Hald, 1980; Mannering and Gleba, forthcoming).

Especially on the Jutland peninsula where the unique environment in raised bogs preserves proteinatious materials, an impressive group of human remains with soft tissues and hair, textiles in wool and animal skin and leather objects have been preserved almost intact (Fig. 1). Many of these finds were unearthed before 1900 and all before 1953. They constitute a very special group of archaeological artefacts which have both fascinated and repelled scientists and laymen. Nevertheless, they also constitute an unprecedented source of information which enables us to come very close to prehistoric individuals, their tastes and beliefs.

Until recently the main focus has primarily been on the dating of the bog bodies (Tauber, 1979; van der Plicht et al., 2004). Among the most famous Danish bog bodies are the Tollund Man, the Elling Woman, the Haraldskær Woman, the Huldremose Woman, the three Borremose bodies, and the Grauballe Man. Bodies of men, women and children have also been recovered in Germany, Holland, Ireland and England (van der Sanden, 1996), testifying that the custom of depositing bodies in bogs was a wide spread phenomenon in the North European area in the Late Bronze and Early Iron Age. Nevertheless, ^{14}C dates of the costume from Kragelund in Denmark which was found on a male body[1] and the Swedish Bocksten man (Nockert, 1997, 125–136; Østergård, 2004, 124–127), both recently dated to the Medieval Period, demonstrate that the custom of depositing bodies and costumes in bogs was a much longer lasting phenomenon. In this paper we focus on presenting the latest ^{14}C analyses performed on textile and skin objects from Danish peat bogs.

2. Material

An ongoing research programme at the Danish National Research Foundation's Centre for Textile Research[2] at the University

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[1] The body has been lost for a long time, but recently was located in the Anthropological Laboratory, Panum Institute, University of Copenhagen, Denmark.
[2] For more information see www.ctr.hum.ku.dk.

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Fig. 1. Geographical distribution of Danish Late Bronze and Early Iron Age bog finds.

of Copenhagen has shed new light on this corpus which is primarily located at the National Museum of Denmark in Copenhagen and several local museums. A vital part of this research was the dating and re-dating of the studied human, textile and skin material.

In addition to the above mentioned well preserved bog bodies, the Danish collections include numerous finds of human remains that are not as complete, and which therefore have not attracted the same attention. Likewise, well preserved textiles and skins without association with human remains have also been found in bogs, and constitute a large and fundamental resource in the investigation of early costumes and textiles.

Until now these items have been dated exclusively by means of context, pattern or technical data. Typological and technical studies of textile and skin objects in correlation with the few published ^{14}C dates have indicated that most textile and skin finds should date to the Late Bronze and Early Iron Age (10th Century BC to 4th century AD). More precise stylistic and/or technological dating was however difficult. Given that the period spans over more than a millennium, it was imperative to have more precise dates for the entire corpus of material.

3. Methods

Throughout the last 40 years multiple ^{14}C dating of North European bog finds and repeated analyses of different organic components such as human bone or tissue, skin and textiles from closed contexts have played an important role in the development of ^{14}C dating methodology (Nockert and Possnert, 2002; Tauber, 1979; van der Plicht et al., 2004). This methodology provides an excellent tool for handling and interpreting archaeological material that cannot be related to conventional dating methods i.e. ceramic, jewellery or weapon chronologies.

Samples have been tested either in the Uppsala Tandem Laboratory, Uppsala University in Sweden or the AMS ^{14}C Dating Centre, Department of Physics and Astronomy, Aarhus University in Denmark. A single sample was tested in collaboration between Uppsala University and Department of Physics and Chemistry, University of Southern Denmark (Ua-35799).

The basic assumption of the ^{14}C- dating method is that the system to be dated has been "closed". The significance of this prerequisite is that the ^{14}C activity in a sample has only been changed by radioactive decay. In practice all non-relevant amounts of carbon added to a specimen during storage after "death" e.g. dust, preservation substances, soil humics, therefore has to be removed before the dating process can be conducted.

In the present study where many different materials (such as textiles, leather, human bone and skin) have been sampled, standard chemical pre-treatment routines have been employed to eliminate contamination and to extract the most relevant fraction for the dating. Since some of the objects might have been affected by organic solvents for the purpose of conservation, special

cleaning precautions including acetone or ethanol have been implemented in the sample handling chemistry.

^{14}C ages are reported in conventional radiocarbon years BP (before present = 1950) in accordance with international convention (Stuiver and Polach, 1977, 355). Thus, all calculated ^{14}C ages have been corrected for fractionation in order to ensure the result is in accordance with the standard δ^{13}C value of −25‰ (wood).

Calibrated ages in calendar years have been obtained from the calibration curves in Reimer et al. (2004) by means of the Oxcal v4.0 calibration programme (Bronk Ramsey, 2001) using the terrestrial calibration curve, IntCal04. The probability method has been used to calculate the calibrated age ranges corresponding to 68.2% probability (1 sigma) and 95.4% probability (2 sigma).

4. Results and discussion

Investigation of all textile and skin objects in Danish collections ascribed to the Early Iron Age has resulted in the dating of 44 objects from 40 locations (Fig. 2). In combination with the previously performed ^{14}C analyses (Tauber, 1979; van der Plicht et al., 2004), approximately 80 ^{14}C dates are known at present from human remains, skin garments, textiles or other kinds of organic material from Danish bogs (Fig. 3).

Most of the new ^{14}C dates of Danish bog finds cluster in the period between 500 BC and AD 200 (Fig. 2). Compared to the previously performed analyses this is not surprising. An important result is however, that finds previously dated to the Late Bronze Age have now been down dated in time and cluster with the majority of other finds. Thus, the Borremose I, II and III finds that were earlier dated to 920–390 BC are now dated to the much narrower period of 416–209 BC. Henceforth, these bog bodies can be definitively ascribed to the Danish Early Iron Age.

The only secure Late Bronze Age finds are the single finds of a pair of shoes from Ørbækgård and a shoe from Vivsø, as well as the shoe from Undelev, which was found on a male body in the late 18th century (Andersen et al., forthcoming). The latest dated finds within the Early Iron Age are the skin bag from Oksenbjerg, made from an entire animal carcass, and the skin garments from Møgelmose and Refstrup Hovedgaard. The dating of the two latter finds relies on earlier ^{14}C dates (Ebbesen, forthcoming) but given the precision of the new methods it seems plausible that these finds could receive a more precise dating if retested. A textile from the Corselitze find is now ^{14}C dated to AD 210–410 and this date corresponds well to the stylistic dating of the accompanying fibula, which previously dated the find to c. AD 300 (Hald, 1980, 72–75).

Single finds of textiles follow a slightly different pattern being primarily a Pre-Roman Iron Age phenomenon (Fig. 4). In the material which has been studied, textiles as single deposited objects occur nine times, and nothing suggests that any of these textiles were connected to a bog body. Single finds of shoes also seem to be a frequently occurring phenomenon. Shoes have been recorded eight times as single finds and four times together with a bog body. Three are pairs giving all together 15 individual shoes. Most shoes are dated to the Pre-Roman and Roman Iron Age (Fig. 5). Only three finds fall outside this range and these include the previously mentioned pair of shoes from Ørbækgård dated to the Late Bronze Age (920–807 BC), the shoe from Vivsø from the same period (890–802 BC) and a shoe from Arnitlund dated to AD 600–775, i.e. the Late Germanic Iron Age, which makes it the latest dated object within the material under study. All three dates are surprising as the stylistic analyses would definitely have placed them together with the finds from the Pre-Roman/Roman Iron Age (Hald, 1972; van Driel Murray, 2001). This example emphasizes the importance of using supplementary dating methods where possible.

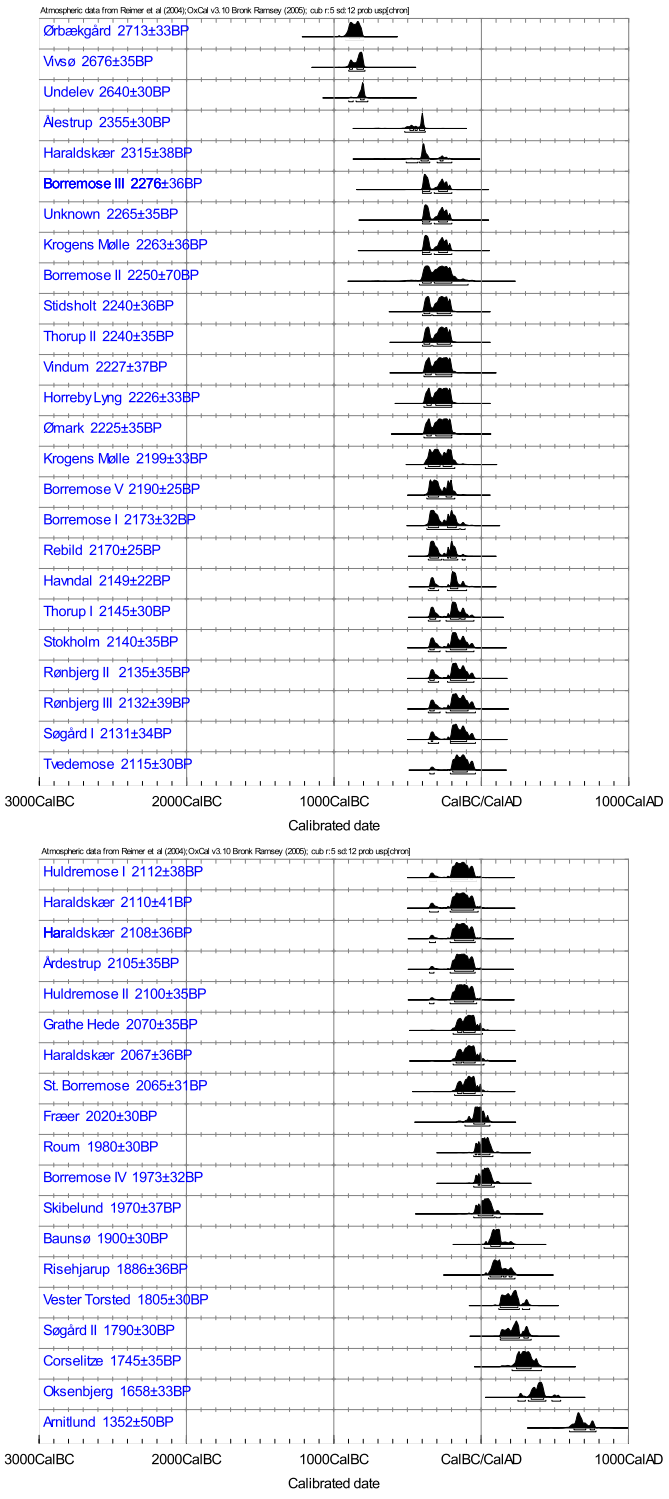

Fig. 2. Chronological sequence of all new dates performed within the research programme.

Skin capes are encountered quite frequently among the Danish bog finds. Sometimes a single cape occurs within the context of a find, and sometimes several together. Most often they are found together with a bog body but they also occur as single finds. Fourteen bog bodies have been found with skin capes placed with or wrapped around the body. It is possible that most capes were connected to the deposition of a body, which is either not preserved or whose existence was not reported to the authorities. Skin capes display a surprising

Find location	^{14}C date BP	Laboratory no.	δ ^{13}C VPDB	Calibrated range (68,2% probability)	Calibrated range (95,4% probability)	Museum no.	Find type	Object tested
*Arnitlund	1352 ± 50	AAR-11667	-23,07	AD 638-766	AD 600-775	HAM 3800	Single find	Skin shoe
Auning	2000 ± 70	K-3512	-21,20	100 BC-AD 80	200 BC-AD 140	KHM 233/74	Bog body (♀)	Human muscle
*Baunsø	1900 ± 30	Ua-33586	-23,50	AD 65-130	AD 20-220	NM D11103b	Bog body (♂)	Skin cape
*Borremose I	2173 ± 32	AAR-11678	-23,69	353-176 BC	365-116 BC	NM C26451	Bog body (♂)	Textile
Borremose I	2600 ± 80	K-2813	-20,10	850-540 BC	920-410 BC	NM no no.	Bog body (♂)	Human muscle
*Borremose II	2250 ± 70	AAR-11679	-23,41	392-209 BC	483-95 BC	NM C26441	Bog body (♂)	Textile
Borremose II	2380 ± 100	K-1395	-	750-380 BC	800-200 BC	NM no no.	Bog body (♀)	Human remains (unidentified)
Borremose III	2560 ± 100	K-2108A	-	820-530 BC	900-400 BC	NM C26454/55	Bog body (♀)	Human muscle
Borremose III	2480 ± 100	K-2108B	-	770-420 BC	810-390 BC	NM C26454/55	Bog body (♀)	Human muscle
*Borremose III	2276 ± 36	AAR-11680	-23,57	396-235 BC	401-209 BC	NM C25454	Bog body (♀)	Textile
*Borremose IV	1973 ± 32	AAR-11669	-23,56	19 BC-AD 69	46 BC-AD 115	VMÅ C160	Single find	Skin shoe
*Borremose V	2190 ± 25	Ua-33579	-24,10	360-200 BC	370-180 BC	VMÅ C189	Single find	Textile
Bredmose	2130 ± 70	K-3591	-17,40	350-50 BC	370 BC-AD 10	NM no no.	Bog body (♀)	Human bone
*Corselitze	1745 ± 35	Ua-33200	-24,50	AD 240-340	AD 210-410	NM 7325a	Bog body (♀)	Textile
Elling	2210 ± 30	GrA-14315	-24,19	360-200 BC	380-190 BC	NM 508/38	Bog body (♀)	Skin cape
Elling	2195 ± 40	AAR-3415	-23,80	360-190 BC	390-160 BC	NM 508/38	Bog body (♀)	Skin cape
Elling	2170 ± 55	K-2876	-24,50	360-120 BC	380-50 BC	NM 508/38	Bog body (♀)	Human muscle
Elling	2120 ± 55	K-2877	-22,20	340-50 BC	360 BC-AD 10	NM 508/38	Bog body (♀)	Skin cape
*Fræer	2020 ± 30	Ua-33582	-23,80	50 BC-AD 25	110 BC-AD 60	NM 7142A	Bog body (♀?)	Textile
*Grathe Hede	2070 ± 35	Ua-33203	-23,70	160-40 BC	190 BC-AD 10	NM D12244	Bog body (?)	Textile
Grauballe	2325 ± 46	AAR-7668	-26,52	490-230 BC	540-200 BC	FHM	Bog body (♂)	Plant rootlets
Grauballe	2241 ± 30	AAR-2889	-21,90	390-210 BC	400-200BC	FHM	Bog body (♂)	Human Hair
Grauballe	2040 ± 50	AAR-7829	-21,84	150 BC-AD 30	180 BC-AD 70	FHM	Bog body (♂)	Human bone (pelvis)
Grauballe	2030 ± 55	K-3117	-26,60	110 BC-AD 50	190 BC-AD 80	FHM	Bog body (♂)	Human muscle
Haraldskær	2400 ± 80	K-2812	-26,80	750-390 BC	800-350 BC	NM C3710	Bog body (♀)	Wooden stick
*Haraldskær	2315 ± 38	AAR-11659	-23,54	409-263 BC	508-211 BC	NM C3705	Bog body (♀)	Skin cape
*Haraldskær	2110 ± 41	AAR-10831	-20,86	200-50 BC	360-20 BC	NM 22378?	Bog body (♀)	Human Hair
*Haraldskær	2108 ± 36	AAR-11660	-24,12	179-59 BC	347-42 BC	NM C3707	Bog body (♀)	Textile
*Haraldskær	2067 ± 36	AAR-11661	-23,86	161-42 BC	191 BC-AD 17	NM C37143	Bog body (♀)	Sprang
*Havndal	2149 ± 22	AAR-11662	-23,50	346-166 BC	353-107 BC	NM C5742	Single find	Skin shoe
*Horreby Lyng	2226 ± 33	AAR-11677	-24,16	370-210 BC	385-203 BC	NM C24266	Bog body (?)	Skin cape
*Huldremose I	2112 ± 38	AAR-11675	-23,76	192-61 BC	350-41 BC	NM C3473	Bog body (♀)	Textile
Huldremose I	1920 ± 100	K-1396	-	40 BC-AD 220	200 BC-AD 350	NM C3471	Bog body (♀)	Skin cape
*Huldremose II	2100 ± 35	Ua-33204	-24,20	180-50 BC	350-30 BC	NM D3505	Single find	Textile
Karlby	2025 ± 60	Ua-3998	-24,68	110 BC-AD 60	200 BC-AD 90	NM 4845a	Bog body (♂)	Textile
Karlby	1985 ± 60	Ua-3999	-24,30	50 BC-AD 80	170 BC-AD 140	NM 4845a	Bog body (♂)	Textile

Fig. 3. New and previously analysed Danish bog finds listed alphabetically. The data presented include the name of the find locality, type of material analysed, laboratory sample and museum number. Finds marked with an asterisk (*) are new dates obtained within the research programme in the following laboratories: Ua-Uppsala and AAR-Aarhus (AMS). The relevant ^{14}C dates obtained by other laboratories are included for comparison. Their codes are: K-Copenhagen (conventional method), GrA-Groningen (AMS) and OxA-Oxford (AMS). Museums referred to are: FHM = Moesgård Museum, Århus; HAM = Museum Sønderjylland, Arkæologi Haderslev; KHM = Kulturhistorisk Museum Randers; MKH = Museet på Koldinghus, Kolding; NM = National Museum of Denmark, Copenhagen; SIM = Silkeborg Museum; SMS = Skive Museum; VKH = Vejle Museum; VMÅ = Vesthimmerlands Museum, Års; VSM = Viborg Stiftsmuseum; ÅHM = Nordjyllands Historiske Museum, Ålborg.

*Krogens Mølle	2263 ± 36	AAR-11673	-23,12	392-234 BC	399-207 BC	NM D1310	Bog body (♀)	Textile
*Krogens Mølle	2199 ± 33	AAR-11674	-24,48	357-203 BC	376-181 BC	NM D1310N	Bog body (♀)	Skin cape
Krogens Mølle	2030 ± 100	K-2132	-	180 BC-AD 80	400 BC-AD 250	NM D1311	Bog body (♀)	Skin cape
Møgelmose	2270 ± 70	OxA-1188	-	400-200 BC	520-150 BC	NM 16316	Bog body (♀)	Skin garment
Møgelmose	1790 ± 95	Ua-334	-	AD 120-380	AD 1-550	NM 16316	Bog body (♀)	Skin garment
*Oksenbjerg	1658 ± 33	AAR-11671	-23,26	AD 345-425	AD 258-532	NM C25219	Single find	Skin bag
*Rebild	2170 ± 25	Ua-33581	-24,30	350-170 BC	360-110 BC	ÅHM 4608	Single find	Textile
Refstrup Hovedgård	1640 ± 115	Ua-336	-	AD 250-550	AD 130-630	NM D7994	Single find	Skin cape
*Risehjarup	1886 ± 36	AAR-11668	-23,08	AD 68-209	AD 53-229	HAM 1800	Single find	Skin shoe
*Roum	1980 ± 30	Ua-33584	-24,80	40 BC-AD 60	50 BC-AD 80	NM no no. 361	Bog body (♀)	Skin cape
*Rønbjerg II	2135 ± 35	Ua-33202	-23,80	350-100 BC	360-50 BC	NM D2625h	Bog body (?)	Textile
*Rønbjerg III	2132 ± 39	AAR-11664	-23,16	342-97 BC	355-47 BC	NM D10161	Bog body (♂)	Skin shoe
*Skibelund	1970 ± 37	AAR-11663	-23,16	20 BC-AD 72	47 BC-AD 123	NM C24905	Single find	Skin shoe
Skærsø	2050 ±70	K-6608	-	170 BC-AD 20	350 BC-AD 90	MKH 336	Single find	Textile
Skærum	1960 ± 90	OxA-1187	-	AD 100-140	200 BC-AD 250	NM D8274	Bog body (?)	Skin cape
*Stidsholt	2240 ± 36	AAR-11670	-23,96	383-211 BC	392-204 BC	NM 18472	Bog body (♀)	Wool cords
*Stokholm	2140 ± 35	Ua-33198	-24,20	350-100 BC	360-50 BC	NM C7649	Single find	Textile
*Store Borremose	2065 ± 31	AAR-11665	-23,35	157-42 BC	171 BC-AD 2	NM C24486	Single find	Skin shoe
*Søgård I	2131 ± 34	AAR-11676	-23,46	337-102 BC	352-51 BC	SMS 634A205	Bog body (♂)	Textile
Søgård I	2080 ± 75	K-3513	-21,80	200 BC-AD 10	360 BC-AD 70	SMS 634A2	Bog body (♂)	Skin cape
*Søgård II	1790 ± 30	Ua-33589	-24,30	AD 130-320	AD 130-340	SMS 634A400	Bog body (♂?)	Skin cape
Søgård II	1530 ± 75	K-3979	-22,30	AD 430-600	AD 380-660	SMS 634A4	Bog body (♂)	Skin cape
*Thorup I	2145 ± 30	Ua-33583	-24,10	350-110 BC	360-50 BC	VSM 2381	Bog body (?)	Textile
*Thorup II	2240 ± 35	Ua-33205	-24,10	390-210 BC	400-200 BC	NM C27442	Single find	Textile
Tollund	2345 ± 40	AAR-3328	-21,10	510-380 BC	730-250 BC	SIM 201/1950	Bog body (♂)	Human bone (rib)
Tollund	2290 ± 30	GrA-14179	-23,56	400-260 BC	410-210 BC	SIM 201/1950	Bog body (♂)	Skin/leather
Tollund	2200 ± 55	K-2814A	-21,10	360-200 BC	400-110 BC	SIM 201/1950	Bog body (♂)	Human muscle
Tollund	2130 ± 50	K-2814B	-20,70	350-50 BC	360-40 BC	SIM 201/1950	Bog body (♂)	Human muscle
True	2070 ± 60	K-6512	-24,60	180-1 BC	350 BC-AD 70	VMS 6742	Single find	Skin cape
*Tvedemose	2115 ± 30	Ua-33587	-24,90	195-95 BC	350-40 BC	NM C24620	Bog body (?)	Skin cape
*Undelev	2640 ± 30	Ua-35799	-24,90	820-795 BC	900-770 BC	NM C372	Bog body (♂)	Skin shoe
Undelev	2485 ± 40	Ka-6945/ AAR-4370	-25,10	760-540 BC	775-415 BC	NM C372	Bog body (♂)	Skin shoe
*Unknown provenance	2265 ± 35	Ua-33201	-24,50	400-230 BC	400-200 BC	NM C37142	Single find	Textile
*Vester Torsted	1805 ± 30	Ua-33585	-25,10	AD 130-250	AD 120-330	NM D8262	Bog body (♂)	Skin cape
Vesterris	2290 ± 75	K-3553	-21,90	410-200 BC	750-100 BC	VMÅ B 141	Single find	Bone object
Vindum	2270 ± 165	Ua-331	-	750-50 BC	800 BC-AD 50	NM C5030	Bog body (♀?)	Skin cape
*Vindum	2227 ± 37	AAR-11672	-24,28	372-210 BC	386-203 BC	NM C5030	Bog body (♀?)	Skin cape
*Vivsø	2676 ± 35	AAR-12521	-23,13	892-802 BC	900-798 BC	SMS 1010A1	Single find	Skin shoe
*Ømark	2225 ± 35	Ua-33197	-23,60	370-200 BC	390-200 BC	NM C25182	Single find	Textile
*Ørbækgård	2713 ± 33	AAR-11666	-24,23	896-827BC	920-807 BC	NM D2638	Single find	Skin shoe
*Ålestrup	2355 ± 30	Ua-33580	-24,80	485-385 BC	520-380 BC	VMÅ C183	Single find	Textile
*Årdestrup	2105 ± 35	Ua-33588	-24,70	180-50 BC	350-40 BC	VMÅ C159	Single find	Skin cape

Fig. 3. (*continued*).

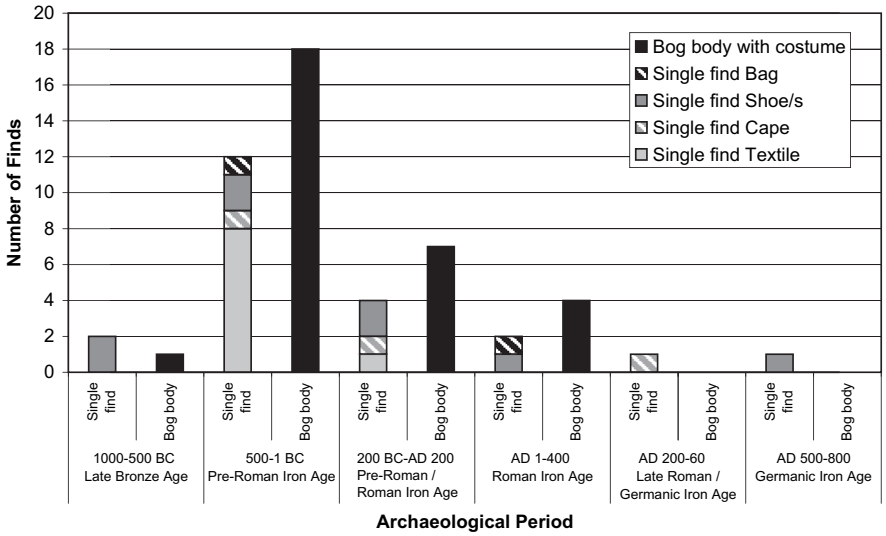

Fig. 4. Context based distribution of 30 Danish bog bodies and 22 single finds in relation to archaeological periods. Finds of bog bodies may contain a mixture of textiles and skin objects.

uniformity in pattern and technique (Fig. 6). Therefore, a more detailed stylistic grouping may only be possible with ^{14}C dating. In this connection the skin garment from Møgelmose is of special interest as the find testifies that skin garments still constituted an important part of the costume tradition in the Roman Iron Age. On the other hand its unusual pattern of a sleeved tunic has parallels amongst Roman Iron Age textile finds from North Germany. During this time skin and textile garments became increasingly tailored using different construction techniques than in the previous period (Mannering and Gleba, forthcoming; Vanden Berghe et al., 2009).

Another important new result is the new dating of the Huldremose Woman (Huldremose I), previously dated to 200 BC – AD 350, and which now has been given an earlier date of 210–41 BC (Fig. 7). The Huldremose II find (a single find of a tubular textile) which was found 17 years later than the Huldremose Woman (in 1896), and has never been dated before, is dated to 210–30 BC. In spite of the overlapping dating the two finds are not considered to belong to the same deposit (Fig. 3). Another textile, similar to the Huldremose II garment, of unknown provenance, which is kept in the collections of the National Museum of Denmark has also been dated, and the result of 400–200 BC confirms it as belonging to the textile material from the Pre-Roman Iron Age. Thus, the Huldremose II garment was not a unique item of clothing but probably a more commonly used garment type in this period (Mannering and Gleba, forthcoming). A very unique textile also confirmed as belonging to this period (390–200 BC) is the textile from Ømark. This textile is a fully preserved blanket with clear traces of an applied pattern of wavy lines on the surface. This remarkable find is the earliest instance of a painted textile in Europe.

Interesting results have also been obtained for the find from Krogens Mølle which contains a bog body, most likely of a woman, as well as skin and textile garments. A previous dating performed on a skin cape placed the find in the period 400 BC – AD 250. Due to the insecure connection of the textiles to this context it was decided to test both a textile and a skin object. The results of the two samples gave a very similar range, 399–207 BC for the textile and 376–181 BC for the skin cape respectively (Fig. 3). These results testify that the objects are contemporary but still do not prove that they belong to the same context. Other approaches, like strontium

Fig. 5. A pair of shoes found together with the bog body from Rønbjerg III dated to the Pre-Roman Iron Age. Photo Roberto Fortuna, The National Museum of Denmark.

Fig. 6. The skin cape from True dated to the Pre-Roman/Roman Iron Age. The cape is presented from the flesh side. The cape is a single find. The bar measures 10 cm. Photo Roberto Fortuna, The National Museum of Denmark.

Fig. 7. The costume belonging to the Huldremose Woman dated to the Pre-Roman Iron Age. Photo Roberto Fortuna, The National Museum of Denmark.

isotope tracing may be able to shed more light on their possible common affinities in the future (Frei et al., 2009).

5. Conclusion

An important result of this study is that the majority of bog finds with well preserved bodies and/or textile, skin garments and shoes fall within the Pre-Roman Iron Age and the beginning of the Roman Iron Age, thus suggesting that the practice of placing bodies in bogs and making bog sacrifices of textiles and skins as single objects were phenomena particularly common in this period. Only in the case of the female body from Møgelmose, does its vertical position in the bog indicate a drowning accident. This suggests that bog finds should be interpreted in a more differentiated manner than previously (Asingh and Lynnerup, 2007). The care with which these bodies were placed in the bog indicates that it represents a hitherto unrecognised burial custom supplementing the more common burial practice in this period.

The many new datings of textiles, skin garments and shoes have provided archaeologists with an excellent tool to revise the understanding of not only our costume history but also our understanding of Danish Pre-Roman Iron Age society. Only very few textiles from grave contexts of this period have been recovered (Bender Jørgensen, 1986, 294–295). Based on these few fragments alone it has been very difficult to get a clear picture of the contemporary textile technology or costume. As it is now confirmed that most of the textiles and costumes from the Danish bog finds belong to a Pre-Roman costume tradition, this provides a entirely new perspective to our understanding of the development of Scandinavian costume.

The complete series of dates now available for the Early Iron Age costumes from Danish bogs provides a new tool for the interpretation of textile and skin technology, which clearly differs from the preceding Bronze Age (Broholm and Hald, 1940) and the following Late Iron Age costume traditions. These interpretations are not possible without the ^{14}C dating methodology and its current precision. The methodology provides an excellent tool for investigating and interpreting material when more conventional archaeological dating methods cannot be used. This is especially true for skin and textile items which represent developments over very wide time periods and therefore, unlike ceramics, jewellery and weapons cannot be subjected to the same degree of precision in terms of their typologies. Furthermore, textiles are especially suited for radiocarbon dating due to their short lifespan (van der Plicht et al., 2004). ^{14}C is therefore particularly important to apply to textile and skin materials and allow for a much more detailed picture of textile technology and use of costume throughout the Danish Early Iron Age.

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