"The proper study of mankind, is man."
- Alexander Pope.

The subject of this thesis has been deliberately chosen in the hope that it will help to re-state, in however small and unimportant a way, the true aim of archaeology - the understanding of mankind.

Greece's earliest archaeologists, of all nations, never lost sight of this. Schliemann, still perhaps the most remarkable of them all, may serve as an example.

He has been accused of treasure-hunting, of avaricious haste, of romanticising - but had he not been a romantic, he would never have been an archaeologist, although he might have been an even wealthier merchant. Because he was looking for the remains of Homer's Troy, of Homer's Mycenae, of Homer's Tiryns, he was aware that he was looking not merely for remains, but for the remains of men. His telegram to the King of the Hellenes stating that he had discovered the body of Agamemnon, is quoted by later scholars not for its imagination, its consciousness of a human being behind the golden mask, but for its fallacy; nevertheless, it must be one of the most attractive mistakes in the history of archaeology.

Schliemann was also aware of the nameless faces - could see a sherd and remember the potter; could hold a tool in his hand, and realise that other hands had once held it. Because he found "enormous masses" of whorls at Troy,
he gives an excellent, concise account of the implements for, and art of spinning in antiquity; then, to bring the matter to life, he says "I cannot deny myself the pleasure of adding to this matter-of-fact exposition, the imaginative passage in which the prince of novelists describes the process." He then quotes Sir Walter Scott's description of old Elspeth spinning in "The Antiquary", and closes with the remark that he has observed this method of hand spinning in the remoter parts of Greece at the time of writing - a remark which holds true to the present day.

Another virtue which Schliemann shares with many of the earlier Aegean archaeologists, is a lively curiosity about objects which are neither beautiful nor spectacular, to which he cannot put a name, and of which the use is unknown to him. He does not cast them aside, as some later archaeologists have done, but records them with interest, frequently illustrates them, sometimes discusses their possible use, sometimes admits himself defeated, but describes them none the less for the benefit of future scholars.

A typical example occurs when he publishes two perforated cylinders of grey, sun-dried clay from his Fourth City at Troy. Providing excellent woodcuts of them, he says "The use of these cylinders is unknown to us. We cannot admit Lindenschmidt's opinion, that they served as weights for fishing nets, as they are not baked, and would

2. Sir Walter Scott "The Antiquary", Chap. XXVI.
consequently dissolve in water"; Schliemann was possessed of common sense as well as imagination. (The objects in question were loomweights of a type prevalent in Early Helladic Greece). That the man who was able to deck his wife in "the golden treasure of Priam" should also devote himself to such humble lumps of clay is admirable.

Many of the archaeologists who were his immediate successors in Greece, the great Greek Tsountas, the American Harriet Boyd Hawes, the early members of the British School at Athens, Bosanquet, Dawkins, Edgar, Hogarth, Myres and Mackenzie, and the peerless Sir Arthur Evans, resembled him in their wide range of interest, enthusiastic publication, and, above all, their awareness of humanity behind the ruins and the sherds.

Some later scholars, such as the American Carl Blegen and Britain's Alan Wace, were able to combine the earlier breadth of vision and enquiring spirit with a more exact (and exacting) scientific approach, to the great benefit of Aegean archaeology; yet it is, unfortunately, this very advance in method which, in lesser hands, has made many modern archaeological reports such dull reading.

The great increase in the volume of archaeological information has necessarily led to greater specialisation, and this seems to be particularly true of the study of pottery. Because it is so essential for dating, and useful for indicating contacts between sites and cultures, it occupies the greater part of each new publication, until it

sometimes seems that the chief purpose of an excavation is
to decide in which half-century each of its pots was broken.

Besides pottery, architecture, if handsome, and
spectacular objects such as jewellery, seals and tablets,
are sure of adequate publication.

Two classes of archaeological material, however,
are often very summarily dismissed - artifacts, and the
human beings who made and used them. Most of the evidence
on which this thesis is bases comes within these two
categories.

The nature of tools is so conservative, that they
are often of no value for dating, but even this is not always
so; occasionally they indicate one particular period as
reliably as any pottery style. Their very conservatism
may also be an advantage, for it is just because their forms
often remain unchanged for hundreds, or even thousands of
years, that they may be used as a reliable indicator of
movements of peoples.

Their greatest value, however, is that they can
provide information not so much as to when or where people
lived, but how they lived.

The people of today have much to teach the
archaeologist about the people of the past, especially in
the lands of the Aegean and the Near East, or indeed in any
country where an unbroken tradition of peasant farming has
been maintained from antiquity until the present. This
was clearly realised by Schliemann and all the great
archaeologists of the past, but because of the pressures of
specialisation, is in danger of being forgotten today.

It is with the hope of preserving this element, if not of the romance, at least of the human interest of archaeology, that this thesis is undertaken, and in describing even one activity in the lives of those who were, in a broad sense, our ancestors, it is hoped to add, if only by very little, to our knowledge of that fascinating species, the human race.
INTRODUCTION.

We do not know what quirk of fate first implanted the idea of combining strands in the fertile brain of homo sapiens, any more than we know how fire was discovered, or where the first seed was deliberately sown; but one imagines the creation of a need, and then some fortuitous happening providing a solution. Wind-blown reeds entwining, an animal's matted coat, even the tangled hair of some paleolithic head, may have been the inspiration.

Some of the textile arts were certainly practised in the paleolithic age. Paleolithic spindle whorls have been found, as have paleolithic needles with fine eyes. Spinning and sewing are skills which would be useful to nomadic hunters, spinning to produce ropes for climbing, cord for nooses and other forms of snare, and thread for tool bindings, fishing lines and perhaps nets, and for sewing; and sewing was probably used for fashioning clothes and footgear from skins.

The materials spun may have been fur or hair (including human hair), animal sinews, or, in spite of the difficulties involved in its preparation, vegetable fibre.

The latter was certainly in use in the mesolithic age, as is proved by the remains of a fishing net found at

3. K. P. Oakley "Man the Toolmaker", 1949, p. 66, Fig. 28b.
Korpilahti in Finland. It was made from a plant bast which had been spun in an anti-clockwise or 'S' direction, which is the natural one for flax and allied fibres.

Mesolithic fish traps have also been found which display weaving techniques that were later to be employed in making baskets and mats.

By the mesolithic era, then, the complicated processes of fibre preparation, the arts of sewing and spinning, and some knotting and weaving techniques had been mastered - yet no remains of baskets, mats or textiles have been found, and it is possible that none exist. This does not indicate any lack of skill or intelligence; it is simply that these possessions are unsuited to a nomadic life based upon hunting, fishing, trapping and food-gathering. Such a life, without so much as the advantage of pack animals, means 'travelling light'. Hunting equipment, and, at most, a small dilly bag for minor food supplies such as fruit, roots and seeds, are the necessities, and anything like a large basketry container or a mat would merely be an encumbrance; while the invention and setting up of a loom, let alone weaving upon it, would require a number of days' stay in one place, and release from the perpetual foraging necessitated by the demands of a clamorous

3. Cf. the stage reached by Tasmanian and Australian aborigines when in their natural state.
belly dependent upon an uncertain and incalculable food supply.

These requirements are partially fulfilled by a state of nomadic pastoralism. Flocks and herds provide a steady source of both food and fibre; pack animals can carry quite substantial possessions like tents, mats and looms; and good grazing can make constant travel unnecessary. It was perhaps at this stage that the other textile arts, especially the weaving of cloth, were evolved. This is suggested by the fact that, in the settled conditions of the neolithic age, when the cultivation of crops first made it possible for people to remain permanently in one place, these crafts emerged fully developed.

At Çatal Hüyük in Anatolia, an Early Neolithic site of the seventh millennium B.C., remains of baskets, matting, thread, strings, tapes, and three different types of cloth were found, as well as loomweights, spindle whorls, and weaving needles. Dyeing was practised - the thread mentioned above was red. Evidence for patterned weaving was provided by textile-inspired designs which were used to decorate walls and pottery. Sheep bones were found at the

1. A Bedouin tribe with whom I was acquainted in 1965 were able to spend over a year in the Negev Desert, between Be'ar Sheba and the Dead Sea, because of exceptional rainfall. As well as feeding their flocks and herds, they raised an extensive crop of barley, and even some water melons. I did not ever see them weaving, but their black tents were hand-woven, although lamentably patched with chaff sacks. The women span while minding the sheep, but the material of their clothing was usually factory-made. When I returned the following year, the season was dry, the desert was a desert, and there was no sign of them.

site, but an argument still rages as to whether wool or flax was the raw material used in the cloth fragments.

These pieces of cloth are the world's oldest textiles, but there is nothing primitive about them. The thread is so fine and the weaves so even and regular that no modern draper would hesitate to include them in his stock (in fact if labelled 'genuine handwoven' they would probably command an exorbitant price).

The basketry and matting were of equally high standard.

The Scope of the Work.

The non-Greek site of Çatal Hüyük has been referred to not only because it has the earliest textile remains yet found, but because it provides an example of nearly every kind of archaeological evidence which may be taken into account when studying such a subject as that of this thesis. It also proves, as the Greek sites, less well-endowed, cannot do, that textile techniques were so advanced and textile processes so well understood in the Early Neolithic period, that no major advances were made, or changes of method needed, either in the rest of the Neolithic or in the following Bronze Ages, or indeed much later - in fact some of the techniques known to the people of Çatal Hüyük are still in use today.

2. Spinning with spindle and whorl is still widely practised in the Aegean, the Near East, and elsewhere; warp-weighted looms are still used in Western Norway and among the Lapps, although rapidly becoming obsolete. The coiled basketry and twilled matting of Çatal Hüyük are commonplace still, as is the plain cloth weave.
The picture is repeated in many parts of the ancient world. Egypt is particularly rich in all kinds of textile remains dating from the fifth millennium B.C. onwards.

Greece has not been so fortunate. Conditions there are not favourable to the preservation of textiles. The few remains that have survived have done so because they were in contact with metal, or by leaving their impression on clay. Consequently the majority of evidence for spinning, weaving and textile-making in Greece is of an indirect nature: tools chiefly, and occasional textile patterns on pottery and figurines. Only in the last phase of the period with which this thesis is concerned, does the scope widen to include cloth shown on figures in wall-paintings, raw materials and fabrics mentioned in clay tablets, and a Dark Age author's impressions of Mycenaean textile practice.

In spite of this apparent dearth of evidence, it is surprising how much can be learnt even from the tools alone, when they are considered, not in isolation, but against the background of textile methods both in the ancient world, and in the present day Aegean and Near East; and both are frequently referred to without apology.

Other material which may at first seem beyond the scope of the subject is included in the thesis. It can be argued that basketry and matting are not cloth - yet they are true textiles. 'Textile' is generally defined as any woven fabric, and nearly all varieties of baskets and mats are woven. More important, matting and basketry weaves

are often employed for cloth, and vice versa, so that
the dividing line is indistinct, and skill in one craft
may well reflect skill in the other.

Some tools which are not definitely or directly
connected with spinning and weaving have seemed to merit
discussion, because they have frequently been published
with the suggestion that they are connected with textiles,
and the question needed consideration. Cases in point are
the Neolithic waisted pebbles, the Early Bronze Age clay
'm'anchors', and the Mycenaean steatite 'whorls'.

Some parts of the thesis, especially the first
section on the technical background, are necessarily
largely dependent upon induction. Only too often one can
say "This may have been what happened", "This was probably
how it was done", without being able to prove "This
definitely took place". Such information has none the
less been included, because a knowledge of the possibilities
is surely preferable to no knowledge at all.

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1. One of the Çatal Hüyük cloth fragments was in a twined
weave generally used for matting; the same is true of
some of the Swiss Lake Village textiles; twill weaves
are very common in both matting and cloth, although there
is no proof that cloth was made in this weave in the
period under discussion; plain weave was and is used
for basketry, matting and cloth.