

## THE SUTTON HOO SHIP-BURIAL\*

By R. L. S. BRUCE-MITFORD

Assistant Keeper in the Department of British and Medieval Antiquities, British Museum

IN his introduction to the British Museum Provisional Guide (1947), Dr. T. D. Kendrick described this discovery as "the most marvellous find in the archaeological annals of England". Subsequent knowledge of the material has shown this to be a just estimate. In outline, the find consisted in the discovery on the east bank of the River Deben, opposite Woodbridge, in Suffolk, buried beneath a tumulus, of a rowing-boat more than 80 ft. long, the central part containing a highly remarkable burial deposit. Of treasure in a strict sense there were regalia and coins of gold and numerous silver vessels; but the many other items in the grave are almost all unique and of the greatest historical value and interest.

The excavation was begun and creditably carried out in the earliest stages under the Ipswich Museum; but the extremely difficult operations of recording and removing grave goods of quite unexpected richness and complexity, in many cases crushed, shattered or decayed, and the great scientific importance which, it was clear, the discovery would have, demanded greater resources, experience and technical skill than were available locally. The excavation was completed by Mr. C. W. Phillips, then a fellow of Selwyn College, Cambridge, and now archaeological officer to the Ordnance Survey. Mr. Phillips secured the assistance of some of the ablest figures in British archaeology, and of an expert in the history of ship-construction, the late Lieut.-Commander J. K. D. Hutchison, of the Science Museum. It is a most important element in the discovery that it was recorded and observed by skilled professional archaeologists, for the last find at all comparable in Britain (and it was a burial of much less importance) occurred in 1883, before the days of modern scientific archaeology.

Many of the grave goods deposited in the burial chamber illustrate with a completeness and colour provided by no other find, and equalled among literary sources only in the Beowulf epic, the social life of the Saxon aristocratic hall. The most interesting find in this respect is the small six-stringed maple-wood harp, preserved by the fortunate fact that it had been placed by the burial party in a bronze bowl. It is the first instrument of its kind (a quadrangular harp) to be discovered, a type not hitherto recognized by musicologists, and the earliest reconstructable instrument of post-Roman Europe. There are also the two outsize drinking-horns, with silver-gilt mounts embossed with animal patterns, and fashioned from the horns of the now extinct aurochs. They have a capacity of six quarts. There were five other drinking-horns of normal size (made from ox-horns) and nine tiny vessels with silver-gilt mounts made from the dried skins of scooped-out gourds. The smallest is only 1 in. in diameter and  $\frac{1}{2}$  in. high. These must have held something a great deal stronger than the customary mead, beer or wine drunk from larger vessels. The golden treasure and the sword with gold and jewelled mounts, like that borne before Beowulf in Hrothgar's Hall after the slaying of Grendel, and the silver dishes, were also part of the pride and ceremonial of hall-life on occasions of importance. The more strictly domestic

appurtenances of the feast are illustrated by three bronze cau'drons, with ornamental wrought-iron gear for suspending them, and three iron-bound wooden buckets.

The forty-five individual items of gold (excluding the coins) constituting the main treasure comprise a ceremonial outfit unparalleled in any other grave. They are fittings of the sword and the baldric on which it was suspended, and of a ceremonial belt. Almost all these pieces are heavily encrusted with garnets. Both technically and in art-historical importance, this jewellery stands higher than any other goldsmith's work of its era that has survived from Germanic Europe. Over and above the perfect assembly, marvellous finish, and sumptuous appearance of all the pieces, is an originality in design, an ingenious inventiveness in technique, a novelty in ornamental themes, and a general feeling that the artist has grown too big for the medium of which he has become past-master, that point clearly forward to the great expansion and flowering of art that distinguishes the latter part of the seventh century in Britain.

The qualities and excellencies of the gold cloisonné jewellery (seen to best advantage in the purse-lid, epaulettes and great buckle, and in the pyramids, scabbard bosses and pommel of the sword) would alone give the Sutton Hoo find European pre-eminence. Other factors, however, raise it on to the European plane more directly; and it is the remarkable constellation in one closely dated grave in a quite specific historical context of a large number of pieces, not only of the highest significance and quality, but also of the greatest diversity, that gives the find its unique archaeological status. Thus although the minting of gold coinage had already begun in Kent and London before the date of the Sutton Hoo burial, none of the thirty-seven struck gold coins in the purse was English. They are all Frankish. Of the thirty-seven, seventeen are 'mint-declaring'. If the mints are plotted it will be seen that they fall within, roughly speaking, the boundaries of modern France, and are distributed all over it. The heavy bronze bowl, with drop handles, in which the remains of the harp were found had travelled more than two thousand miles from Egypt. It was almost certainly made in Alexandria. Four stamps on the bottom of a great silver dish,  $27\frac{1}{2}$  in. in diameter, show that it had passed through the office of the Imperial assayers in Constantinople during the reign of the Byzantine Emperor Anastasius I (A.D. 491-518). The fifteen other silver pieces in the grave probably came from regions of the Middle East farther afield than Byzantium. The gourd drinking-cups cannot have had any nearer place of origin than the south of France. These pieces show live connexions between seventh-century Saxon England and southern countries and the surviving sub-classical civilization of the Eastern Mediterranean. But the helmet, shield and perhaps sword reveal for the first time in English archaeology direct connexions of deeper significance with a different part of Europe—the Baltic coast of Sweden. Three hanging bowls of thin bronze with enamelled ornamental escutcheons came either from Ireland or from the Celtic west of England.

Perhaps the most important single fact about this find is that it can be closely dated. The limits for the burial, between A.D. 650 and 670, deduced from the coins, ranks as excellent dating for any archaeological material of this era.

\* Substance of a Friday Evening Discourse at the Royal Institution on October 28.

If, as we have every reason to believe, the Sutton Hoo grave is that of one of the East Anglian kings, this dating margin can be further reduced to the period 654–664, for the three East Anglian kings who died within the larger period (650–670) died in the years 654, 655 and 663 or 664. This precision in dating has a further particular importance in insular archaeology in view of the highly complicated art-historical situation in Britain in the middle of the seventh century A.D. At this period we find in progress a creative fusion of Saxon, native Celtic, Irish and Mediterranean elements, and a difference of even a decade either way in the dating of crucial art-documents (such as the Sutton Hoo jewellery) may make all the difference to our interpretation of the course of art development at this time, when British art stood higher than any other in Europe.

The systematic burial of 'grave-furniture' with the dead is a pagan procedure. As the Sutton Hoo burial is the most richly furnished we know, it is in this respect the most wholeheartedly pagan. Yet the burial took place well within Christian times. The general conversion of East Anglia had followed the accession of Sigberht and the establishment by him of a bishopric at Dunwich. These events occurred not later than A.D. 631. Indeed, the grave itself contains clear signs of Christianity, not only in imported objects such as the set of ten shallow cross-bearing silver bowls and the pair of silver spoons bearing in Greek the names Saul and Paul, but also in the locally made jewellery, and, significantly, on the most personal and cherished object in the grave, the dead man's sword. The design of the gold and garnet scabbard-bosses is based upon an equal-armed cross of specifically Christian character. We must also note that these Christian pieces do not occur haphazardly in the grave, but were placed, as with deliberation, at the right side and shoulder of a recumbent body, visualized as lying in the position indicated for the body by the disposition of the grave-goods. If we take this to mean that the dead man was a Christian, and if we still regard him as one of the East Anglian kings (as, among other things, two symbols of office, the giant whetstone and iron standard indicate), serious difficulties arise. It is not so much that the provision of grave goods was a pagan custom, for the Church did not prohibit the practice; but from the first the Church sought to ensure that Christian bodies were buried in consecrated ground, and particularly was this the case with royal families. It would be almost impossible to imagine Anna (one of the three eligible East Anglian kings, who died in 654), a most Christian person, all of whose daughters became nuns and three of them saints, as being buried in the old pagan grave-field at Sutton, when there were numerous churches and monasteries in Suffolk to receive his body. In fact, we know that he was buried at Blythburgh, and that his body was still venerated there in the twelfth century. It is similarly difficult to imagine that the body of another of the three eligibles, Aethelwald (died 663–4), lay here. He was a Christian, godfather to the king of Essex, and died in the year of the Synod of Whitby. It is possible that (if the burial does not represent an unrecorded lapse into paganism) the solution to the dilemma lies in the absence of the body. No trace of any body, even in the form of stains, bone meal or changes in the colour or texture of the soil, could be found by the excavators where it should have lain. An analysis of the positions in which the gold jewellery was found

shows that this 'regalia' cannot have been worn on a corpse, either sitting or lying. Other important factors point strongly to the conclusion that the grave never contained a body; but was a cenotaph. If this is so, it is possible that in the great ship-burial we have the public and traditional monument of a king, whose body received Christian burial elsewhere. The Sutton Hoo burial falls just at the close of a heroic age, and in a strange phase of transition between paganism and Christianity. It may be that we have in it another monument typical of this phase, like the Franks casket, with its mixture of pagan and Christian iconography, or the Beowulf epic, in which Christian sentiments and references suffuse older pagan material.

The Sutton Hoo ship-burial is the first intact royal inhumation of its period to have come to light in Europe since the burial of Childeric I, King of the Franks, was discovered at Tournai in 1653. Great importance is thus attached to the application to it of the full range of modern scientific technique and of modern scholarship. In the first place, we have the field technique of the excavators, which enables us, for example, to make an accurate scale model of the Sutton Hoo ship—the earliest English naval vessel—although its timbers had wholly perished, leaving no more than stains and iron rivets in the sand; and which records every phase of the excavations, in addition to plans and notes, in more than a thousand photographic negatives of high excellence. Upon the excavated and recorded materials is brought to bear the resources and experience of the British Museum Research Laboratory, supplemented by a wide range of specialist scientific knowledge and experience from outside the Museum, in botany, zoology, ornithology, geology, human anatomy, metallurgy and other fields. Finally, the material is subjected to the full apparatus of modern historical scholarship based upon the widely ranging researches of many workers in literary, historical and archaeological fields. Thus not only is the Sutton Hoo find in itself richer than any other European grave of its era that has come down to us; but we are also able to extract from it vastly more information than has been possible from any strictly comparable European find of its kind in the past.

An illustration of these points is provided by the reconstruction of the Sutton Hoo harp. Its basis is the careful recovery by the excavators of some hundreds of fragments of crushed and distorted wood belonging to the instrument. By re-building and re-assembling two tenon-and-mortice joints in pieces of the main framework, and fitting to it two gilt-bronze plaques with projecting birds' heads, from which ran rivets which held fast the joints, it was possible to re-assemble the framework of the instrument up to a certain point, though without its sound-box or resonator. The result indicated a six-stringed instrument some eighteen inches in height. The wood of the frame was identified as maple in the Department of Botany at the British Museum (Natural History). The stumps of six pegs which came from the peg-holes in the curved arm of the instrument were identified as either poplar or willow by the Director of the Jodrell Laboratory in the Royal Botanic Gardens at Kew. At various points on the maple frame were inconspicuous dark patches. They consisted of hairs and skin, and microscopic examination at the British Leather Manufacturers' Research Association showed that they were from a



fur-bearing animal. Later on, Dr. J. L. Stoves demonstrated that they were beaver hairs. From the distribution of hairs on the frame it was possible to deduce that the harp had been kept in a beaver-skin bag. Inquiry into the stringed instruments of the ancient world showed that they fall into two classes, lyres and harps. The lyres are invariably symmetrically designed about the peg-arm or yoke at the upper end of the instrument, whereas harps are asymmetrically designed about the upper-end or peg-arm. The Sutton Hoo remains belonged to an instrument asymmetrically designed in this respect and therefore to the harp class. In the harp, however, the longest limb is itself a broad hollow box which functions as the resonator of the instrument. In the Sutton Hoo instrument this limb is thin and solid. The instrument must have had a resonator to function at all, and the only solution that the surviving remains allowed was that it had been of quadrangular form with the resonator at the bottom. Notes made when the remains were excavated showed that this portion of the instrument would have projected at the top of the bronze bowls in which the remains were found, and a large number of fragments of thin maple sheeting taken from the top of the bowls proved to be the remains of a capacious sound-box. For the solution of many remaining problems of detail, a practical approach was necessary. Musicologists were consulted, and experimental models were made in the workshops of Messrs. Arnold Dolmetsch, Ltd., at Haslemere. An experimental playing reconstruction, attained through study of the remains and experiment, was confirmed by research among early illustrations. An eleventh-century Anglo-Saxon MS. in St. John's College, Cambridge, for example, showed in use an instrument of the same kind as the Sutton Hoo harp. The fact that it is held by a second person, and that the player is touching the strings from both sides, showed that it is an open-stringed instrument of harp-type, with a resonator at the bottom, and not a vertically held frame (psaltery) with sounding-board behind the strings. There is no direct evidence for a tuning key among the Sutton Hoo remains; but the use of such a device was inferred from the fact (only ascertainable by experiment) that even when the heads of the pegs were made of the smallest size that would allow the fingers to get a purchase on them, the spacing of the

peg-holes was so close that, when two adjacent peg-heads came nearly horizontal, it was impossible to pass the fingers between them. Justification for this inference was later found on the ivory cover of a twelfth-century manuscript in the British Museum, on which a musician may be seen tuning an instrument of the Sutton Hoo type with a small key.

The harp as reconstructed has a charming tone, and wide melodic range, and simple harmonies can also be performed on it. To ears accustomed to brass bands and the ninety-piece orchestra it sounds surprisingly soft; but this softness is a true characteristic of primitive stringed instruments, and is to be found, for example, in the shoulder-harps of ancient Egypt or the recent clavichord.

The Swedish connexion in the Sutton Hoo find provides a good example of its European implications. The common custom of boat-burial, confined at this period to Suffolk and Uppland, and certain material from Sutton Hoo, show that we are not dealing with casual gifts or imports, but with a deeper connexion. It is too early to interpret this connexion with authority; but it has been suggested that the East Anglian royal house (the Uffingas) may prove to be in origin a branch of the royal house of Uppsala. This connexion is an entirely new fact in English history, to which documentary sources give no clue. The intimate character of the archaeological links may be indicated by the fact that one of the scenes on the Sutton Hoo helmet was only reconstructed with the aid of an identical scene on a helmet newly excavated in Sweden, and that gold cloisonné pyramids like those that decorated the sword-knot of the Sutton Hoo sword have so far been found elsewhere only in the great royal mounds at Old Uppsala.

Years of study and digestion lie ahead before the full significance of the Sutton Hoo discovery will be understood. What we already know of it well illustrates the great potential historical value of archaeological material, even within the framework of comparatively recent history. A monument such as this, both in general interpretation and the wealth of concrete detail it provides, brings the modern student in many ways into living touch with seventh-century life and history, where other documents do not exist, remain tantalizingly silent, or singularly fail.

## NEWS and VIEWS

Prof. J. E. Littlewood, F.R.S.

PROF. J. E. LITTLEWOOD, the first holder of the Rouse Ball chair of mathematics at Cambridge, will vacate it this year on reaching the age of sixty-five. A pupil of F. S. Macaulay at St. Paul's School, he learned as a boy to distinguish between vital ideas and examination tricks. Going to Cambridge, he realized that preparation for the tripos would consist largely of acquiring a repertoire of tricks, but decided that it was a game that he could play as well as his contemporaries, and he was bracketed senior wrangler in 1905. He lost no further time before plunging into real mathematics, and he proved some deep results about integral functions. He spent three years at Manchester and returned in 1910 to a fellowship and lectureship at Trinity College, Cambridge; he was elected professor in 1928. After the triumph of the Abel-Tauber theorem (1910) he began his long

partnership with Hardy, a partnership without parallel in the history of mathematics. Among the topics to which they made major contributions in the course of thirty years are convergence and summability of series, trigonometrical series, inequalities and the analytic theory of numbers.

Littlewood has done much work independently, mainly in complex-function theory, and he has collaborated on a large scale with Paley, Offord and Miss Cartwright. A mathematician of the front rank normally produces, apart from his finest theorems, work which a reader feels has not really stretched him. In the pages which Littlewood has written, running into thousands, there are remarkably few which could have been the work of anyone else. He has distilled the essence of years of lectures into two highly individual books, "Elements of the Theory of Real Functions" (1926) and "Lectures on the Theory