

The Transfer of Stone Artefacts from the Geological Museum to the British Museum

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INTRODUCTION

In 1988, the trustees of the British Museum (Natural History) (BM NH) decided to transfer the collection of stone artefacts previously held by the Geological Museum (GM) to the British Museum (BM) under the terms of the British Museum Act of 1963. These artefacts had been transferred to the BM(NH) from the British Geological Survey in 1985. The Geological Museum was formerly known as the Museum of Practical Geology, and was opened in 1851 in Jermyn Street. It had its origins in a small geological museum which was joined with the newly formed Geological Survey in 1845. The Museum moved to South Kensington in the 1920s, and was amalgamated with the BM(NH) in the 1980s. The BM(NH) subsequently changed its name to the Natural History Museum (NHM).

The physical transfer of the material began in 1989, but was not completed as it was agreed that various specimens would remain on display at the GM for the foreseeable future. In 1995, the old GM galleries were dismantled to make way for the new NHM Earth Galleries, and the transfer was concluded. The objects are now incorporated in the collections of the BM Department of Prehistoric and Romano-British Antiquities (accession number 1989.3-1). The transfer included material from both the GM Mineral Inventory and the Economic Collections, as well as a few objects from earlier registers (all registers now held by the NHM). There was little paper archive concerning the objects.

The collection is of considerable historical interest both for the study of Palaeolithic archaeology and stone artefacts in general, but has never been well known to archaeologists. It is hoped that this note will acquaint the members of the Lithic Study Society with this remarkable collection.

THE COLLECTION

The collection was amassed over the entire course of the GM's history, and a high proportion appears to have been found by geologists during the course of their work. A majority of the material is from England, but there is a small proportion from elsewhere in Britain and the rest of the world. The earliest find recorded is a Neolithic axehead from Borstall, Buckinghamshire which was found in 1838. The most recent acquisition was a Mesolithic pick

from Sonning, Berkshire, donated in 1980. However, most of the material was found during the late 19th and early 20th centuries. The collection is dominated by Lower Palaeolithic material, which presumably reflects the close relationship between the fields of geology and prehistoric archaeology at this time.

An unusually high proportion of material was acquired by the Museum in the mid-1930s. Judging from notes in the accessions register concerning the purchase of material from Warsash and Cams, Hampshire in 1935, it is likely that the influx of material relates to the mounting of a series of displays on the regional geology of Britain. This hypothesis is supported by the quantity of the mid-1930s acquisitions which were still on display in the Regional Geology Galleries until 1995, or were associated with plaster exhibition mounts when collected in 1989. Objects from both of the other small collections purchased in the mid-1930s were included in the material left on display until 1995 (Ebbsfleet, Kent; East Anglian eolithic material). The purchases were unusual, and most of the material acquired in the mid-1930s was by donation, as is the case for the collection as a whole.

The GM collection can roughly be divided into three parts on the basis of archaeological association: stray finds; type series; and complete collections. As would be expected in a museum where archaeology was a peripheral interest, the first two categories predominate. Indeed the latter is restricted to two collections of Lower Palaeolithic material from Southeast England: the Sir John Flett collection of material from Milton Street, Kent; and the Hugh Beever collection of material from Croxley Green, Rickmansworth, Hertfordshire (donated in 1935). The stray finds category makes up roughly 35% of the remaining English material, and c. 90% from the rest of the Britain and the world. The type series are small representative groups of material from important sites, a majority of them Lower Palaeolithic in age and English in provenance. The primary parts of these collections are usually housed in other museums, along with their associated paper archive. During the transfer of material there were several examples of material from the GM being reunited with material from the same site already held at the BM.

Very little archaeological material was purchased by the Geological Museum, presumably as such objects were outside the direct remit of the museum. With the exception of the material for the 1930s exhibition

noted above, purchases are restricted to examples of what could be classed as curiosities of interest to Victorian geologists: ie two handaxes of greensand chert which were found at Broom, Devon, in 1879 (an unusual raw material for handaxe manufacture); a few Lower Palaeolithic objects found in London in the late 19th century, including two handaxes found in Jermyn Street itself; several replicas of lithic tools by the forger George Glover (1894); nine examples of Danish Neolithic and Bronze Age flint implements (1867); and an implement made of fossil shell from Barbados (1880).

Casts are also infrequent in the collections and again can be divided into those acquired in the mid-1930s, presumably for the exhibitions, and items of Victorian interest. In the first category are a series of casts of Palaeolithic implements from Kent's Cavern, Devon, which were donated by the Torquay Natural History Society in 1933. Two of these could not be located during the transfer. Other casts acquired at the same time would also have been of considerable value for those displays: a quartzite handaxe found outside the known area of Lower Palaeolithic activity in Baginton, Warwickshire by F.W. Shotton (1935); and two of the handaxes found by John Frere at Hoxne, Suffolk, in 1797 (1935). There are only three examples in the category of casts of interest to Victorian geologists. First, a series of eight casts of Upper Palaeolithic worked bone and antler objects found in the Dordogne Caves, France, which were presented by the Trustees of the BM in 1867. Such was the widespread interest in this material that the BM Trustees donated similar casts to most major museums at the time. Second, a cast of a handaxe found in the gravels near Bournemouth, Dorset, donated by Albert Way in 1869. Finally, a vast polished stone axe found near the Pontoon Lakes at Castlebar, Co. Mayo, Ireland (presented by E Swain in 1897).

The Eolith Debate

A connection has existed between the fields of Palaeolithic Archaeology and Geology since the beginnings of scientific deliberations into the antiquity of humankind, and has continued to the present day. Two of the key questions over which the professions were intertwined in the late 19th and early 20th centuries were: how old these ancient traces of human activity were; and where was the dividing line between human working and natural forms of flint. The extent of the interest geologists had in these issues is evidenced in the quantity of relevant material in the GM collections.

There are a few genuine mistakes of natural forms for human artefacts in the collection (eg a piece

from Folkstone, Kent, which was thought to be an arrowhead). However, most of the natural forms in the collection are there either in support of, or against the 'eolith' argument. Eolith (or 'stone from the dawn of time') is the general name given to what were assumed to be human artefacts found in pre-Pleistocene contexts. These forms are now recognised as being of natural origin, but the debate was a heated one for several decades, and was not unconnected to the Piltdown Man forgery.

There were two main phases of the eolith debate in England, the first centring around the work of Benjamin Harrison of Ightham, Kent, in the late Victorian era, and the second represented by J Reid Moir of Ipswich in the 1920s and 1930s. Both phases are represented in the GM collections. The collection contains a quantity of material collected by Harrison from the 'Kentish Plateau': Some was donated by Harrison himself (dug with a grant from the British Association and reported in 1895); and the rest via other people (ie Dr Whittaker and Worthington Smith). The largest collection of Harrison material donated to the GM was a series of 69 eoliths together with sketches, watercolours and descriptions which was purchased from Harrison by Colonel L B Bevington (donated in 1898).

A large quantity of material from East Anglia was purchased from J Reid Moir in 1934 presumably for exhibition purposes. Much of this material is published, and was taken as evidence of 'pre-Crag man'. Other examples on the pro-Eolith side of the debate include material from Cromer Beach, Bolton's Brickpit, Ipswich and Sheringham, Norfolk (donated by Professor Henslow in 1935); the Marlborough Downs (donated by F G Bennet in 1904); and Winterbourne Bassett, Wiltshire (donated by H G O Kendall in 1904).

Representing the other side of the debate is material donated by Henry Dewey in 1935 which includes real artefacts and natural forms of flint from various locals in the Norfolk Crag, and the Cromer Forest Bed. In 1934, Dewey also donated examples of flints with characteristic patterning resulting from natural processes which could be mistaken for human working: pot-lid fractures, starch fractures and pressure of gravel. He also donated an experimental cone of percussion. The purchase of the Moir material and the donation of the Dewey material in the mid-1930s is almost certainly related to the mounting of the new exhibitions. No doubt the GM wanted to display examples of both sides of this controversy so that visitors could make up their own minds. It is unfortunate that the material from the Red Crag, Norfolk, which was donated by both Moir and Dewey could not be located during the transfer as the relevant display bay had been dismantled without record.

An exhibition donated to the GM by Professor T McKenny-Hughes in the 1860s concerning the recognition of worked stone artefact types and natural forms is discussed in detail in Appendix 1 as the exhibition was never completely dismantled and incorporated into the rest of the collection.

The Archaeological Objects

The following sections summarise the archaeological material transferred from the GM to the BM. Full details and bibliographic references can be found in the Accessions Register for the collection at the BM. Owing to the dominance of the English material in the collection, the material is summarised initially in relation to geographic area: ie England, the rest of Britain, and the rest of the world. The English material is further subdivided into chronological periods.

ENGLAND

Lower Palaeolithic

The Lower Palaeolithic material from England is perhaps the best known part of the GM archaeological collections as much of it was incorporated in the two major compendia of this material, both published in the 1960s (Roe 1968; Wymer 1968). These two works and subsequent publications by these authors provide details of context and associates for many of the sites listed below (eg Roe 1981; Wymer 1985). This material comprises well over half of the entire GM archaeology collection.

Bedfordshire: Material collected by A C G Cameron in the 1890s during geological work in the county (donated 1900); and a small quantity of material collected by Worthington Smith in 1890 at Caddington and Hitchin (donated 1930).

Devon: A single greensand chert handaxe found at Beer (donated by Sir Thomas Barlow in 1942); and two greensand chert handaxes from Broom (purchased from Mr Bailey in 1879).

Dorset: A series of implements from the Macdonald collection (donated per Dr Welch in 1935); and others from Corfe Mullen (donated by Henry Dewey in 1935).

Essex: A single object from Clacton (donated by Henry Dewey in 1935).

Hampshire: A group of material from Warsash (purchased for the Hampshire Basin exhibition from C J Mogridge in 1935); two objects from Lee on Solent (donated by H J Osbourne White in 1914; and Col. A Jamieson in 1912); and single objects from the beach at Hill Head, Fareham (donated by Hon. E

T Yorke in 1864), and Stubbington (donated by the Geological Survey in 1866).

Hertfordshire: A large collection of individually labelled objects from Croxley Green, Rickmansworth and a single piece from Mill End Pit, Rickmansworth (donated by Hugh Beever in 1935); and one handaxe from Gaddesden (donated by Dr G M Ververs in 1931).

Kent: A large collection of material from various contexts at Milton Street Pit, Swanscombe (donated by Sir John Flett); other pieces from Milton Street Pit donated by W.G. Smith in 1933 (found 1890), and R Elliot in 1892 (from the D Elliot collection); and material from Rickson's Pit, Swanscombe (donated by Henry Dewey in 1935), Barnfield Pit, Swanscombe (donated by H Dewey and W M Newton in 1935), and Ingress Vale, Swanscombe (donated by K P Oakley in 1935). A type series from Baker's Hole, Northfleet (donated by the Associated Portland Cement Company per the BM in 1914); and further material from the same site donated by H G Mantle in 1935. A type series from the Ebbsfleet Channel, Northfleet (purchased from J P T Burchell in 1935). Several objects from Herne Bay and the Reculvers (donated by W Whitaker in 1869, and T McKenny-Hughes in 1935). A type series from Bapchild, near Sittingbourne (donated by H G Dines in 1933, and the Burham Cement Company in 1934); and further material from the site donated by H G Dines and G Williams in 1962. A type series from Homersham's Pit, Sturry (donated by H Dewey in 1935); and additional material from Sturry (donated by F H Edwards in 1933). A small series from Pearson's Pit, Dartford Heath (donated by H Dewey in 1935).

London: Implements from various locations around London all found during the late 19th century: Clapham; Clapton; Ilford; Leytonstone; Hanwell; Kensington Gardens; the City of Westminster; Jermyn Street; and Princes Street. A type series from Worthington Smith's 'working floor' at Stoke Newington, Hackney (donated by H G Mantle in 1935).

Norfolk: Various objects found by H.B. Woodward during fieldwork for the Geological Survey of Norfolk Memoir, and donated in 1905 and 1909; a large collection of material relevant to the colith debate, including material from Cromer and West and East Runton (purchased from Reid Moir in 1934); and an additional small quantity of colithic material donated by H Dewey in 1935.

Suffolk: Material from various localities in the county, including one handaxe from Hoxne (donated by Prof Henslow in 1935); one handaxe from Botany Bay Brickyard, Weeting (found by S B J Skertchly in 1878); three objects from Mildenhall (one a handaxe donated by Sir Thomas Barlow in 1942, and the

others flakes found by H B Woodward in 1909); and a series of implements relevant to the eolith debate (purchased from J Reid Moir in 1934). The latter includes material from Boulton's Pit and Bramford Road Pits, Ipswich (some of which is of later prehistoric date); a couple of worn bone fragments from Foxhall Road, Ipswich; and material from Hoxne and the south bank of the River Orwell.

Surrey: A type series from Farnham donated by Henry Bury in 1934.

Wiltshire: A small series from Knowle Farm Pit, Savernake (donated by H G O Kendall in 1904); also some material from Winterbourne Bassett.

No Provenance: Objects donated by A Bell, Prof Henslow and Miss Crosfield.

Upper Palaeolithic

Only the material from North Cray, Kent, donated by A B Vansittart in 1910 is of Upper Palaeolithic age. The material consist of a group of partly refitting Long Blade material (*cf.* Barton 1986). On the basis of comparison with similar material from elsewhere in Britain, the assemblage can be assigned to the very end of the Upper Palaeolithic period, *c.* 10,000 years ago (Barton 1991). The only other possible Upper Palaeolithic object in the GM collection is the end scraper found on the shore at Brean Down in Somerset and thought by Kenneth Oakley to have fallen from the Upper talus breccia. The scraper is not particularly diagnostic and could easily be later prehistoric in date.

Mesolithic

The Mesolithic is similarly not well represented in the collection, with the majority of pieces being picks and axes: i.e. those from Sonning, Berkshire; Salcombe Hill, Devon; Epping, Essex; Bursledon, Hampshire; and Selling, Kent. Prior to the 1930s, the only Mesolithic material in the GM collection other than axes was a small group of material from Blashenwell, Dorset donated by Clement Reid in 1897.

A small quantity of type series from Mesolithic sites were donated in the early 1930s: i.e. Crimdon Dene, Cleveland (ex Drs A Raistrick and J S Westall, per Mr S E Hollingworth); Rishworth Moors, Yorks (ex S and E V Darby); March Hill, Yorks (ex F Buckley); and Soyland Moors, Yorks (ex J H Priestly). Another small Mesolithic collection donated at the same time could not be located at the time of transfer: ie Lyne Hill, Northumberland (ex Drs A Raistrick and J S Westall, per Mr S E Hollingworth). The regions that these sites were located in were outside the known pattern of Lower Palaeolithic findspots, and they were probably acquired for

display of archaeological material in the regional cases where no older material was available. The three collections which were transferred were all accompanied by their plaster exhibition mounts. In addition, it might not be coincidental that the concept of the Mesolithic as a specific archaeological period of the early postglacial period was not widely accepted until the early 1930s.

Two other groups of Mesolithic artefacts were also acquired in 1935: four flint flakes from Kelling Heath were included in the collection donated by Henry Dewey; and the wife and daughter of Dr Edwin L Arnold donated material from Trevoise Head, Cornwall and Bolt Head, Marlborough. Parts of the Trevoise Head donation were withdrawn the following year.

Neolithic and Bronze Age

The Neolithic and Bronze Age periods are also under represented in the archaeological collections of the Geological Museum. As with Mesolithic objects, the majority of the Neolithic and Bronze Age objects are represented in the form of stray finds of axeheads. The collection includes Neolithic polished flint and stone axes from: Borstal, Bucks; Maidenhead, Berkshire; Stifford, Essex; North Burton, Humberside; Greenhithe, Kent; Horton Kirby, Kent; Erith, London; and Dorking, Surrey. A Neolithic polished jadeite axe from Bromley was acquired by the Museum in 1955 when it was brought in for identification and labelled as "not to be returned". The collection also contains three perforated Bronze Age axeheads: one unprovenanced and the others from Wortley, Derbyshire; Exmoor, Somerset. Two perforated 'pebble maceheads' of a type previously thought to be Mesolithic are also represented. The first is the well-known example found in 1869 at Stifford, Essex. The other was found in 1870 at a depth of 3' in gravel under a large Sycamore tree at Southacre Rectory, Norfolk. The GM register records that, "the root of the tree had entered the hole of the hammer and having swelled out by after growth had become nearly as large as the stone".

Other than the axes, there were only three small groups of later prehistoric artefacts which were acquired before the 1930s. One is a small group of Bronze Age artefacts from Caerludden, Cornwall which were presented by J Arthur Phillips, and presumably were discovered during his geological work in the county in the mid-19th century. Another group of nine flint artefact and a bone awl from Wandsworth, London, were donated by the antiquarian collector and dealer G F Lawrence in 1887. The last group consists of a few Neolithic flint artefacts and pot sherds from Turnford, Hertfordshire,

which were registered in 1915.

The 20th-century flintknapping industry at Brandon, Norfolk, was of considerable interest to geologists and it is probably no coincidence that a small quantity of later prehistoric material from nearby Grimes Graves found its way into the GM collections after 1930 (donated by Edwin Arnold in 1935, C N Bromehead in 1948; and Miss Crosfield in 1953). The only other later prehistoric objects in the collection are single artefacts from Cissbury, Sussex (donated by Henry Dewey in 1933), and Sellafeld Tarn, Cumbria (Bronze Age scraper donated by Mr T Eastwood).

Modern

Flint artefacts of recent manufacture are represented in the GM collections by both gunflints and replicas/forgeries of ancient implements. The former category includes a number of classic gunflints from the major manufacturing centre at Brandon, Suffolk (examples made in 1922, and donated by Miss Crosfield in 1953). Even more interesting, however, is a single example from a local 19th century gunflint industry in Devon. In 1914, Mr F G Collins donated a gunflint made of Haldon chert to the museum (there are deposits of greensand in the Haldon Hills to the west of Exeter). The register records the gunflint as being "from some old stock of Messrs Whiffen, Ironmongers, Exeter, about 1830-1840". Evidence for such local industries is very scarce.

The collection includes replicas of ancient implements made by two of the most famous 'forgers' of the Victorian era: George Glover (aka George Green) and Edward Simpson (aka Flint Jack). There is also a single example of a replica "made today" by an unnamed flint knapper at Ling Heath, Norfolk in 1922 (donated by Miss Crosfield in 1953).

BRITAIN

There is only a small amount of archaeological material from Britain outside of England in the collections of the Geological Museum. This circumstance is curious as the geological activities of many of the donors were not restricted to that country alone. The answer perhaps lies in the predominant interest of geologists in the gravel deposits containing Lower and Middle Palaeolithic archaeology noted earlier. These periods are not represented at all in Scotland and Ireland, and not frequently in Wales except in caves. Indeed, all of the archaeological material in the GM collection from parts of Great Britain, other than England, is of later prehistoric date. From Scotland the material consists of: a series of large stone implements from Shetland donated by

Dr James Hunt in 1867; and a large sandstone implement from Birsey, Orkney, which was found by Mr Howe in 1884. From Wales, there are three Later Prehistoric axeheads from Anglesey; an axehead roughout from the factory site of Graig Lwyd donated by S. Hazzledine Warren in 1920; and an implement from the foreshore of West Williamston, Dyfed, donated by Dr Strahan in 1915. The GM retained four stone hammers and a stone wedge from Nant-yr-Arian (Blaendyffon), near Aberystwyth, which had been donated by J W Williams in 1867 due to their association with ancient mining practices. The material from Ireland consists of seven polished stone implements: a chisel from Balintemple, Co. Wicklow, donated by J H Lamprey in 1901; an axe from Letterkenny, Co. Donegal, found in 1864 and donated by Mrs Geoghegan; an axehead from Co. Londonderry; and four axeheads provenanced only to 'Ireland'. The only object from the Channel Islands is a small polished jadeite axe from Fermain Bay, Guernsey, found in 1846 and donated by Henry Harris.

EUROPE

There is very little material from continental Europe in the GM collection, and what there is can be divided into two major groups: Lower Palaeolithic handaxes from France which were relevant to the resolution of the question of the antiquity of humankind in 1859; and impressive examples of Neolithic and Bronze Age flintwork from Denmark and France. The former group consists of five handaxes found in the gravels of the River Somme all of which were pertinent to the validation of Boucher de Perthes' work there by Joseph Prestwich and John Evans. Their acceptance of de Perthes' findings in 1859, together with the results of work at Windmill Hill Cave, Devon, finally provided the proof of an extended antiquity for humankind to the satisfaction of the scientific community. Of these handaxes, one from Moulin Quignon was donated by Boucher de Perthes himself; two from St. Acheul were donated by Prestwich; another from St Acheul was donated by the palaeontologist Hugh Falconer, who had brought the material to the attention of Prestwich and Evans; and lastly, two from Abbeville and Menchecourt are from the collection of Sir Roderick Murchison (donated by his son). The example from Moulin Quignon is a rare example of a true artefact from this site where forgeries were rife.

Nine examples of impressive Danish later prehistoric flint artefacts including daggers and axes, were purchased in 1867 from Mr Wright. They were presumably acquired as examples of excellent workmanship in flint technology. In the same year,

Augustus Franks presented from the Christy Collection a type series of cores and flakes from the later prehistoric flint knapping centre at La Claisière, Grand Pressigny, Indre-et-Loire. This small collection was supplemented in 1913, when M. René Brizard donated a small series of tools from the same area. There is a letter concerning this acquisition.

The other material from continental Europe is all from France: two polished Neolithic axes with no further provenance (donated by Prof Guthrie in 1869); four later prehistoric artefacts from Caesar's Camp, Sacy-le-Grand, Oise (from the collection of Sir R Murchison); and the series of casts of bone and antler work from the Dordogne Cave mentioned previously.

REST OF THE WORLD

The material from the rest of the world in the GM collection, has a very different composition from that provenanced to Europe. The material can be divided into two main categories: firstly, ethnographic objects made in exotic lithic materials which were collected both as examples of the working of these materials and as examples of modern stone tools; and secondly, archaeological objects from these regions which were also frequently of unusual local materials. Very often the dividing line between these two categories is uncertain.

Much of this material is derived from the activity of British geologists in other countries during the latter part of the 19th century. However, the material is not necessarily restricted to former colonies of Great Britain, although several of these are represented. The material from India has been listed in *The Carlyle Collection of Stone Age Artefacts from Central India* (Cook and Martingell 1994), and the material from Southern Africa is discussed in the forthcoming *Catalogue of Stone Age Material from Southern Africa in the British Museum* (Mitchell, In Press). Especially the latter of these two works has shown that the objects from the GM can be of considerable historical interest to research on the Stone Age of these areas. A full listing of this material is presented in Appendix 2.

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Appendix 1: The McKenny Hughes Exhibition

The following objects were donated to the GM as an exhibition on flint artefacts by Professor T McKenny-Hughes with the purpose of displaying both natural forms and worked artefact types, and where the morphology of both overlaps (McKenny-Hughes 1867; 1868). As most of these finds are unpublished, and many have not been included in the major gazetteers, details are included in this appendix for the benefit of researchers. Indeed the only publication which the collection seems to have received are notes on the exhibition published by McKenny-Hughes himself, and a brief mention of some of the objects in Sir John Evans', *Ancient Stone Implements of Great Britain* (1897, 611). The listing below includes only the artefacts in the collection with a topographic provenance. Details of the natural forms, including those thought by McKenny-Hughes to be artefacts, and unprovenanced artefacts can be found in the BM accessions register. The appendix groups the objects by provenance according to modern county boundaries, and major find locations within those counties. A brief description of each piece is given followed by any further details of provenance in parentheses. Many of McKenny-Hughes' provenances are by reference to contemporary O.S. Maps: eg "near 's' in Epping Forest" refers to the place on the map near to where the letter "s" in "Forest" is printed. This is somewhat confusing, but can provide a reasonably accurate find location if a map of the correct age is consulted.

ESSEX

Epping Forest: Fragment of perforated quartzite pebble-hammer (near "s").

HERTFORDSHIRE

Essenden: Flake.

Hatfield: Pick fragment; Bifacial implement (Coopers Green).

Hertford: Flake (Bayford Hall); Flake x2 (north of Bayford Hall); Flake (south of 1st "r" in Infirmary).

St. Albans: Tranchet Axe, burnt (Beech Farm).
No further provenance: Biface (between St Albans and Hatfield); Bifacially worked piece; Bladelet x2; Flake x5.

KENT

Bapchild: Flake (south of); Bladelet.
Borden: Flake.
Charing: Bifacially worked piece.
Chatham: Biface (between railway and "T" of Tweedale); Flake (east of).
Doddington: Bifacial implement (south of); Flake; Pick; Pick (south of).
Eastling: Biface on flake; Blade; Flake.
Faversham: Bladelet (south of); Blade fragment; Flake (south of; west of; Faversham Quay); Leaf-shaped arrowhead (near railway c. 1 mile east of).
Folkstone: Flake (hill north of).
Gillingham: Biface (field near road by "m").
Gravesend: Bifacially worked flake (south of); Flake x4 (south of).
Halling: Flake.
Hempstead: Flake.
Herne Bay: Bladelet (path on cliffs east of).
Highstead Forstal: Pick fragment (on road near "o" of).
Isle of Sheppey: Retouched tool fragment (beach between Hensbrook and River Oak).
Lenham: Bladelet ("Top hill F."); Polished flint axehead fragment (Downs Court).
Luddenham: Bladelet ("I" of).
Luton: Biface fragment (terrace between Chatham and Luton, north of "L" in Luton)
Lynstead: Flake (west of).
Minster Sheppey: Bladelet core (top of cliff); Flake (road east of).
Newington: Biface x2 (railway west of station).
Newnham: Pick fragment (from heap of picked flints).
Otterham Quay: Biface, very rolled (from base of brickearth); Flake (south of).
Rainham: Bladelet fragment (east of); Flake (east of); Flake fragment.
Rochester: Biface fragment x2 (Starkey's Farm; terrace between Chatham and Luton, near Rochester); Bifacially worked piece (terrace between Chatham and Luton, near Rochester).
Rodmersham Green: Bladelet.
Sittingbourne: Biface (200 yards nw of "C" in College Wood); Biface fragment (200 yards south of "g"); Blade x3 (1 near "M" of Morris Court); Bladelet; Bladelet core; Fabricator (350 yards northeast of "e" in); Flake x7 (1 from Conyers Quay; 1 from Golden Wood); Polished flint axehead fragment (between Eastling Church and North Court); Retouched flake x2; Scraper; *Tranchet axe* (north of "n" in Murson).
Temple: Scraper (Strood Brickfield).
Teynham: Biface (gravel pit east of); Core rejuvenation flake; Flake x4 (1 from gravel laid on road north of Teynham Station; 1 north of railway, 1/2 mile east of Teynham Station); Scraper.
Tonge: Flake x3.
Tweedale: Polished flint axehead fragment.
Upnor: Polished flint axehead (cliffs north of).
Upper Rodmersham: Polished flint axehead fragment.
North Kent: Bladelet; Flake x2.
No further provenance: Flake x3 (1 from Murston Brickfield; 1 from Kingsdown Street); Pick (Watling Street, near 44th milestone); Pick fragment (south of Sandhills Farm).

LANCASHIRE

Cantsfield: Perforated stone axe-hammer (turned up by the plough)

LONDON

Belmont, LB Sutton: Pick

SURREY

Leatherhead: Bladelet core; Flake x2.

SUSSEX

Ore: Leaf-shaped arrowhead (¼ mile southwest of "O")

Appendix 2: The Non-European Archaeological Material in the Geological Museum Collection.

AFRICA

Ghana (Gold Coast): Nine stone implements from the alluvium of the gold workings (donated by T B F Samm in 1901).

South Africa: A series of 17 chert artefacts from the Cape of Good Hope (donated by Mr Whitaker in 1867); a stone pestle from the Cape Flats (donated by the South African Museum in 1871); and nine stone implements found in gravel under 4 feet of clay at East London (donated by H W Piers ex G MacKay in 1867). The last collection is accompanied by a letter and map giving details of MacKay's find locations (for details see Mitchell, in press). A handaxe donated by Col. A E W Goldsmidt in 1904 is provenanced to South Africa, but appears to be Egyptian in origin.

Zimbabwe (Rhodesia): A series of 11 stone implements from the Charter District (donated by W F B Kenny in 1906).

MIDDLE EAST

Jordan (Arabia): Stone tools from Petraea (donated by Major MacDonald).

ASIA

Easter Island: a large stone tool (donated by Mr Scoresby-Routledge per Dr Thomas in 1917).

Figi: Two polished stone axes both marked with the initials C A M.
Indonesia: A polished stone adze from Celebes (donated by N Samwell in 1901).

India: Ten chalcedony and jasper cores and flakes from Nagpur (donated by J Fedden in 1867); twelve large pressure-flaked chalcedony cores from the Rohri Hills, Upper Sindh (donated by J G Single in 1890); a quartzite implement from near Vaniembuddy (found by Professor Oldham, and donated to the GM by General Lodwick via T McKenny-Hughes in 1866); two stone axeheads from the District of Bundelcund (donated by H Blandford in 1862); and an implement from Jabalpur with an associated letter (donated by J Evans in 1865, ex Lieutenant Swiney). There is also a small collection of Lower Palaeolithic material donated by R Bruce-Foote, F G S. of the Geological Survey of India in 1862: a laterite implement and a handaxe from Madras District; several quartzite implements from lateritic gravels at Panur, North Arcot; and a quartz ovoid implement from Woodecotta, Madras District.

Asia Minor: Several chalcedony flakes used in an ethnographic threshing machine in Banderma (donated by H Baureman in 1872).

AUSTRALASIA

Australia: a greenstone axe from the Dawson River, Queensland (donated by Capt Walter Serocold in 1866); two stone implements from the "Australian interior" (donated by T Middleton in 1863); and an ethnographic hafted stone implement thought to be from Australia (from the collection of Sir R Murchison in 1872).

New Guinea: An ethnographic example of a stone 'club head' collected by Mr J McGillirray while on H M S. Rattleship and donated in 1936.

New Zealand: two stone implements from Taranaki (donated by B Wells in 1865); and a small jade axehead presumed to be from New Zealand (from the collection of Sir R Murchison in 1872).

THE AMERICAS

Canada: A chalcedony arrowhead from the southeast coast of Vancouver Island (donated by H Bauerman in 1862); 13 stone artefacts from a raised beach on Black Island, Labrador (donated by H Bauerman in 1866); and (presumably) four stone implements provenanced to "Belleville, Co. Hastings, Canada West" (donated by T C Wallbridge).

United States: Ethnographic arrows and stone arrowheads from California (donated by J Forbes); a serpentine bowl found in 1888 during excavations on the Island of Santa Catalina, Los Angeles, California (donated by R J Cope of Los Angeles); a single arrowhead from Colorado (donated by S H Warren in 1897); four chalcedony points found in Newark, Ohio (donated by T C Wallbridge in 1870); a slate point found near Philadelphia, Pennsylvania (donated by R

Day in 1869); quartz arrowheads from Amelia County, Virginia (donated by C Jephson); a stone celt found in Hillsville, Virginia in 1867 (donated by J A Phillips in 1867); a small collection of chalcedony and obsidian stone tools from Walla Walla, Washington (donated by H Bauerman); a small collection of stone tools, ornaments and shell from terrace gravels near to Fort Colville, by the Columbia River (donated by H Bauerman); a stone hammer found in ancient copper workings near Lake Superior (donated by Mrs Blackwell); and several stone labrets (lip ornaments) used by "the Esquimaux" presumed to come from Alaska (donor unknown).

Barbadoes: A fossil shell implement (purchased from W Cutter in 1880).

Colombia: A polished stone chisel from Tolima State (donated by A Fitzgibbon in 1897).

Guyana (British Guiana): An axehead and a spearhead made of a black stone, and found between the Iring and Cortinga Rivers (donated by R Brown in 1872).

Jamaica: A chisel shaped stone implement (donated by R Brown, F G S. in 1870); two stone axes from Westmoreland (donated by Prof Guthrie in 1955); and a polished greenstone axe from the Lacovia Mountains, St. Elizabeth Point (donated by R Brown in 1872).

Nicaragua: One stone implement (donated by E W J Edwards in 1914).

Peru: Three stone implement (donor unknown).

South America, Southwest Coast: An ethnographic stone arrowhead used by Auracarian Indians (donated by Dr C Forbes in 1864).