

Further Notes on the Gravel Terraces of the Bristol Avon, and their Palæoliths

By T. R. FRY

INTRODUCTION

In 1929 a paper was published in the *Proceedings* of this Society describing a number of palæolithic implements which had been found near the Avon at St. Anne's and Shirehampton by the late Mr. R. Hughes and the present writer.* An account was also given of the known deposits of gravel in the Avon valley, together with a brief summary of previous work bearing upon the subject. Further important finds in new localities were afterwards made, and these have been partly dealt with in a recent paper by Mr. A. D. Lacaille,† which has thrown much light upon the problems involved. The present paper should form a useful addition to the work already published.

The death of our member Mr. J. A. Davies in 1930 seriously affected the work in its early stages. It was not, however, completely relinquished, and a large collection of Palæoliths was made by R. Hughes until shortly before his death in 1948. The present writer, too, continued to search as opportunity offered, mainly along that stretch of the river between Bath and Bristol, and discovered two new localities yielding Palæoliths, a description of which is the main object of the present paper.

It is to be regretted that many fine implements collected by R. Hughes and the present writer, and which were formerly displayed at the City Museum, were destroyed by enemy action in 1940. A smaller set which had been placed in the Society's Museum by R. Hughes suffered the same fate. Among the implements lost were all those figured in the 1929 paper except one. Drawings still exist however, of the most important ones, some of which are now published.

DESCRIPTION OF SITES

KELSTON

South of Kelston village, the Lower Lias forms a platform-like feature gently inclining to the north-west. Here on the surface occur river-borne

* DAVIES, J. A., and FRY, T. R., 1929, "Notes on the Gravel Terraces of the Bristol Avon", *Proc. U.B.S.S.*, Vol. 3, No. 3, 162-172.

† LACAILLE, A. D., 1954, "Palæoliths from the Lower Reaches of the Bristol Avon", *Antiq. Jour.*, Vol. 34, 1-27.

pebbles of Greensand chert mixed with a smaller amount of flint and quartzite pebbles. The gravel is most abundant near the line of the 150-ft. contour. To the south-west of the church it appears to consist of decalcified materials only. In the field 650-700 yards north-west of the church unaltered river gravel was exposed during the digging of some post holes in 1930, a little below the 150-ft. contour. As is usual where gravel is found upon the surface in the Avon Valley, artifacts of different periods may be found.

A careful search during 1930 resulted in the finding of about a dozen implements of Lower Palæolithic types. Those chosen for illustration (*see Fig. 17*) all came from the surface of the large fairly level field, lying approximately 450-500 yards west-south-west of the church, a little above 150 ft. above O.D. (N.G.R. ST694666). No. 1 is a disk with broken edge; (2) is a cleaver with narrow trimmed butt; (3) is a triangulate hand-axe with a thick untrimmed butt; (4) is a small flake-implement; (5) is a wedge-shaped chopper. All these were made from Greensand chert, and they have a light ochreous patina; only one (2) shows signs of abrasion.

BRISLINGTON-HANHAM REGION

In this region the Avon traverses for about three miles an area mainly formed of resistant Pennant Sandstone into which it has cut the Conham Gorge. An undulating platform extends above the gorge at a height of 150-200 ft. above O.D., the planation of which appears to be partly due to action by the river before it had begun down-cutting. River gravel mainly composed of Greensand chert with a little flint and quartzite is found upon the platform lying in the soil and subsoil. Gravel of the same kind also extends down the slopes at the western end of the region, where there is a steady decline of altitude after a somewhat abrupt fall to 100 ft. above O.D., near St. Anne's Park.

The gravel is rather patchy in distribution; it lies thickly in some fields and very thinly in others, and sometimes only an occasional pebble is found. It is much more plentiful on the Brislington side of the river than on the Hanham side, where the ground is generally higher. It seems reasonable to regard the gravel-bearing levels of this region as terrace benches that at one time must have borne a considerable overlay of river gravel, now reduced to a mere remnant of its original bulk. Sections have revealed little more information than can be deduced from materials thrown up by ploughing. Deposits rather thicker than usual were exposed in a drainage trench along Jersey Avenue, Broomhill, Brislington, at approximately 180 ft. above O.D., and revealed the following sections:

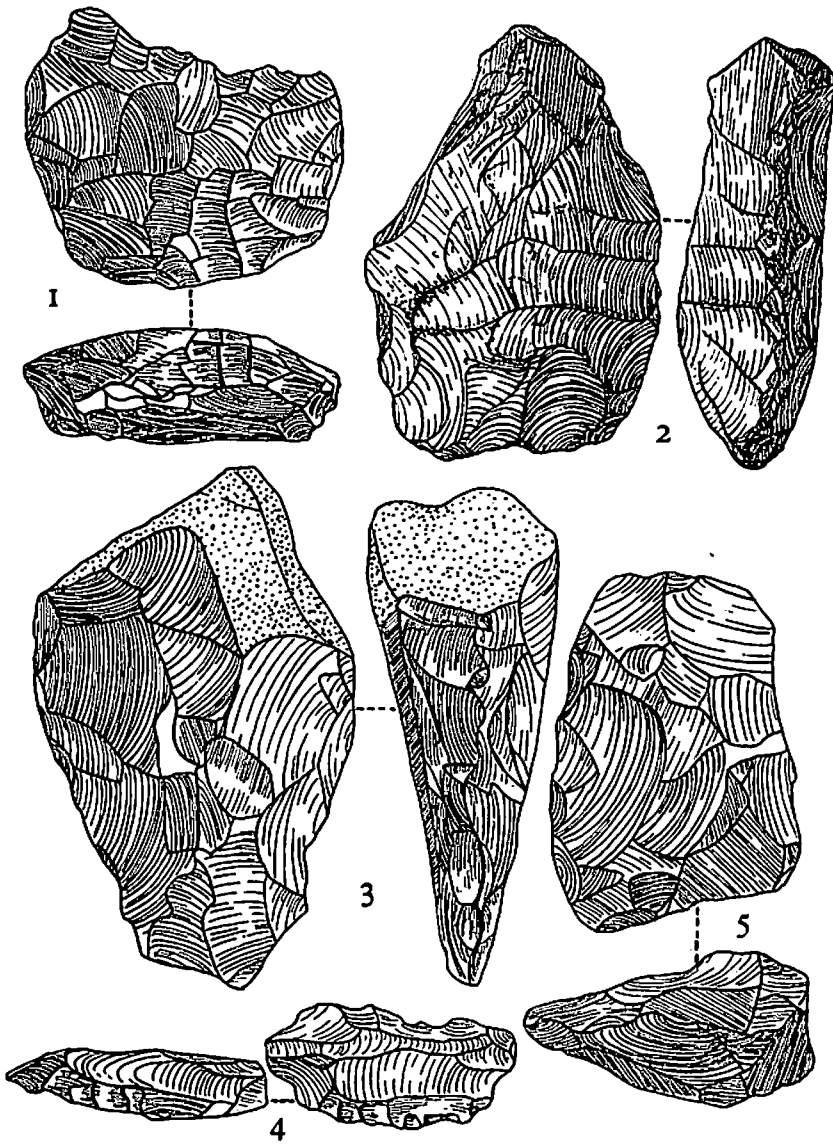


Fig. 17.—Palæoliths from Kelston, Somerset. For explanation see text.
Two-thirds natural size.

SECTION (A)

South-east end of Jersey Avenue :

	Ft.	In.
1. Surface soil containing river-worn pebbles mainly of Greensand chert	1	0
2. Yellowish clay passing down into grey clay : scattered pebbles of Greensand chert and impure flint	5	4
3. Bed-rock : grey clay (Coal Measures)	3	5 seen

SECTION (B)

North-west end of Jersey Avenue :

	Ft.	In.
1. Surface soil with river-worn pebbles	1	0
2. Red sandy loam, highly ferruginous, with scattered pebbles of chert and flint	3	2
3. Bed-rock : flaggy sandstone (Coal Measures)	3	5 seen

Many of the pebbles in Bed 2 of both sections were pitted as though by frost action. Those pebbles in 2, Section (A), were densely coated with a dull grey patina which appeared to be due to long inclusion in the grey clay. Those in 2, Section (B), did not show this feature. Bifacially flaked implements of Lower Palæolithic types were first obtained from this region at St. Anne's Park in 1926 at a somewhat lower level than those about to be described. During 1930, further search of the large ploughed field overlooking the almost vertical edge of the gorge north-east of Brislington House at approximately 150 ft. above OD. (N.G.R. ST635704) revealed further implements. The usual river-borne pebbles of non-calcareous materials—chiefly Greensand chert—are plentiful here especially at the highest point of the field. Bomb craters during 1941 disclosed 1 to 3 ft. of gravel debris mixed with loam, and resting upon bed-rock of Pennant Sandstone. Deep and constant ploughing has brought much material to the surface, and the following implements—which are a typical selection from twenty or so—were found. *Fig. 18* (1) and (2) triangulate hand-axes with thick, angular, partly trimmed butts; (3) square ended hand-axe or cleaver with heavy untrimmed butt; (4) small chopping tool; (5) and (6) flake implements (No. 6 has remains of a prepared striking platform while No. 5 has not). All these implements are made from Greensand chert and they have a dense light ochreous patina which in the case of No. 1 is mottled by darker tints. The surfaces are slightly lustrous but do not show noticeable abrasion.

LAWFORD'S GATE, BRISTOL

A temporary section in the forecourt of a block of flats at Lawford's Gate was examined by the writer during 1939, and the following section of

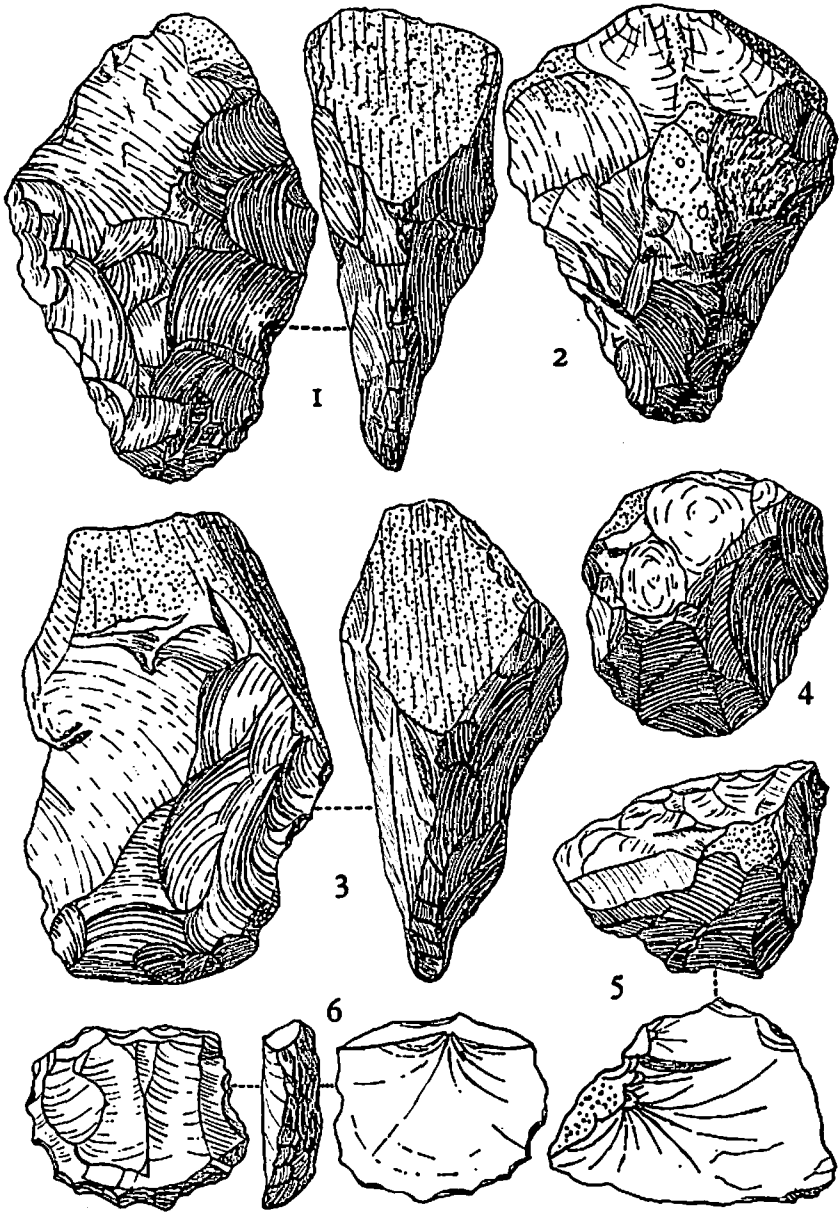


Fig. 18.—Palæoliths from Brislington House Farm, Somerset.
For explanation see text. Two-thirds natural size.

alluvial beds was disclosed. The height at ground level was approximately 45 ft. above O.D.

	Ft.	In.
1. Made ground	2	0
2. Red loam with occasional pebbles of Greensand chert some of which showed thermal fracture	2	3
3. Red sandy loam	2	9
4. Grey quartzose sand	4	6

SHEEPWAY, NEAR PORTBURY

This place is situated on the south side of the estuary of the river Avon between Pill and Portishead. A tract of Trias marl rises out of the surrounding alluvium near Sheepway Farm. A thin covering deposit of sandy loam occurs containing chert, flint and quartzite pebbles, mainly of an angular shape. A search in the fields on the north-east side of the farm (N.G.R. ST494764) during 1931 at heights between 29 and 34 ft. above O.D. yielded about six implements of Lower Palæolithic types. *Fig. 19 (1)* Three views of a platessiforme hand-axe. The cortex has been removed except upon one edge by chipping of a very coarse character; patina, a dense slate grey; unabraded. (2) This implement was submitted to the late Mr. J. Reid Moir in 1931, who said of it, "Very good example of early Chellean rostrate hand-axe". The cortex appears to have been removed by powerful blows: patina, ochreous brown; condition, much abraded. (3) Square edged hand-axe or cleaver showing very coarse chipping; patina, a dense greenish-brown; unabraded. Other finds included a fine evenly flaked triangulate hand-axe of Acheulean type (similar to *Fig. 17, No. 3*), abraded and lustrous with an ochreous patina. This implement was found by the late R. Hughes and is now lost. Apart from it, the rest of the finds showed unusually coarse workmanship.

OBSERVATIONS ON THE GRAVEL DEPOSITS

a. SOLUTION

At all points where the writer has observed unaltered gravel it has been found to consist mainly of small limestone pebbles formed from such rocks as are found in the Avon basin at the present day. Unaltered gravel, however, is seldom found in the surface soil, but only the insoluble part of it. The limestone pebbles have probably been dissolved through long exposure to weathering and contact with acids contained in the soil. The important inference may therefore be drawn that it is possible to estimate the *minimum* thickness of normal gravel that must have lain over a given spot by measuring the volume of the insoluble materials remaining and setting the result against the known contents of unaltered gravel. With this end in view the writer collected at random 200 pebbles from the Stidham

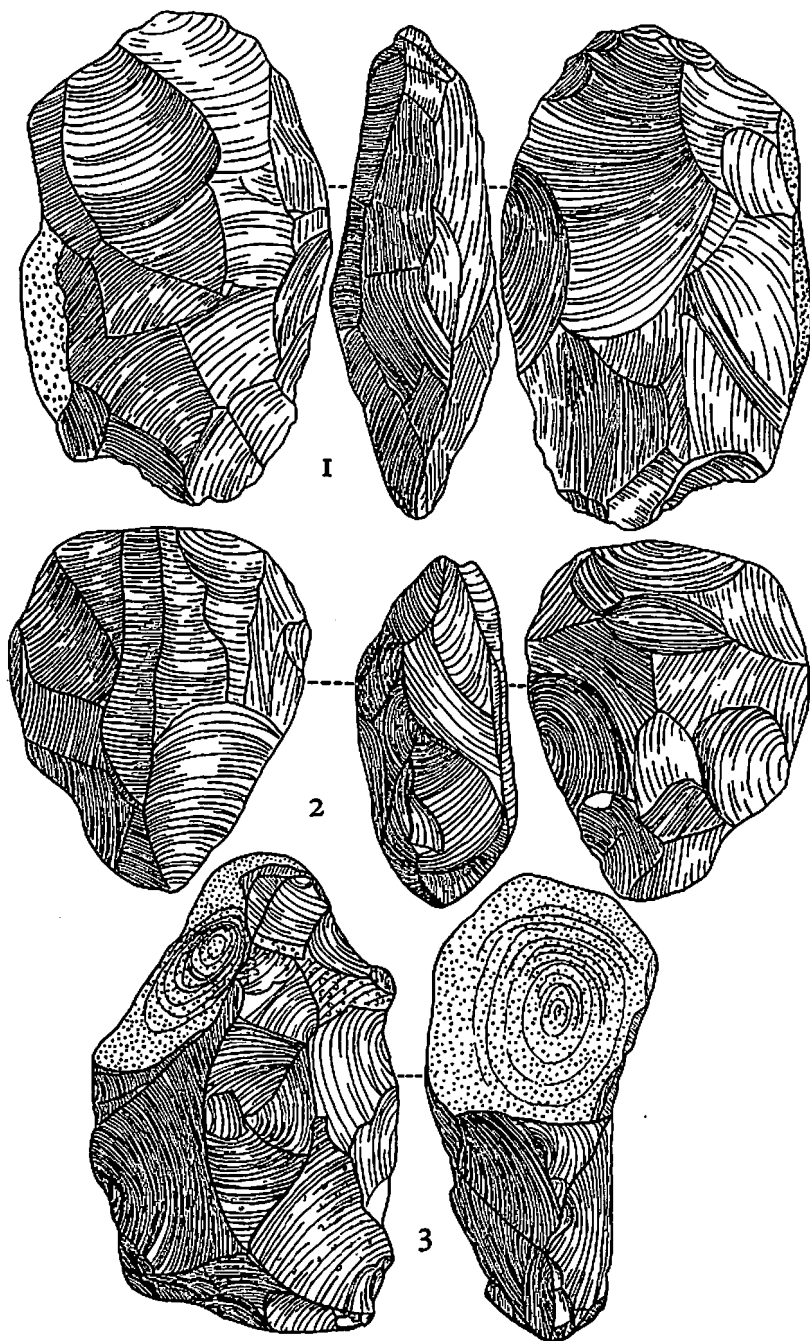


Fig. 19.—Palæoliths from Portbury, Somerset. For explanation see text.
Two-thirds natural size.

Farm gravel pit at Saltford (Davies and Fry, *op. cit.*, p. 169) and found upon examination that 90 per cent consisted of soluble or partly soluble materials.

b. RESIDUAL DEPOSITS

Gravel residues of insoluble materials, usually mixed with soil, etc., are found at many places and altitudes in the Avon valley. They are found capping unaltered gravel, but more often they overlie the bed-rock, sometimes filling up hollows in the surface of the latter. It should be stressed, however, that the fragments included in these residual deposits—although sometimes containing pieces of the underlying rock—are of a fluvial character and are not solifluction-deposits derived directly from neighbouring hillsides. The incorporation of the residues into soil, sandy loam, and clay is a matter of some speculation, doubtless a number of factors are involved. At Shirehampton there appears to have been incorporation into flood loam; the writer observed a deposit of this nature 6 ft. in thickness during the construction of Woodwell Road at approximately 90 ft. above O.D.

The fact that the Avon valley lay in a periglacial region during the cold phases of the Pleistocene Epoch must have influenced the formation of these deposits and it seems probable that frost soil phenomena played a major part. Disturbance may also have been caused by such factors as the growth and uprooting of trees, and the presence of burrowing animals.

c. ORIGIN OF THE CHERT AND FLINT

To obtain confirmation of the origin of the chert and flint pebbles found in the gravels, and from which the largest proportion of the palæoliths have been made, the writer collected a number of fossils found embedded in these materials. The specimens were submitted to the late Mr. J. W. Tutcher for identification and he returned the following report:—"Much of the material is too fragmentary for specific identification but all of it is undoubtedly derived from Cretaceous deposits, mainly Greensand and Lower Chalk. The fossils recognized are as follows: *Trigonia* cf. *dædalea* Parkinson; *Inoceramus* cf. *pictus* J. de C. Sowerby; *I.* cf. *crippsi* Mantell; *I.* cf. *concentricus* Parkinson; *Pecten* (*Syncyclonema*) *orbicularis* J. Sowerby; *Crania* sp.; *Discoidea subuculus* (Leske); *Micraster* aff. *præcursor* Rowe."

d. PALÆOLITHS

Most of the Palæoliths found at Brislington and Kelston may unhesitatingly be placed in the Acheulean series. They can all be matched typologically from the much larger collections obtained at Ham Green and Shirehampton from the 100-ft. terrace, and identified as belonging mainly to the Middle Acheulean culture of the Great Interglacial by A. D. Lacaille.

A few implements may be of older types. The higher level of the Brislington and Kelston finds (150 ft. above O.D.) presents a problem which may be partly accounted for by the greater distances upstream, which are 9 miles and 14 miles respectively from Shirehampton. In this connexion it may be pointed out that the small series found by the writer at St. Anne's Park, Brislington, and described in 1929, were found at points between 60-120 ft. above O.D., and although these were then ascribed to the Mousterian they would now be placed as Acheulean.

The implements from Sheepway (*Fig. 19*) appear to be of Abbevillian type, but it would be unsafe to claim this site as a true Abbevillian one. The low altitude of the occurrence does not correspond with the other sites described in this paper, although the fact that the area was apparently formerly situated in the estuary of the Avon is worthy of note. There remains the possibility of derivation from higher levels.