SECTION TWELVE

Appendix 1: Sweetpatch Valley Bottom

Keith Wilkinson

INTRODUCTION

This section details the results of an investigation into colluvial deposits in the valley of Sweetpatch, Patcham. These investigations have been placed in an appendix as, strictly speaking, Sweetpatch did not form part of the Brighton Bypass project as it lay off the route. Therefore it was funded from different sources (except for the AMS dates which were provided by English Heritage through the kind offices of David Jordan). The reason for examining Sweetpatch was to fill a geographic gap of 4km between Toadeshole Bottom East (to the west), and Eastwick Barn valley to the east (Fig. 1.1), where the Bypass route cut through no dry valleys. Such a 'plug' was vital for the

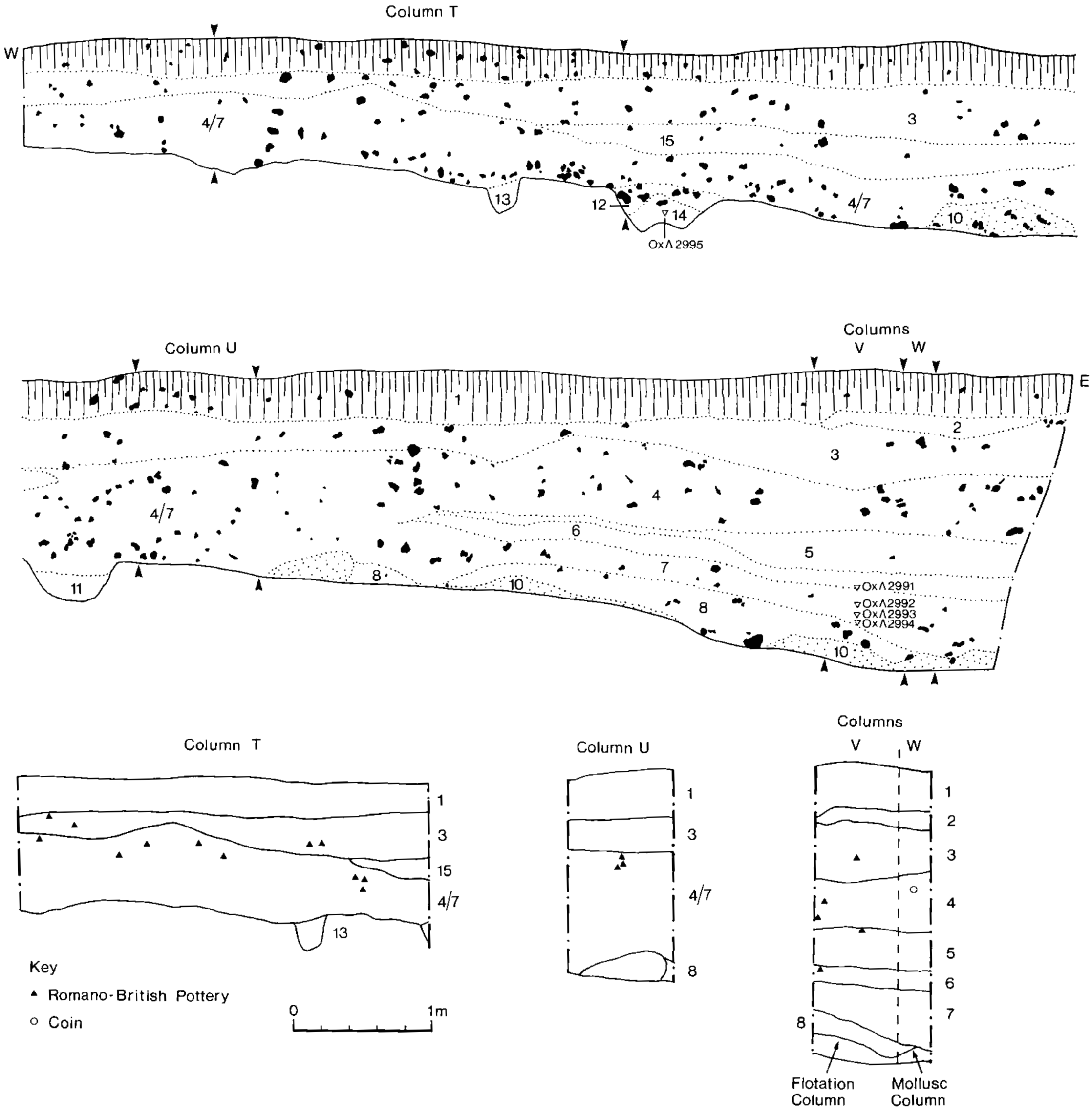

Fig. 12.1 The south-facing section of Sweetpatch showing artefact findspots and sampling locations.

reconstruction of local environments which formed the main focus of the author's Ph.D Thesis (Wilkinson 1993), of which Sweetpatch and all sites discussed in Section 8 formed a large component. Funding for the Sweetpatch project was provided by SERC, the Gordon-Childe fund of the Institute of Archaeology. University College London, and the Central Research Fund of the University of London. Fieldwork took place during two weeks in July and August 1990 and labour was provided by students and staff of the Institute of Archaeology. The methodology adopted during fieldwork was similar to that detailed for the other dry valleys in Section 8. However, a far larger area was opened along the trench edge for the recovery of artefacts, i.e. one column with a surface area of 3m × 1m and two columns each of 0.9m × 0.5m (Fig 12.1). The objective of excavating a larger area was to recover greater numbers of artefacts to provide a better control on dating than that achieved in the other valleys. It was also decided to excavate a column of samples for processing using the flotation technique in order to recover charred plant macro-remains and material for AMS dating (*see* Allen 1984a).

Sweetpatch Bottom is 'dog-legged' in shape and approximately 850m in length. The northernmost 400 metres were under an arable land-use at the time of fieldwork. The southern 450 metres were a recreation ground and cricket pitch, but the latter has been destroyed with the construction of the Bypass. The western slopes of the valley were gentle (<5%), but those to the east are both steeper (>10–15%) and shorter.

The machine-excavated trench was approximately 21m long by 2m wide, and located at TQ 307 097, at 60m OD. This location was not in the valley centre, but slightly to the west so that an idea of previous slope angles could be gauged. The location was also determined largely by the understandable reluctance of the farmer to have a large trench excavated in the middle of his field only one month before harvest!

THE SEDIMENTARY PROFILE

The south-facing section was hand-cleaned and drawn, and is illustrated in Figure 12.1. Also illustrated on this figure are locations of the artefact findspots and mollusc, magnetic and flotation columns. The most immediately apparent fact is that the ground surface morphology has been changed quite dramatically by the deposition of colluvium. Thus what was a slope of 10% west to east before colluviation is now 2%. This sedimentary sequence is complex and illustrates a series of changes in the intensity of erosion, and, possibly source of material.

The modern soil, Unit 1, is remarkably thick and uniform. This unit has large amounts of incorporated straw, probably from stubble ploughed in following a recent harvest. It is interesting that there are no chalk inclusions (which is the case for the colluvial layers below), as bedrock is being eroded through ploughing further upslope. This suggests that there has been little lateral movement of sediment. However, contrary to this theory is the fact that a gate-post – of at most 20 years antiquity – was found buried beneath 0.2m of sediment.

All other units, with the exception of Units 10, 11, 12, 13, 14 and possibly 15, would appear to be of a colluvial origin. All are poorly sorted and deposits stratigraphically earlier than Unit 3 appear to be thicker in the east than the west, suggesting derivation from the western slope (except for 5 and 6, *see* below). This slope, as already noted, could have been significantly steeper at the time of this deposition. Thus slope angles similar to those of the present day only occurred after the period represented by the deposition of layer 4.

All the colluvial layers appear to be remarkably similar, differing little in both lithology of included clasts, and colour. This suggests that cause of erosion and source sediment has remained constant, and that the valley-side depositional environments have not altered a great deal since erosion began. Units 4 and 7 in particular are of similar character and appear to merge at about 4.8m from the eastern end of the trench, forming Unit 4/7, which then continues to the western end (Fig 13.1). Units 5 and 6, which are morphologically different from Units 4 and 7 (having smaller clastic inclusions and being of different colour), appear to interdigitate, suggesting a change in either the cause, or source of colluvium.

Unit 15 is also possibly colluvial, but appears to be relatively well sorted and contains a possible 'pea-grit' zone characteristic of a soil **B** horizon. If correct this would imply a standstill phase, which is further suggested by the marked change in morphology between Units 4, 4/7 and 3. Unit 3 is obviously colluvial and includes a large quantity of flint, perhaps suggesting its source was in material eroded from rills or gullies (Allen 1991). This rill or gully erosion, or subsequent ploughing, could have in turn destroyed much of Unit 15, so that all that is now preserved is a length of about 5m.

Units 11, 12, 13 and 14 are all of similar character. They are fills of hollows in the chalk bedrock and have a fine reddish-coloured matrix with some flint inclusions. The fine particle size is probably due to clay particles being leached from sediment above and collecting at the lowest points of the profile. The reddish hue of the sediment is probably a factor of the concentration of silt and clay-sized particles of certain mineralogy within the hollows, and indeed illuvial accumulations such as these are often of a red colour.

Unit 10 is a coarse solifluction deposit, which as with the other sites discussed in Section 8, is a periglacial phenomenon.

MAGNETIC SUSCEPTIBILITY MEASUREMENT

Two methods of magnetic susceptibility measurement were carried out at Sweetpatch, both of which are detailed in Section 8 and plotted as Figure 12.2. The two methods determine magnetic properties of the sediment under different conditions. The first method (1) determines the magnetic properties of the fine sand and silt fraction of the mollusc samples following air-drying. The second method (2) is a 'field' measurement covering all particle sizes and without drying.

Magnetic susceptibility measurements from units in the subsoil hollows (11 and 13) are on average higher than for colluvial deposits. This is probably a reflection of the finer average particle size (to which the technique is sensitive (Thompson and Oldfield 1986)) and therefore concentration of magnetic minerals in the clays.

The undated Units 8 and 9 produced low magnetic susceptibility readings consistent with those of the thickest

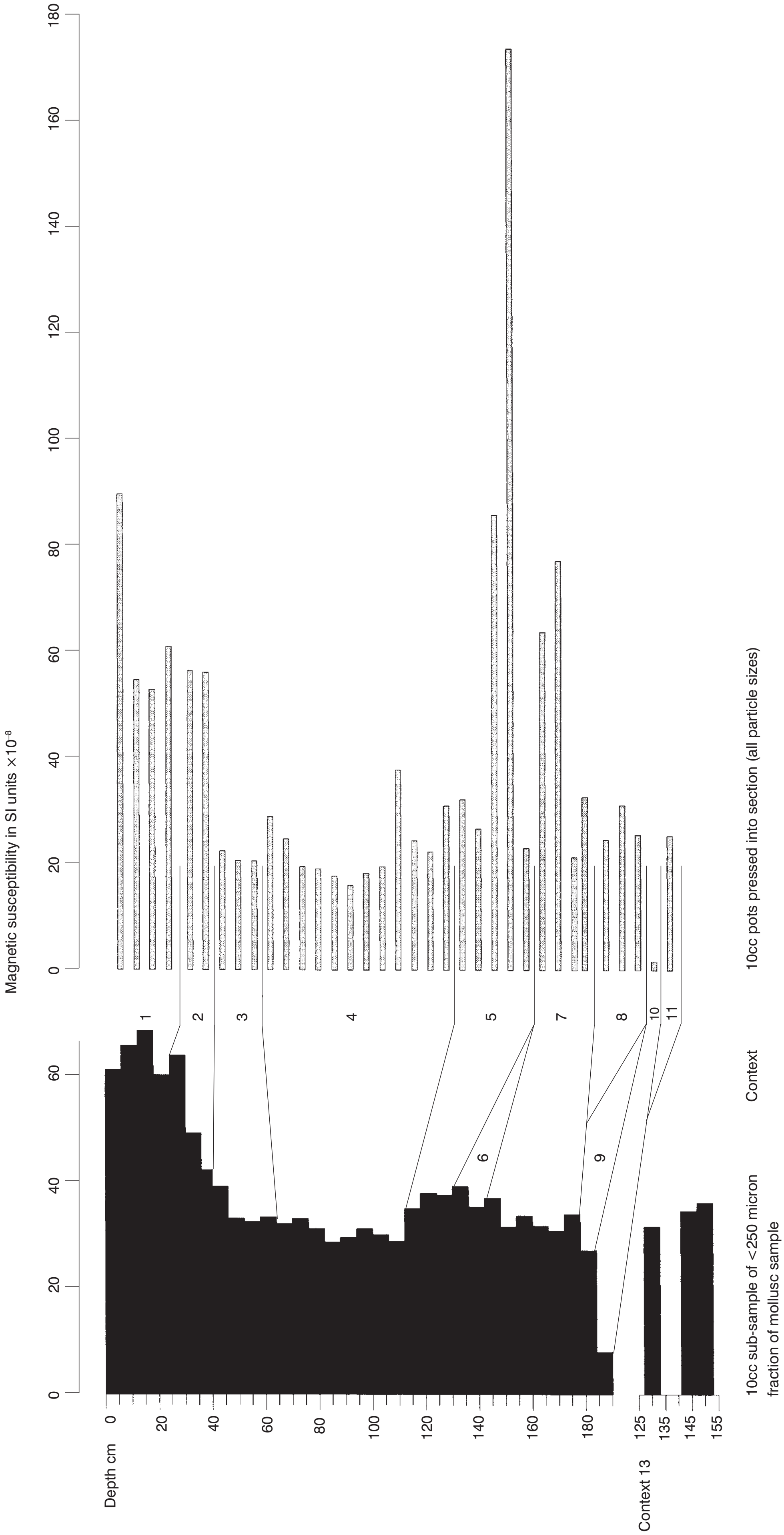

Fig. 12.2 The magnetic profile of Sweetpatch using data obtained from both methods of measurement.

colluvial deposit, Unit 4, suggesting that they formed in the same depositional environment. The slightly higher results from method 1 show that the silt /clay/fine sand component was having the greatest impact on the readings.

Unit 7 has been sampled by both methods, but whereas method 1 produces only moderate values throughout, method 2 shows susceptibilities in excess of 60 SI units $\times 10^{-8}$ (for the top of the layer). This enhanced susceptibility would seem to be caused by *in situ* burning, itself manifested in the presence of charcoal, which was however, not visible during fieldwork. Indeed three of the AMS dates came from the depths at which the major magnetic susceptibility peak occurred. There is little doubt that this burning has also influenced the results obtained by method 1 to a certain degree, as they are higher than the average of the other colluvial deposits. That a large peak was not produced is possibly due to the method of sampling, where a mollusc sample may have spanned the burnt deposit and the subsequent averaged magnetic results therefore not shown in higher readings.

Unit 6 has only been sampled by method 1. The susceptibility values are slightly higher than those from Unit 7, probably caused by an increased input of burnt material. As before the values are not high enough to suggest a non-colluvial method of formation. Unit 5 was sampled by both methods; displaying only moderately high measurements by method 1 and extremely variable results by method 2. The samples obtained by method 2 show low initial susceptibility – consistent with colluvium – followed by two very high values and then two low ones. Throughout this change the results obtained by method 1 are consistent. The extreme peaks from method 2 in the middle of Unit 5 could have been caused by burning. Soil formation, the other major recognised cause of higher magnetic readings (Thompson and Oldfield 1986), rarely produces such high results, while the control sample of 'tetrion' and iron filings used to calibrate the magnetic susceptibility meter produces only slightly higher values. As was the case in Unit 7 it is likely that the burnt layer – which again was not seen visually – must have been spanned by mollusc samples and therefore not observed in the readings of method 2. It is noteworthy that flotation samples confirm that charred plant remains were present at this level.

Units 3 and 4 show a return to low susceptibility in measurements from both methods, with the values from method 1 being slightly higher than those of method 2. However, Unit 2 displays a rise in measurements as recorded in both methods. This is almost certainly caused by earthworms bringing material containing ferrimagnetic particles down from the soil **A** horizon during aestivation. This is further suggested by the way the susceptibilities gradually increase upwards through the unit. The susceptibility measurements produced from the modern soil (Unit 1) are high throughout, probably caused by faunal or microbial processes which at the present are poorly understood (Thompson and Oldfield 1986).

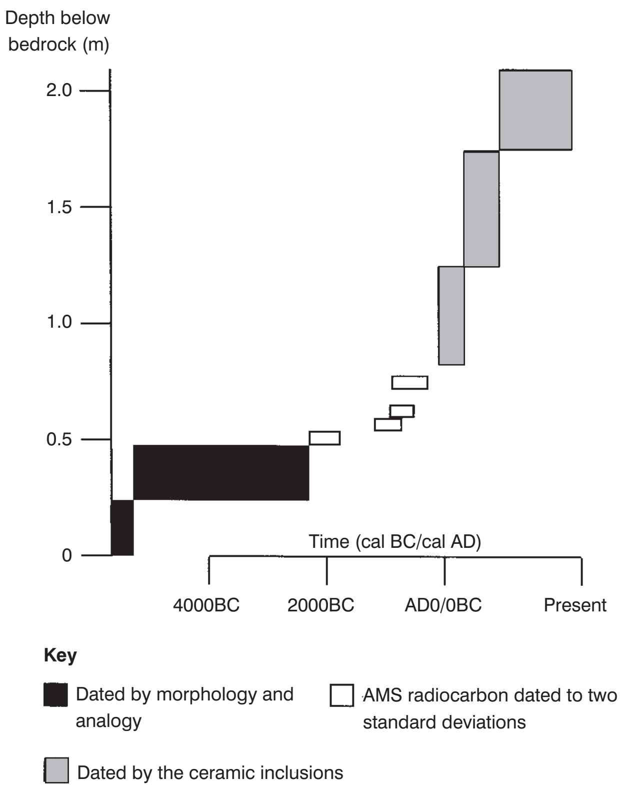

Fig. 12.3 Dating the Sweetpatch sequence: the use of different techniques to date the profile.

Dating the sequence

The sequence has been dated using three techniques; AMS radiocarbon determination, analysis of ceramics, and from the single coin recovered. In addition the basal periglacial deposits can be assumed to date from some time in the later Devensian period, e.g. 25–10,000 BP from comparison with similar sequences elsewhere in the South Downs (Kerney 1963; Ellis 1985). Figure 12.3 has been plotted to show date of deposit against depth in order to demonstrate firstly that dating techniques have been applied to different parts of the profile and secondly how the rate of sedimentation is seen to increase exponentially, particularly from the Romano-British period onwards.

A total of five samples were submitted for dating. These were all of less than ten pieces of charcoal recovered by spot sampling or from similar material in the flotation sample flots. Samples corresponding to laboratory numbers OxA 2991–2994 (*see* below) are from the flotation column and represent successive samples. OxA 2995 was taken from a subsoil hollow in the west of the trench and was a spot sample.

Figure 9.5 demonstrates that there is an apparent increase in age downwards through the column. This suggests that the sediments were accumulating gradually rather than being the result of a single phase of high intensity erosion. However, a significant chronological gap occurs between OxA 2993 and OxA 2994, either because the pieces of charcoal are residual and thus produced an 'old' date, or that the bottom of Unit 7 is considerably older than the top. In this latter scenario either there was a hiatus in deposition or later material has subsequently been removed through erosion. OxA 2994 suggests that deposition of colluvium (Unit 7 is the first large-scale colluvial deposit) began either in the Late Neolithic/Beaker or Early Bronze Age (EBA). However, soon after this initial sedimentary input, deposition ceased (or the sediment produced at this time was eroded away) for at least 600 years. Accumulation resumed (or erosion down valley ceased) in the Late Bronze Age/Early Iron Age, and continued at an approximate rate of 0.06cm a year until the Romano-British period. This does not seem a high rate of erosion until it is considered that the overlying sediments have probably caused compaction in lower deposits. The latest date, i.e. 520–120 cal BC (OxA-2291; 2270±80 BP), lies within the Iron Age, but problems in the radiocarbon calibration curve mean that it cannot be determined exactly when. Accumulation did not cease after the Iron Age, but its character changed so that there was little wood charcoal incorporated thereafter. This may indicate that there was little wood around the site to burn, or possibly that crop husbandry/field treatment methods had changed. These AMS dates, all of which – apart from OxA 2991 – are from Unit 7, illustrate the danger of assuming that a context determined in the field by visual characteristics has internal contemporaneity, or accumulated continuously over a short period of time, i.e. Unit 7 has been shown to have accumulated over a minimum of 900 years (Table 9.1).

OxA-2995 is from charcoal in a subsoil hollow and has exactly the same AMS determination as OxA-2994 (3560±80 BP; 2140–1690 cal BC). The most likely cause of such a subsoil hollow is thought to be tree fall (Evans 1971), and it would seem at least possible that OxA-2995 (3560±80 BP; 2140–1690 cal BC) approximately dates this event. Whether this implies a Late Neolithic/EBA date for forest clearance is unclear, but the exact correlation with OxA 2994 suggests that it not only dates the beginning of colluviation, but possibly the start of large-scale agriculture in the area.

Ceramic dating by comparison with fabrics of a known date, e.g. those from Bishopstone (Bell 1977), has been used to date the later deposits. The ceramics recovered from Sweetpatch are probably more diverse than those from any other dry valley investigated in Section 8. Most sherds were recovered from the topmost units and in particular Units 1, 3, 4 and 4/7. Unfortunately, no sherds were found in the levels that have been AMS dated, further suggesting a change in manuring techniques in the Iron Age.

The single sherd found in Unit 6 is of a Late Iron Age (LIA) or Romano-British date (Fabric 7: Sussex Ouse Valley Ware), which correlates well with OxA-2991 (2270±80 BP; 520–120 cal BC); taken from a position 4cm below. It would seem more likely, based on this evidence, that the sherd is LIA rather than Romano-British. Indeed Hamilton (this volume) suggests that the exact dating of Sussex Ouse Valley/East Sussex Ware should be based on the context in which it is found rather than solely on fabric morphology, as production of these wares continued after the Roman conquest. Only one sherd was found in Unit 5, which as suggested above, is similar to that found in Unit 6. This dates from the Romano-British period (Fabric 12) and therefore suggests that Unit 5 was deposited following the Roman conquest.

Stratigraphically the next unit containing pottery is 4/7 (although this unit does not overlie either Units 5 or 6). However, as Unit 4/7 has been shown to date from the same period as Unit 4 the results should be taken together. Unit 4 contained more pottery than any other, although this was of several cultural periods. The earliest pottery is logically from near the base of the unit, and consists of three sherds from the LIA/Romano-British period. Two of these are of Fabric 12, but with coarse inclusions suggesting an early date (Hamilton, pers. comm.), while the other is of Fabric 7. It is most likely that this part of Unit 4 began accumulating in the early Roman period despite the fact that a single Iron Age coin was found during processing of the mollusc samples, from a depth of 82–88cm below the ground surface. This was well-preserved (*see* Plate12.1), showing no significant signs of wear compared with the pottery found in the colluvial deposits, perhaps suggesting that it had actually been lost in the valley bottom rather than eroding from the slopes. Following cleaning it was identified as a silver issue of Epaticcus, minted *c*. AD 35–43 (*see* Rudling, below). It should be noted however that this type of coin has been found in Roman levels at Chichester, attesting to its continued use as currency following the Roman conquest (Drewett *et al*. 1988: 174). The five pot sherds recovered from higher in Unit 4 are all Romano-British types, except for one of a Late Bronze Age/ Early Iron Age type (Fabric 4), which is likely to be residual. The four Romano-British sherds are of two fabric types; 12 (but with no coarse components, suggesting a Roman date rather than Iron Age) and 8. Unit 4/7 seems to have started accumulating either at the end of the Iron Age or beginning of the Roman period (or possibly before – i.e. there are *c*.50cm of colluvial deposits below the lowest datable sherd, which is Romano-British). Therefore it is likely that Units 4 and 4/7 both began to accumulate in the Romano-British period and would seem to have continued doing so until Saxon times as, after a 30 cm gap, a sherd of this period (dating from before AD900 (Luke Barber pers. comm.) was found. The fact that Romano-British sherds were found stratigraphically above the Saxon material suggests that reworking of material has taken place. This phenomenon continues in Unit 3 which contains sherds of the Romano-British period (Fabrics 8, 11 and 12), a single sherd of the LIA/Romano-British period (Fabric 12, with coarse inclusions) above pottery of the Middle Ages (twelfth–fourteenth centuries) (Luke Barber, pers. comm.). Therefore Unit 3 would seem to date from the Medieval period. Unit 1 (soil **A** horizon) contains fabrics of the Post-Medieval period only, implying that the present soil has developed during the last few centuries.

The large number of Romano-British sherds that have demonstrably been found as residual material in the sequence are of some significance and suggest the presence of a large accumulation ‘bank’ of cultural material for this period. This must have been caused by one of two processes: either that large quantities of pottery were spread on the fields in manure of the Romano-British period, or the presence close by of an activity area. However, there can be no doubt that about a third of the sediment that eroded into the valley bottom dates from the Romano-British period, which lasted at most 400 years, while a similar quantity of material below is later prehistoric, a period spanning well over a thousand years, although, of course, erosion down the valley axis could have removed further material from this earlier period. Nevertheless the evidence suggests that either there was agricultural intensification in this particular valley during the Roman period, or a fundamental change in crop husbandry methods.

Mollusc analysis

Unfortunately, despite the well-dated sequence and an interesting magnetic record, few mollusc shells were found preserved in samples from Sweetpatch. There is only a single sample with over 100 individuals, and only three with over 50. The reason for this poor preservation is uncertain as large quantities of chalk granules were found in all the samples (except those from Unit 1 – *see* above), suggesting the sediments must have been calcareous. It is possible that the constant arable activity which seems to have occurred at Sweetpatch could have led to the erosion of mollusc shells that were originally deposited, but there are many other sites where arable activity has also been suggested and where mollusc shell preservation has been high (*see* Section 8). It is noteworthy that stratigraphy with the lowest shell preservation correlates with burning and thus high magnetic susceptibility, suggesting that this process may have affected the biostratigraphic record. However, there are many other situations at other sites where burnt layers contain well-preserved mollusc shell (e.g. clearance horizons below Neolithic/Bronze Age monuments in Wessex: Evans 1972). Any suggestion that low shell numbers are an artefact of a high sedimentation rate must be dismissed, as the AMS dates suggest that – at least initially – the deposits were accumulating gradually (Fig. 9.5).

Table 12.1 (Appendix 4) details the mollusc shells found from samples at Sweetpatch. No attempt has been made to present the data graphically because low shell counts would render this meaningless. Discussion is relevant only on shells from a depth of 70cm upwards, i.e. from the top of Unit 4, because of the poor record below this. The mollusc assemblage below 70cm seems to indicate open country conditions: the only species present are *Trichia hispida*, *Trichia striolata*, *Vallonia costata*, *Vallonia excentrica* and *Helicella itala*. The nature of the 'open environment' cannot be determined from the molluscs, but plant macro remains recovered from the flotation column (*see* below) suggest local arable activity. The mollusc shells recovered from the subsoil hollow are evidence of open country preference suggesting that sediment eroded into them some time after the original tree-throw occurred.

At 70cm a more diverse assemblage begins to appear, which is nevertheless dominated by open country types and *T. hispida*. The almost total absence of 'shade-lovers' (Evans 1971) would tend to argue for an agricultural land-use, although this may also be a result of poor shell preservation. The possible Roman introduction *Candidula intersecta* (Evans 1972; Bell 1990) appears from 88cm upwards, but not in significant numbers until 52cm. Therefore as the sediments in the profile have obviously undergone faunal mixing (i.e. the stratigraphy is not distinct – perhaps an argument for arable agriculture), the only information that can be drawn from these data is that Unit 3 dates to the Roman period or later, which is anyway already known from the ceramic evidence.

The modern soil, Unit 1, has a similar molluscan assemblage to that found below, but the frequency of the introduced Helicidae, *C. intersecta*, rapidly increases, while *Candidula gigaxii* and *Cochlicella acuta* both appear. The largest component of the assemblage is by this point composed of these Roman or later introductions. The presence of *C. acuta* in particular, a species normally characteristic of coastal sand dunes (Kerney and Cameron 1979), indicates that the modern site is both open and dry, conditions which do not seem to have occurred before. This is most likely to be the result of the agricultural regime currently in use and the southern aspect of the site, which combine to restrict plant growth outside the cereal production season and increase aeolian erosion. It is less likely to be an effect of climatic change and global warming, although this may be a contributing factor.

The results of mollusc analysis from Sweetpatch are disappointing. Nevertheless the assemblage is an unusual one in being restricted and containing virtually no species that are considered as 'shade-loving'. This suggests an intensive arable regime for most of the history of sedimentation, although even in these conditions one might expect to find a few individuals of such catholic genera as *Cochlicopa* or *Vitrina*, yet there are virtually none. More surprising still is the almost complete absence of *Pomatias elegans*, the Clausiliidae and the Limacidae, all of which are normally present even when preservation is poor, due to the very durable nature of their shells. All should have been present at Sweetpatch prior to clearance for agriculture, and their absence can only be attributed to chemical breakdown, or removal of material down the valley axis at some time in the past.

Plant remains (species identifications by Alan Clapham)

Charred plant remains were recovered through flotation processing of dedicated samples (Table 12.2 (Appendix 4)). Most charred remains were from Units 5 and 6, while in Unit 7 (144 cm +) all that was found were small fragments of charred wood, some of which were submitted for AMS dating (*see* above). However, the presence of uncharred remains in almost all the samples illustrates that contamination has taken place. This could have occurred while actually carrying out the flotation, or could have been a result of transportation of younger material by worms through the profile (Keepax 1977). The species composition provides no help as all the species found uncharred are weeds, and are ubiquitous. However, their presence, if a result of worm action, does sound a warning note for interpretation of other classes of remains.

The charred remains are all either of arable weed species (*Polygonum aviculare*, *Chenopodium album*, *Rumex* spp., *Galium aparine*), or cereal remains (*Triticum* spp.). Unfortunately, the small numbers in which they were found does not allow for a detailed interpretation of the contemporary agricultural system. It is not even certain what their source is, although two obvious possibilities exist:

(a) they were deposited *in situ* through the burning of stubble following the harvest;
(b) they represent domestic refuse spread on the fields as manure.

The main argument in favour of the stubble burning explanation is the magnetic susceptibility peaks at these depths. In favour of deposition through manuring is the actual composition of the remains, which are mainly of cereal glume bases and weed seeds, all of which are removed during crop processing (e.g. during sieving), rather than harvesting. However, the small sample size could have biased the results in favour of 'processing debris', as it is possible that other plant macro remains have either not survived or have not been recovered by the techniques employed.

In practice it matters little what the source of the charred material was, as its very presence (and composition) indicates that cereals were being grown in the area around Sweetpatch during the period represented by Units 5 and 6. The fact that large quantities of charred wood and no seeds were found in Unit 7 may be significant. While this does not suggest forest clearance, it may indicate the burning, and possibly removal of scrub. Unfortunately, poor preservation of mollusc shell at this level does not allow confirmation (or rejection) of this idea, and it may also be possible that the wood charcoal is again a component of domestic debris spread on the fields as fertiliser.

Iron Age coin

David Rudling

Atrebates: Epaticcus, AD 35–43.
Silver Unit. Weight: 1.29g. Diameter: 11mm. Die axis: 270°.
Plate 13.1.

Obverse

Bust right, wearing lion skin; EPATI in front of face; pellet border.

Reverse

Eagle facing, with spread wings and holding snake in claws; pellet border.

Condition

Very good, with few signs of wear to the raised surfaces.

References

Van Arsdell (1989: 180) No. 580-1; Mack (1975: 94) No. 263.

Context

Depth: 82-88cm: Unit 4

Many such coins were recovered from Wanborough in Surrey (Cheesman 1994: 50).
Sussex findspots include: Chichester; Gay Street (south-east of Beedings); Poynings and Selsey (Allen 1960; Haselgrove 1978, 1990).:

Plate 12.1 Sweetpatch Valley Bottom: Iron Age silver coin of Epaticcus.

Conclusions

Although the methods of investigation were arguably more thorough than for any of the sites studied and detailed in Section 8, the results are perhaps less impressive because of the virtual absence of molluscan data. However, it has been possible to date the sequence by a number of techniques which allowed a chronology of erosion to be constructed. Unfortunately, the lowest units, i.e. 9, 8 and the bottom of 7, contained no suitable dating material, and so (as for the other valley bottom sites) it is not known when colluvium began to accumulate. It is certain that this was prior to 2140–1690 cal BC (OxA-2294; 3560±80 BP), to which the top of Unit 7 has been dated. An identical AMS determination obtained from Unit 14 (2140–1690 cal BC; OxA-2995; 3560±80 BP), a fill from a subsoil hollow, is somewhat puzzling as it seems to imply that the colluvium below Unit 7 was very localised and had not filled the subsoil hollow, or that the hollow had formed after the deposition of Units 8 and 9. Neither of these hypotheses are satisfactory, and it would appear more likely that a previous fill of the hollow had been eroded or that the dated charcoal is intrusive. If the former is in fact the case it implies that erosion of the colluvium itself may have occurred after the deposition of Unit 8, and therefore that the sequence is not continuous.

Unit 7 is the first large-scale, datable colluvial layer, and according to the AMS dates would appear to have accumulated intermittently from the Late Neolithic/EBA to the LIA. The conditions under which this accumulation occurred are more difficult to reconstruct. What mollusc evidence there is points to an open environment, although whether this was arable or grassland (or both at various times) is less certain. However, high magnetic susceptibility readings and the large quantities of charcoal found would seem to argue for the former. The sedimentation rate appears to have been low suggesting that whatever agricultural activities were taking place, they were not intensive.

At some point following the deposition of Unit 7, a change seems to have occurred in either farming practice or land-use. This change – which has been dated to 520–120 cal BC (OxA-2291; 2270±80 BP) – was manifested in a higher sedimentation rate, a peak in magnetic susceptibility and the deposition of charred cereal remains/arable weeds as well as wood. The most obvious explanation for these occurrences is an intensification in the farming system – which by this point must have been arable – possibly including the introduction of winter cropping of cereals. Fowler (1983) has suggested that winter cropping was introduced into Britain in the Iron Age, which would be in accordance with OxA-2991 (520–120 cal BC; 2270+80 BP). The reasons for this intensification in the Iron Age (as indicated by the AMS dates) are unknown. However, no pottery of this period has been found in the colluvium, which is somewhat surprising if an intensive arable system was operating, although it is possible that the reasons for this could be cultural, i.e. the inhabitants of the local settlements were not including ceramics in their manure.

The high sedimentation rate which began in the Iron Age continued into the subsequent Romano-British period, although by then magnetic susceptibility measurements are lower, and no charred material is found. However, large quantities of pottery were incorporated in the sediment, so much in fact that it is possible that settlement existed in the immediate locality. Land-use seems to have been very similar to that in the Iron Age and appears to have been just as intensive, if not more so.

Since the Roman period the landscape appears to have remained open, and the sedimentation rate high. In the Anglo-Saxon period erosive processes seem to have intensified further and only returned to a lower level following the Medieval period, although dating these upper horizons is problematic on the basis of the few ceramic fragments found. Recent arable activity has caused changes to the molluscan fauna leading to colonisation of species associated with sand dunes and other warm, dry climates. This attests that modern mechanised agriculture produces very different landscapes to its less intensive and animal-powered predecessor.