

Ancient Monuments Laboratory
Report 54/87

AUDLEY END, ESSEX; AN ASSESSMENT OF
SOIL SAMPLES FROM GARDEN FEATURES.

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Summary

Soil samples from beds of a nineteenth century formal garden, sealed by a later gravel path, were examined in outline to see whether any identifiable plant material was present. It was hoped that this might be of some use in the restoration and re-planting of the garden. It was concluded that the deposits are not adequately sealed and that most of the plant debris in the samples is of recent origin.

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Introduction

Seventeen soil samples from beds of the 19th century formal garden at Audley End were received for examination. The excavator requested that these should be examined to see whether they contained any identifiable plant material representing remains of plants grown in the garden. It seemed quite possible that such material might be present, for the survival of viable seeds (of some weed species, at least) in aerobic soils for periods of up to sixty years is well-attested (Thurston 1960, 73) and presumably seeds would remain in a recognisable state for a still longer period than the duration of viability. However, there did appear to be a problem in that the gravel path overlying these beds 'seals' them only in an archaeological sense: it is improbable that such a path would act as a complete barrier to root and worm penetration, which could easily have introduced modern plant material into the deposits. Bearing this problem in mind, only six samples were examined and in outline only, to assess their potential.

The samples

The six examined were from features 1001 (Sample 343; 0.5kg), 1004 (Sample 346; 0.5kg), 1120 (Sample 347; 0.5kg), 1124 (Samples 474 and 476; both 2.0kg) and 1127 (Sample 481; 3.0kg). The samples consisted of moist brown to yellowish-brown sandy clay loam, slightly to moderately stoney with angular to rounded flint pebbles, and small fragments of chalk, oolitic limestone, slag, mortar/plaster, brick, coal, charcoal and flower-pots. In samples from 1124 and 1127 fibrous and woody roots were abundant.

Methods

The samples were disaggregated manually in hot water and their organic fractions were separated by washover, using a 0.5mm. collecting mesh. The mineral fraction was wet-sieved in the 0.5mm. mesh. Both fractions were then dried and scanned under a binocular microscope at low power.

Results

The samples contain a range of biological debris including insect remains, mollusc shells, small mammal bones and plant debris. As would be expected open-country and synanthropic land molluscs are common. The samples 474,

476 and 481 from features 1124 and 1127 include abundant woody roots with fragmentary leafy shoots of an indeterminate conifer (not identified due to lack of reference material): these are very fresh in appearance and are probably of quite recent date. Fragments of mosses and deciduous leaves from these samples also seem to be recent intrusions. Other seeds identified include Chenopodium album (fat hen), Trifolium sp. (clover) and Sambucus nigra (elder). A curious, and unexplained, feature is the presence of charophyte oospores with 'lime shells' in each sample: charophytes (stoneworts) are characteristic of clear, shallow, calcareous freshwater habitats.

Conclusions

All the plant material from these samples (except perhaps the charophyte remains) seems to be quite recent, and has probably been introduced by root or worm action. The gravel path does not adequately seal the deposits. Further botanical work is thus unlikely to be profitable unless well-sealed anaerobic deposits similar to those studied by the writer at Hill Hall can be located.

Thurston, J.M. (1960) Dormancy in weed seeds, in Harper, J.L. (ed) The Biology of Weeds. Oxford.