

Ivy and saplings should be removed from memorials and monuments.

Crumbling stones should be left standing unless they prove to be positively dangerous. Not only do they testify most eloquently to the inevitable natural decay of most stone but, by their breakdown, they can provide the habitat or mineral release which will help to sustain some of the plants and animals characteristic of the particular soil condition or pH.

Restrict cleaning to the absolute minimum and only use a soft brush and plain water. Before you start, it is advisable to link up with your local lichenologist and genealogist so that you can agree a course of action.

Parishes should be encouraged to use local stone, if at all possible, for new memorials.

A FINAL WORD

Field work in churchyards or cemeteries can be a new experience for the orthodox geologist accustomed to wide-open spaces or quiet coasts where one rarely meets another person. By contrast, many people from a local community find time or cause to slip into the churchyard or cemetery and they will nearly always have a curiosity as to what you are doing. This can lead to a fruitful contact and provide yet another challenge to the commitment of how best to conserve our natural heritage in stone.

Seek out your local Geological Society; the local museum or County or Urban Wildlife Trust may be able to help. If in doubt, the Geologists' Association now acts as a 'clearing house' for information, obtainable from its headquarters at Burlington House, Piccadilly, London W1V 9AG. Tel: 071-434-9298 (with an answerphone out of normal office hours).

USEFUL BOOKS

"Letts Pocket Guide to Rocks and Minerals", 1991.
Letts, London. £3.50.

"Minerals and Rocks in Colour", J. F. Kirkaldy, 1980.
Blandford Press. £5.95.

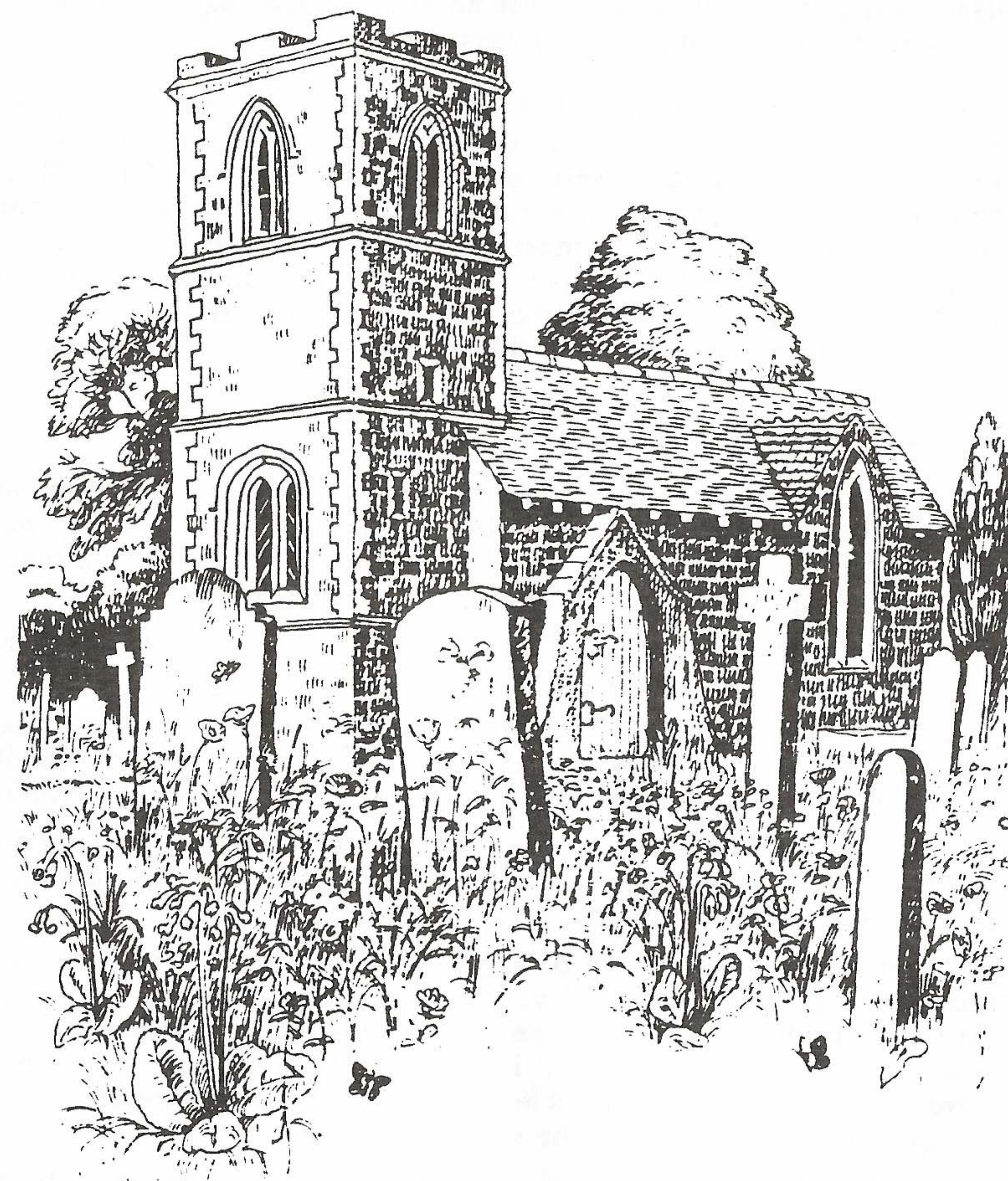
"St. Mary's Tombstone Trail", Eric Robinson, 1990.
The Friends of Hornsey Church Tower.
From: Tim Denby-Wood, 33 Lynton Road, Crouch End,
London N8 8SR. £1 (inc. p&p).

"Earth Science Conservation" Series of leaflets and booklets. (Free).
Published by English Nature, Northminster House, Peterborough PE1 1UA.

This leaflet is published as part of the Living Churchyard Project, obtainable from:
Church & Conservation Project, Arthur Rank Centre,
National Agricultural Centre, Stoneleigh Park,
Warwickshire CV8 2LZ. Tel: 0203 696969 Ext.339.

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Geology in the Churchyard



The Geologists' Association
Burlington House,
Piccadilly, London W1V 9AG

Geology is all around us. Since earliest times, the better-quality natural stones of a district have lent colour and texture to the landscape and have become an important part of our natural heritage. Nowhere is this seen better than in a churchyard where the older stones point to the underlying geology of the district. Gravestones and memorials remain unchanged except by the hand of weathering and, more than likely, the original quarries have long since disappeared.

Only a little local research is required to learn more about the traditional materials used by monumental masons through the centuries. From the 17th century to the early 19th century gravestones invariably were taken from local quarries. By the 20th century, ease of transport and changes in public taste often led to stone being imported from greater distances and, indeed, today increasingly from overseas sources. Not all stones which are good for building are equally suitable for gravestones or memorials. Flaggy, well-consolidated sandstones or limestones will be the natural choice if available but in slate or granite country these types will more likely be the first choice.

SURVEYS AND RECORDING

Geologists have long been accustomed to using churchyards for field excursions. Now that geology has found a place in the Schools National Curriculum, many more people will be encouraged to discover the geological treasures of the churchyards. A simple recording scheme might include the following:—

1. Check against a geological map (1" or 1:50,000 scale) to gain the first clues to local geology and local rock.
2. Identify the type of rock (i.e. sandstone, limestone, granite, marble). Local stone suppliers or masons or quarry managers may be able to add the specific names (e.g. Portland Stone, Swithland Slate, Elland Flags, Peterhead Granite).
3. Record the character, date of placement and condition of each stone and frequency of each stone type. Plot on a map or plan obtained from the Parochial Church Council or vicar to allow the most complete record possible.
4. Assess the degree of weathering of the stone in relation to the date on it. What has influenced this weathering? Has this been influenced by where the stone stands in relation to buildings, walls or trees, or by its aspect in relation to prevailing winds and rain? If the churchyard is in a frost hollow stones may be subject to excessive frosting attacks at ground levels. What relation has weathering and decay to the age and preservation of the stone?
5. Study the relationship between rock types and lichen and moss growth - how many kinds of lichens and mosses can you identify? How is their distribution affected by the aspect or type of gravestone?
6. Geology is an all-weather pastime, improved by the changing light of day. On a wet day, when stones are washed by rain, you can often see fossils or minerals which at other times are lost to view!
7. Try writing a 'tombstone trail'. This can provide a textbook of geology and a local history of quarrying and stone-carving.
8. Cemeteries also can provide a wealth of stones, particularly the old Victorian ones, where you may find a much greater range of imported rock types, such as the intensely dark red granite from Scandinavia, the inky black "granite" from India and the white Italian marble.

TYPES OF STONE

GRANITE: This displays an internal structure in which the rock-forming minerals can be seen to be interlocking in a tight mosaic as an igneous type of rock with a molten origin. With just a little practice, types of granite might be more precisely identified as originating from Scotland, Wales or Cornwall, by crystal shapes or colour differences in feldspar or quartz. Shining mica flakes show up well on rough riven surfaces.

SANDSTONE: This can be recognised by examining the rock under a hand lens when the individual sand grains will become evident. If a flake of stone has weathered from the slab, just crumble it in your hand to regain the original sand! Individual grains are bonded together by a mineral cement which may be either lime or silica. Iron oxides usually are present giving a warm brown or orange colour to the rock as a whole. Sandstones seldom contain fossil shells but may be marked by burrows of animals which lived within the sand before the stone hardened. You can see why sandstones are called sedimentary rocks.

LIMESTONES: These also are sedimentary rocks, built up from the accumulation of shells, usually broken into unrecognisable fragments, and a further percentage contributed by the activities of lime precipitate organisms such as algae or corals. Limestones also can be recognised from their rough "ragstone", grainy "oolite", or massive "splintery" stone, excellent for lithographic work.

SLATE: This is one of the easiest rocks to identify and represents a typical metamorphic rock (i.e. a mud rock which has been changed from its original character by pressure). This results in the platy clay minerals aligning themselves, leaving cleavages which allow the rock to be split into thin plates or slabs without difficulty. Slate surfaces allow for very fine lettering and these are the kind of inscriptions which survive best of all in a churchyard.

TRUE MARBLE: This is a limestone in which the lime has been altered by heat and the minerals re-formed (i.e. it is another metamorphic rock). The best known example is the white Carrara Marble found in almost all burial grounds and particularly popular in Victorian times for the ease with which it could be carved into three-dimensional sculptured monuments. The pure white colour never mellows or blends into the natural tones of an English churchyard and this is one of the reasons it is often banned nowadays. But - beware the terminology! Your local mason may quite happily lump "marbles" and "granites" together as they both take and retain a polish in commercial terms.

GRAVESTONE CONSERVATION

The era of clearing churchyards of their gravestones seems to have passed and this no longer poses a threat. However, if gravestones have to be moved to enable re-use of an older part of the churchyard for burials, stones should not be stacked in a pile or against a wall.

We have moved into the age of more powerful mechanical trimmers and lawnmowers and greater care needs to be taken to prevent physical damage to stones.

The use of herbicides around the base of gravestones needs to be discouraged since, not only will they leave an unsightly, albeit temporary, brown circle of dead vegetation, but also could inadvertently attack the actual substance of the monument itself.