

FARNHAM GEOLOGICAL SOCIETY

NEWSLETTER

OCTOBER 1979 (15th)

TWO TRIPS in MAY 1979 by Mr and Mrs Tarbox and Mr L Neubert

Wenlock edge. Leaving Farnham at 6 a.m. we had a good journey to Ludlow, where we visited the Castle, and the Museum in order to see the specimens to be found in the district. It had snowed while we were inside so we continued towards Wenlock. Stopping on top of the Edge we started to collect fossils: crinoids (fragments only), brachiopods, corals (Favosites and Heliolites) and gastropods. Another snowstorm forced us back to the car, to make hot soup outside in the snow. In half an hour the snow stopped and we could see how local the storm was: one hill was white one side and green the other. Having collected what we wanted, we carried on to Much Wenlock where we were staying.

The next day we went towards Ironbridge and were lucky enough to find a quarry open; we wore our safety helmets to make a good impression, and we were given permission to look round. In the quarry you could see the structures: at the base Bedded Limestone, above this Ballstone (a beef), and at the top Crinoidal Limestone. We collected good specimens of coral, crinoids, gastropods and brachiopods.

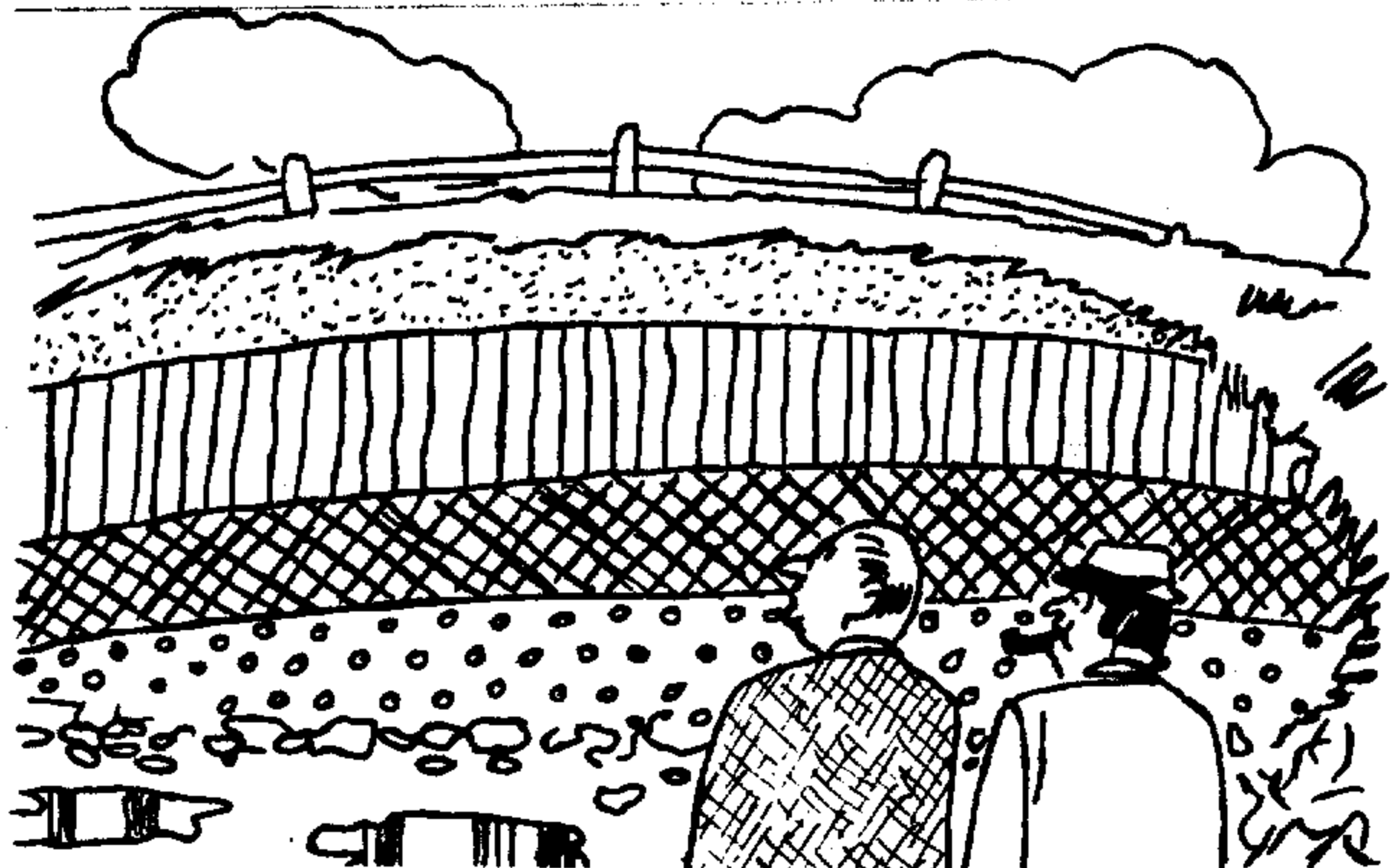
On our way back home we went on the Mortimer Forest Geological Trail near Ludlow. It was a shame we did not have time to finish the trail, but we did see good bryozoa, the famous Ludlow Bone Bed, and what we hoped to find in the Limestone but found in the Elton Beds instead - Trilobites.

Malham. Another 6 a.m. start: good time made to Coventry but there the gear stick failed and this took a good two hours to get fixed, by which time rain had set in. On to Castleton to see the Blue John mine, and we had hoped to go on to Mam Tor the shivering mountain but the weather was too bad. We arrived in Settle that night very tired and not very happy.

The next day the sun shone, our mood changed and we arrived at Malham in good spirits, and walked up to Malham Cove. The limestone rock is taller than Niagara Falls and very impressive; water comes, not over the top, but from the bottom through underground caverns. At the top the ground is covered with grikes and dykes - like paving slabs and caused by weathering and erosion of the limestone. From Malham we went to Gordale Scar: here the limestone has been eroded away by a stream in an underground cavern whose roof subsequently collapsed. Not many fossils at either place, only crinoids and brachiopods and those very scarce. On the way home we stopped near Clitheroe and collected crinoids from a bed in the Bowland Shales.

This trip was not expected to yield many fossils; we went to see the scenery. We enjoyed both trips and hope to make others in 1980.

'Either it's a very remarkable case of Nature imitating Art, or that mad geologist from the Tech has been here with a paint-pot'




NOTES ON THE TOWN WALKABOUT led by Ron Roberts on 24 June 1979

Despite uncertain weather, 20 members met Ron in the Cattle Market carpark. He stressed that although it is possible to identify rock types as one goes round a town, it is impossible to give a 'certificate of origin' without contacting the architects or builders; however, in our tour Ron did some inspired and informed guessing!

Much local stone appears: it is high in 'place value' especially where it predates the railway, whose arrival caused 'foreign stones' to become more extensively used. In the wall in the alley between the Redgrave Theatre carpark and Smyth's, you can see nearly all the local stones : -

- Flints - from the Tertiary: they are clearly water-worked and sub-rounded, probably from a shoreline and of Late Pliocene/Early Pleistocene date. Flints in Farnham are mostly used as cobbles, not knapped (split to show their grey surface);
- Upper greensand - very fine grained with many mica flakes, it weathers rather badly and is often quoined with bricks in a wall to strengthen it. The beds used for building are the Malmstones which are quite resistant;
- 'Carstone' - from the Folkestone Beds: iron-cemented sandstone, very hard wearing. Used not only in walls but for many of Farnham's cobbled alleys.

Into East Street turn right past the cinema, cross the next road and look at the low grey wall. This is of Purbeck limestone capped with concrete. The Purbeck is thinly bedded and interbedded with clays; it is referred to as 'slat' in the Purbeck area. It is packed with lamellibranch shells of the Cyrena type: look for 'way up' shells in the stable convex position .

North side of East Street. In shop fronts, as well as the highly-polished igneous rocks, two types of 'marble' are often used:-

- True geological marble: metamorphosed limestone;
- Marble in the decorative and stoneworkers sense: polished limestones.

If you find fossils in it, it is not true marble!

Bristol & West Building Society. True marble: brecciated fragments which have been recemented. The calcite veining shows crosscutting in very short and disjointed sections; it is probably part of a fault zone resulting from earth movements, and if you look carefully you can work out that this has happened more than once. This marble is of Alpine type, probably from N.W. Italy.

Robert of Mayfair. True marble: brecciated, but less so than Bristol & West. It shows two main series of (conjugate?) coarse veining as a result of shearing stress. One series precedes the other; can you work out which is the earlier from the displacement?

When metamorphism occurs the CaCO_3 and the other minerals tend to separate. Pure saccharoidal marble (CaCO_3) is white; the greyish veins are probably the other minerals. This type of marble is probably one of the Carrara marbles of N.W. Italy.

Bejam freezer centre. Terrazzo flooring: made from marble offcuts with a man-made greenish matrix. The marbles are from the quarries in northern Italy; the non-veined pieces are opicalcites with greenish serpentinite streaks.

Trustee Savings Bank. Look for fossils! Gastropods and bivalves can be found. This is a polished limestone not a true marble, and is probably from the Ardennes in Belgium: it is comparable with 'Bleu Belge' from the area near Dinant, in the number of tension gashes it contains. These are calcite-filled cracks resulting from stress produced by earth movement.

Liverpool Building Society. Granite (an igneous intrusion!), grey, fairly coarse, probably from S.W. England. Plagioclase-feldspar phenocrysts in evidence. The dark rock, also to be seen, is impossible to identify without taking a thin section; diorites and gabbros from Sweden, South Africa and Brazil are all used and look like this one!

Woolmead House entrance (now we know what our income tax is spent on). These are a fine example of serpentinites which are worked mainly in northern Italy and are the results of peridotites being caught up in the subduction zone as the African and European plates collided: the peridotite takes up water and metamorphoses. The rock is fairly highly brecciated with veins of calcite; greyish steatite is also evident, as are reaction boundaries around the main green pieces. In the area round Turin, many ultrabasic rocks and ophiolites were caught up in the subduction zone and produced much rock of this type; the rock is again difficult to identify but is probably 'verde alpi' - Green of the Alps. The original stone of this type used in Rome was 'verde antique' which came from the island of Euboea north of Athens.

Sainsbury's. The pillars along the frontage are fine-grained marble and schist, sawn into bricks with the outside face left rough. The Italians have a highly-developed stone industry and this is one of the many uses for small-scale non-polished stone. At the base of the pillars can be seen a diorite of fairly coarse grain: it is probably from South Sweden.

SupaSports. The delightful beige fronting stone is 'Napoleon' marble from the Boulonnais; this area is the opposite end from us of the Wealden anticline, where Carboniferous rocks are exposed. The rock is a shallow-water limestone of reef type, and stromatolite debris can be picked out.

The Borough: Cards and Gifts shop. Two pink granites are worked in this country: at Ross of Mull and Peterhead. Xenoliths of dark rock are visible. Ross of Mull granite can be distinguished by 'feel' as the micas weather out and leave a slightly rough surface.

Halfords. Here is a much redder granite: it is of Scandinavian origin but is worked and polished in Scotland and sold under the trade name Balmoral. The frontage also has examples of larvikite, a syenite containing no quartz: it comes from near the mouth of Oslo fjord and was intruded in Permian times. Larvikite is characterised by schillerization which gives its sheen. There are two types: this is the greenish one which the stone trade calls 'Emerald pearl granite'; the other is blueish and is called 'Blue pearl granite'. Very resistant to pollution, it has been polished mechanically only in the last hundred years.

The Bush Hotel; Arthur Cooper's. Portland stone: first brought to London by ship and popularized by Inigo Jones and Wren. At the top left of Cooper's door, unfilled burrows can be seen: these are Thalassinoides, a Y-shaped burrow system. Cross-bedding is also visible. Certain blocks show texture getting on towards 'roach' because of preferential weathering-out of aragonite. Closely-cemented ooliths are clearly visible with a hand lens.

Quality Seconds. Lake District green riven 'slate' is in fact fine-grained volcanic ash or tuff from the Borrowdale Series. It is riven parallel to the bedding, which gives it its satiny lustre.

W.H.Smith. Bioclastic limestone, very fossiliferous, containing corals and brachiopods. It resembles Hopton Wood Carboniferous Limestone, but is probably a much younger rock from Trieste or Istria in Yugoslavia.

Dorothy Perkins. Very fossiliferous bioclastic limestone: sedimentary structures are visible, showing distinct junctions between coarse and fine sediments.

Arcade pillars. Bath stone: larger ooliths than in Portland stone; layers of shell fragments, graded material and current-bedding are all clearly defined. Further examples of thalassinoides.

Nationwide Building Society. At floor level, a fine (but filthy) example of a garnet-kyanite schist; one of Barrow's regional metamorphic zones. The long aligned crystals are kyanite and the 'spots' are the garnets. The stone trade calls it 'Otta slate'.

Castle Street, east side. Carstone cobbles where Martin's caravan stands. The other local stone in Farnham is Sarsen. Sarsens are very pure quartz sandstone, produced by cementing of local Tertiary beds (Bagshot, Barton and Reading) in the subtropical climate of the time with alternating hot and wet seasons to mobilize the silica in solution. Fine examples are seen at Avebury and Stonehenge; it cannot be sawn, only shaped with hammer and chisel. Much of the Castle lower walls are made of it. The 'setts' at the entrance to Lloyds Bank back door are sarsen; another large block is on the north corner of the almshouses just before the 'Nelson', and the holes in it are made by roots of trees!

The setts of the Castle Sale Rooms entrance are interesting in that they show the use of stones from quite a long way away. With the coming of the railway it became customary to transport setts from inland places like Markfield in Charnwood Forest, from which the greenish-pinkish syenitic setts come, as well as from Aberdeen, Lundy and the Channel Islands.

Castle Street, west side. 'Flags' of York stone: from the Coal Measures and Millstone Grit, the micaceous layers in the sandstone enabling them to be split; the stone weathers unevenly to afford a non-slip surface. (The City of London will only use York stone paving - Dick Whittington was right!) Outside Robert Dyas can be seen bevelling across small-scale current-bedding which produces characteristic parallel lines.

The setts across the bottom of Castle Street are a fine mixture including granites, aplite veins, gneissose textures from the Channel Islands, granite/xenolith junctions and various 'dark' rocks of uncertain origin. (Please take extra care here, we want to encourage geology not kill geologists!)

Job Centre. Peterhead granite on the left as you face the door. The fine xenolith you will remember from Ron's lecture has been removed; will the member who took it for the Reference Collection please remember that space at Adult Education House is limited! but small xenoliths are still visible. The lower part of the pilasters is blue larvikite.

Take the lane through to the church opposite the Post Office: sarsen material and malmstone are used in the wall - note the differential weathering.

St Andrew's Parish Church. Start in the south-west corner: it is mostly of malmstone with quoins and dressing of Bath stone, but in the south wall of the chancel can be seen some lamellibranch- and gastropod-rich slabs of Purbeck Marble which bear close inspection. The Bath stone quoins show more matrix between the ooliths than do the Borough Arcade pillars, but there is a bonus of some small stromatolites about 5ft above the ground on one of the buttresses.

On the south side of the tower is a tablet whose inscription is all weathered off. It is a brownish knobbly stone: the knobs are bivalve shells of *Neomiodon medius* (*Cyrena media*).

Inside the church, the pillars are chalk: to identify it, look for the flints! The floor is York stone. There are slabs of 'Paludina' limestone from the Weald; the nearest place where these were worked is just north of Petworth, and they are referred to as Petworth Marble. There is an alabaster effigy, and in the S.E. corner a true marble tablet of Carrara 'bardelio' or dove marble, so called because of its greyish colour.

South Street. The Methodist church is built of Bargate stone from Godalming; its mixed grains are clearly seen with the hand lens, and some chert grains and derived fragments are large enough to be seen with the naked eye.

Many thanks to Ron Roberts for a happy two-hour tour which formed the basis for these notes. You don't need a hammer, just a damp finger and a hand lens and mind how you go!

Diana Smith

THE SOCIETY DINNER

Held at the Bush Hotel on Friday 23 February 1979.

Following several drinks at the bar, as befits good geologists, we moved to the lounge for sherry and chat before dinner. A good buffet was set out in the dining-room, accompanied by baked potatoes (not Mendip!). We had eaten and drunk well, when Rab Colvine came in with the dessert (train trouble again) carrying a bag of rocks whose weight we had to guess. One of Dave Taylor's excellent competitions was distributed: 30 mixed geological pairs to be disentangled. Martin Dearsley, Marjorie Outlaw and Ian Carolan each got 29 out of 30 (there were 5 bogus words to confuse the issue). We awarded the book-token prize to Ian, who, with his wife Ellen, was making a farewell appearance before leaving the area to become Research and Restoration Officer with the National Coal Board in Nottingham. He will be sorely missed, along with his 4lb lump hammer and strong left arm!

Certain members - Ida Hammer for instance - treated the competition with a degree of levity: here are some of the more bizarre 'disentangled pairs'. The first words in each case are correct, but goodness knows what has happened to the second!

- | | | | |
|--------------|-------------|------------|---------------------------|
| Pitch | - putt | Thrust | - executive |
| Clarain | - dullain | Clarain | - call |
| Horst | - karst | Quartz | - halvz |
| Albite | - alchew | Horst | - Wessel |
| Flysch | - fowl | Clints | - Eastwoods |
| Pelite | - beanite | Diorite | - Epsom salts |
| Felsic | - felbetter | Barchan | - bitean |
| Gangue | - mob | Goniatites | - jockstrap, |
| Appalachians | - Indians | | and to cure the hangover: |
| Fold | - gently | | |
| Heave | - ho | Phenocryst | - phenobarb. |

Incidentally, can you put the right words in to make the pairs?

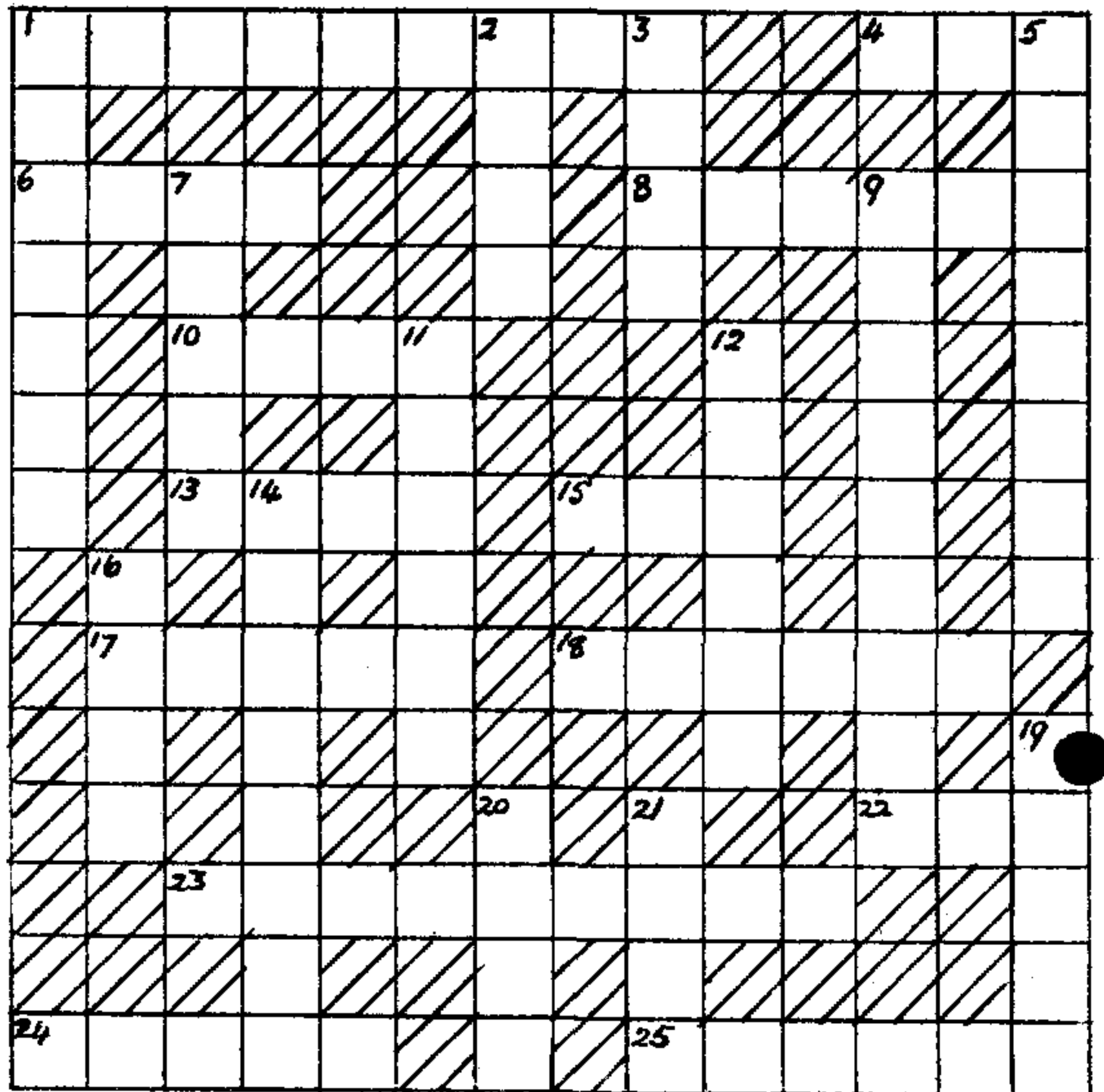
We look forward to seeing you for a glass of *Lamellibranchia* (?Italian wine) at the next dinner, in 1980.

Diana Smith

QUICK CROSSWORD by Colin Brash

ACROSS

1. Ge element.
4. Mined in Cornwall.
6. Soft with black streak.
8. Resembles Nickel.
10. ----field.
13. Inert gas.
15. Mineral aggregate.
17. Part of Chertsey.
18. Found everywhere until you look.
22. Enters during Quaternary.
23. Sulphate of lime.
24. Volcanic -----.
25. Marsh.



Last year's solution:



DOWN

1. Ga-Ga.
2. Any old ----.
3. Pearly with metallic lustre.
5. 78% of atmospheric gas.
7. Jason and the -----?
9. Comes from Bauxite.
11. Variety of Peridotite.
12. Foliated metamorphic rock.
14. Bright green stones.
16. Sour.
19. Young fold in South America.
20. For ---- turn to Lot's wife.
21. Another moat.