Additional Newsletter—

Medway Fossil and Mineral Society—19th November 2020

A tooth from the Glauconite Marl (Temporary excavation 1984) in the cutting leading from the Culand Pit, Blue Bell Hill. General opinion seems to favour reptilian, but precise identification is not easy at the present time. (see further notes within this letter)

I am obliged to add the following, to all those members of the Medway Fossil and Mineral Society, who receive this communication by direct email or by post, under the provision of the General Data Protection Regulation (2018)

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The Editor/Compiler of this letter is Nick Baker

Well, we do seem to have a light at the end of the tunnel, and a train is not scheduled. So, we may well have a vaccine soon. Lets hope the logistics don't get derailed. I mean, this stage is the big challenge and all those little hiccups were proving grounds, one hopes. It does seem that some of us managed to form little geological bubbles. Some aspects of the science and terrain are more open to participation. And I have to say that I have few reports but what I have heard suggest a few folks being far from inactive. None the less, the year has been—something else.

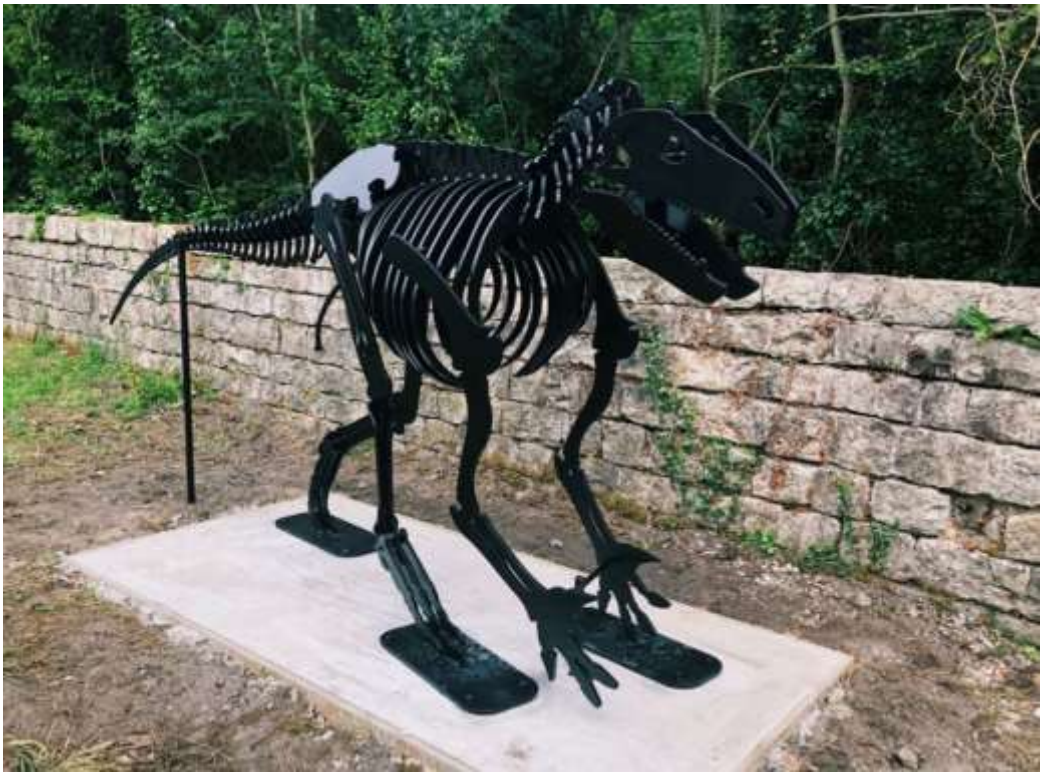
Because we have not been able to travel so much, I have tried to keep the interest in this letter local—but not so easy if you are into igneous and metamorphic rocks. It's all sediments and fossils down here—and so here's what I have.

So, without much further ado—here is Gary.

Dinosaur Statues 1 : Iguanodon

by Gary Woodall

Driving back from Mote Park the other day I noticed a skeletal model of a dinosaur at the side of the A20 at Bearstead. When I got home I looked it up and found out it was an Iguanodon to commemorate the find in Maidstone in 1834. Though, as the website comments stated, the original fossil was discovered at Queens Road so why the commemoration was put here is anyone's guess!



Iguanodon on A20

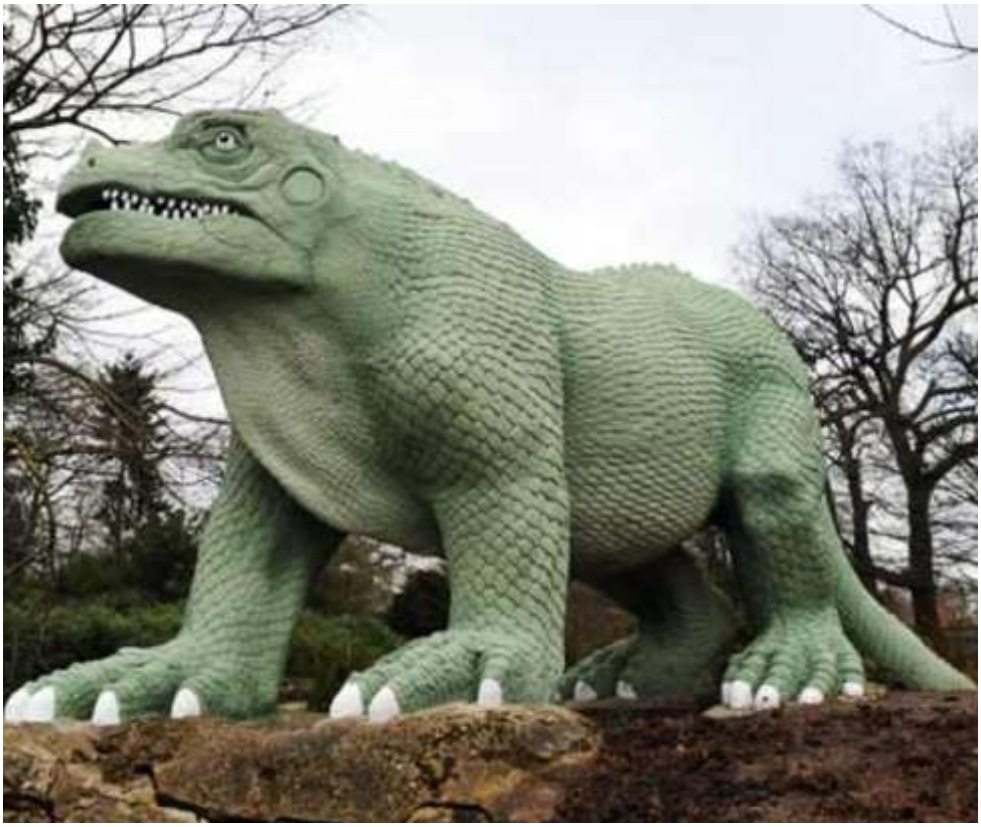
Anyway this got me to thinking that I have seen several dinosaur statues in various places and quite a few have been Iguanodon. So I decided to write another of my linked articles, this time on dinosaur statues.

The first one I can remember, and appropriately, the first one ever put up, is of course at Crystal Palace. Erected in 1852 to accompany the move of the Crystal Palace to the park.

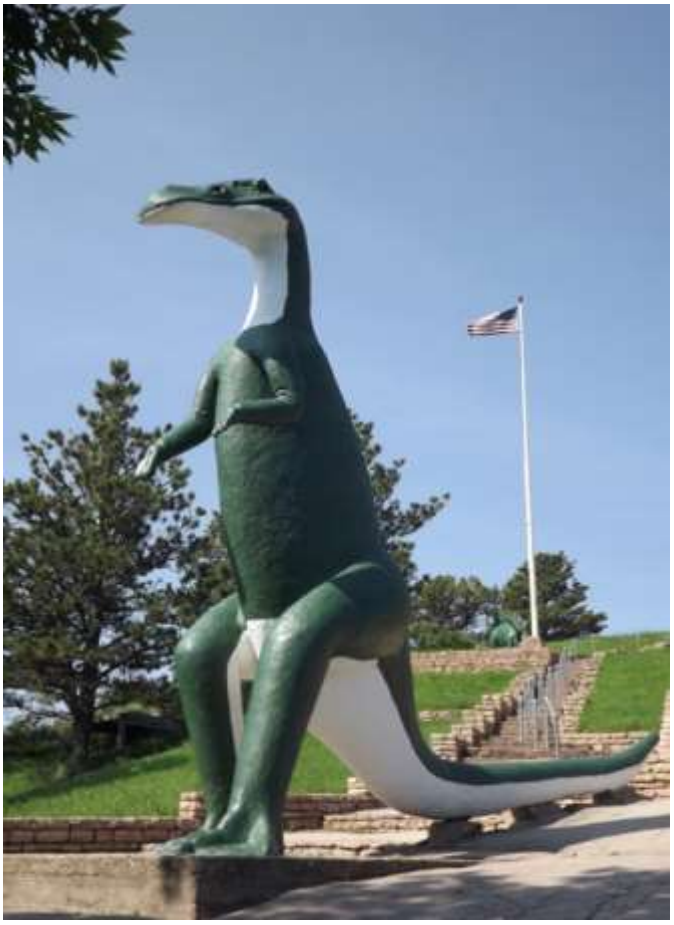
An interesting point to note is that the reconstruction shows it as a big lumbering lizard, walking on four legs with a horn on it's nose. Indeed as you will see Iguanodon has gone through several reconstructions over the last 150 years.

America is noted for it's roadside attractions and statues and on the Skyline Drive at Rapid City, in 1934 around a dozen life-size dinosaur models were erected including a Trachodon. (very similar to Iguanodon). These are of very dubious accuracy but are quite fun to see.

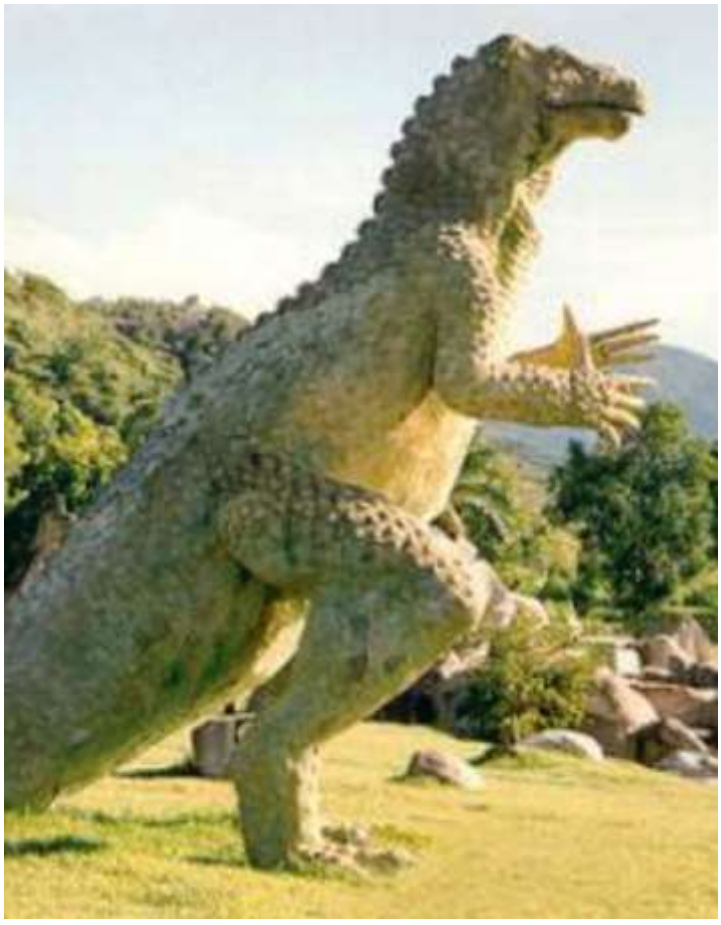
Realism hadn't improved much by the time the prehistoric park at Baconao in Cuba was created in 1987. We visited the park in 1999 while on a Caribbean cruise, after first visiting Santiago the city where the Cuban revolution started in the 1950's. Here Iguanodon is shown as standing upright with its tail dragging on the ground. It does now have the characteristic 'thumb spike' though.



Crystal Palace Iguanodon

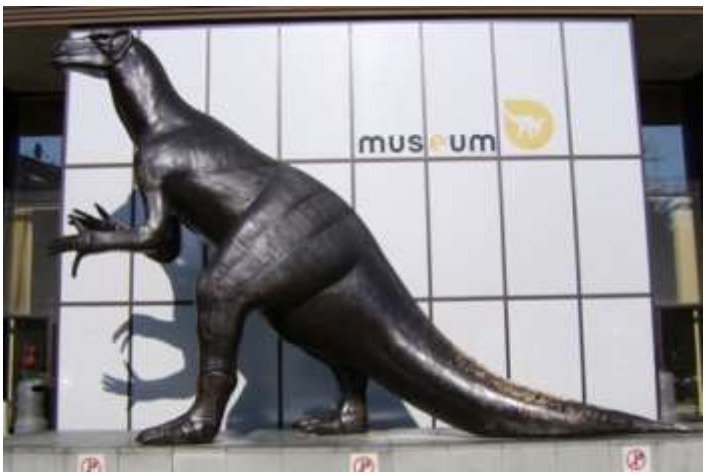


Rapid City Iguanodon

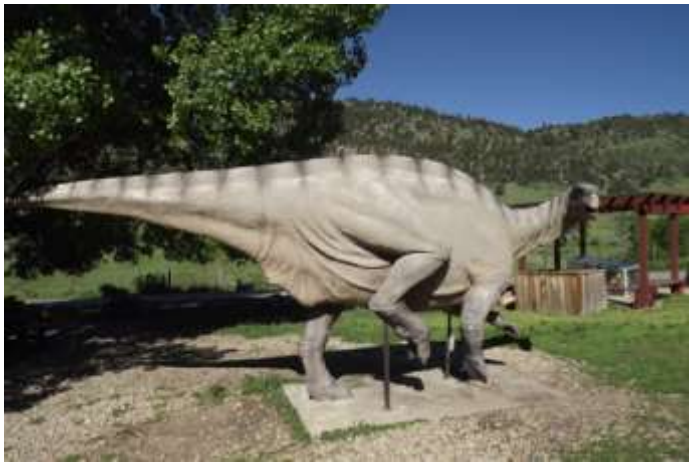


Baconao Park, Cuba

A similar restoration style is shown at the statue outside the Brussels Natural History, this is because the museum contains the skeletons of the famous Bernisaat discovery. Where in 1878 the remains of over a dozen Iguanodon were found in, of all places, a coal mine. It is believed that the herd of dinosaurs fell into a sink hole and became entombed. As the mine tunnels were dug miners came across the fossilised remains.



Brussels Natural History Museum



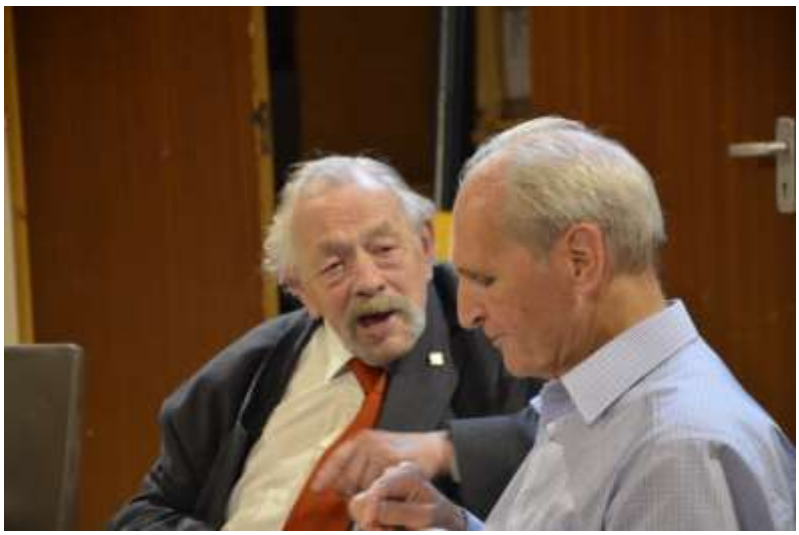
Dinosaur Valley, Denver

Back to the USA and just outside of Denver is a fantastic site where hundreds of in-situ dinosaur footprints can be seen at Dinosaur Valley. There can be seen a much more modern reconstruction of Iguanodon, and now he is back walking on all fours!.

Lastly when I was looking up information for this article, I discovered that a new Iguanodon Statue has been erected at Southwater in Sussex. This is to commemorate the discovery at nearby Cuckfield in 1807, of the first fossil teeth fossils of what Gideon Mantel later named Iguanodon. I haven't seen this one myself yet but I will make a point of going there in the future.

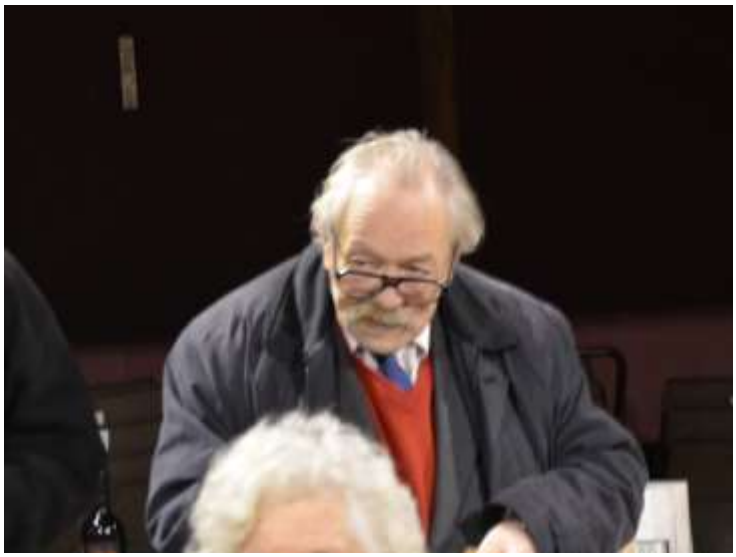
Don Searl

By Nick Baker



Don died last January but we did not get to hear the news until very recently. I'm guessing that this time gap may have been due to Don not being very meticulous at contact details– the family not knowing who to inform. Don's methods of recording may have guided some of his scientific recording—which Raymond Casey was critical from time to time.

Don was a frequent and active member of the Medway Soc and the KGG, but much less so in recent years. The photo on the left is of Don talking with John Taylor in July 2014. I think that was the last time I saw him. Don was an early member of the KGG and I first met him when the Group met at the Kent Museum of Rural Life at Maidstone.



2013

1999

Don worked mainly in electronics, but after redundancy he and his wife set up business in computer supplies. As well as his interest in geology he also had a keen interest in astronomy and also caving, in which he gave a talk to the KGG. I have also heard that he was quite an able pianist, but I don't have the detail there.

Now, I can verify most of what I have said but there is a problem—he seemed to have a close association with one, Walter Mitty. Mostly, this involved the car. Hardly a week went by when he had not overturned the car at least once, and there was the occasion when he had witnessed a car being sucked off the A20 by a tornado funnel! Nothing was reported in the news.

Now, I should also add, as a positive, that Don was also very kind and helpful. In the days when we both lived near Orpington, Don would drive me home from the KGG meeting. There was one slight problem, which you accepted as part of the deal. Don chain-smoked. It usually took me about four days to get rid of the smoker's cough that I acquired after the journey.

One of our colleagues has pointed out that Don had done all the 'wrong' things, but outlived her father, who had done all the 'right' things, by 10 years. Such is life. I think the best way of summing this up is to say that Don was part of that rich 'tapestry', known as Humanity, as are we all!

Finding a rare(?) tooth.

by Nick Baker

I suppose it is common among collectors of anything, that it is the hope of finding the rare and unusual, that drives one on. One ends up with masses of the common but interesting. Fish teeth may seem commonplace in the Eocene, but may become all the more valued when found in the Chalk. And excitement grows when you realised you have found a reptile tooth. But for me, I've always wanted the Chalk to yield up the tooth of a pterodactyl.

It was in the spring of 1984, that I was in the Culand pit and was ending my visit with a look at the tramway cutting leading from the pit. I discovered a trench had been cut in the floor of the cutting, at a point at the junction of the Chalk and Gault. The trench had unearthed a lot clay and Glauconite Marl. I subsequently learned that it was probably Jim Craig and others who had got permission to excavate. I began to examine this, as one does!

I found a large shark tooth and a small tooth—the one illustrated on the frontispiece of this letter. The small tooth excited me more because it seemed reptilian. It was included in my collection and then forgotten! Recently, I tried to get identification by sending a photo to the NHM. Events of this year mean that the enquiry would need to be repeated in better times.

The age of the Glauconite Marl has been a subject of argument. Many guide books and regional guides seem to include it in the Chalk. It's contents seem to be a mixture of age. Gary Woodall noted that the large "*Lamna'* tooth that I had found was definitely a Gault specimen.

The whole matter seem to suggest that bed is composed of large material derived from the Gault, re-deposited in a finer material of basal Cenomanian age. At the three Kentish sites from which I have material - Paddlesworth (nr Snodland), Culand cutting, and Folkestone, the bed is composed largely of glauconite and iron pyrite. At Folkestone, the pyrite is composed of minute cubes. The only fossils are 'beaten-up' forams. Now travel northward to Barrington in Cambridgeshire, and a different picture presents, assuming that the Cambridge Greensand is the equivalent of the Glauconite Marl. Here the bed consists of a grey marl with some glauconite and phosphate pebbles. The marl itself has a rich micro-fauna. The ostracods show a strong Gault affinity, with mostly *Cythere,* but with more of the 'punks' - *Cythereis*, than in the Lower Chalk, above. But at the same time there is a large number of early *Bairdia,* which otherwise only become common in the higher Chalk. The most common forams are the "*Lenticulina*" and *Frondicularia.* The Kent deposits seem to present an anoxic but very potassium-rich environment. These conditions should not affect what was flying over the sea, or subsequently fell into it—except for the process of its decay! On the matter of the tooth, I hope to get a judgement in due course.

The Geology of….

That slab of black Belgian Marble.

by Nick Baker

It is unfortunate that that 100th anniversary of the inauguration of the **Tomb of the Unknown Soldier** should come in such an ill-fated year. I cannot recall ever having seen the Tomb, and so never noticed that highly polished black slab of stone. But being of a geological mind, that description set me thinking. I even had a conspiracy theory developing—I mean suppose it was from some other place and had got mis-placed. Firstly, is that Geologists marble or Builders marble? In the first instance, it would have to be a metamorphosed limestone. In the second case it could be a polished basalt.

Well, I decided to resort to Wikipedia—as one does, and got the following.

Noir Belge (Belgian Black) is collective noun referring to black limestone found on several sites in Belgium. Some trade names refer more specifically to the quarry were the material was found, for example "Noir de Mazy" or "Noir de Golzinne". Some *Noir belge marble* deposit belongs to a fine-grained calcareous sedimentary formation dated Frasnian era (Upper Devonian – around 360 million years ago) and located on the northern border of Namur sedimentary basin. A few black limestones are located in the lower Carboniferous (near the city of Dinant) [1]

To the naked eye the differences between the black marbles from different quarries are almost impossible to determine. Good "Belgian Black" is dug as an inconspicuous grey stone but becomes immaculately deep black and shining as it is polished. Its relative scarcity is due to the difficult exploiting conditions (quarries in underground operation, for example of Golzinne and Bioul). Today it is one of the most expensive marbles in the world.

"Noir Belge" has been exploited since Roman Antiquity when the Belgian provinces belonged to the Roman Imperium (Gallia Belgica). It was used in mosaics in local villas. The name "Paragone del Belgio" or "Diaspro del Belgio" of this marble originated from the use of Belgium black stones to test the content of gold in coinage.

Since Renaissance the "Noir Belge" marble was widely used as a decorative construction material. Due to its immaculate velvety black appearance and its remarkable high gloss, it was preferred by artisans across Europe. It became exceedingly widespread since it was preferred as the deep-black background for the colourful Intarsia or Pietra dura works from the Florentine Medici workshop founded in 1588. "Noir Belge" was even used by Italian artisans in the intarsia decoration of the Taj Mahal in India.[*citation needed*]

In northern Europe, especially in Belgium and France, "Noir Belge" was also applied to large decorative structures such as stairs, floorings, altars, fireplaces... It was often used in combination with white marble imported from Carrara but also with local red and grey marbles. It was applied on a large scale in chessboard floorings, for example in the Palace of Versailles and the Chateau of Vaux-le-Vicomte. Until the 1930s it remained popular in Art Deco decorations such as clocks and vases.

From First World War onward, the difficulties linked to the underground exploration of the quarries combined with the progressive exhaustion of the precious resource led to a progressive limitation of the use of this marble to the most exclusive and prestigious architectural and artistic creations

So, hard limestones of Upper Devonian or Lower Carboniferous age. Looking at my own collection of sediments, it becomes apparent that we have examples of black limestones, of similar age here in England.

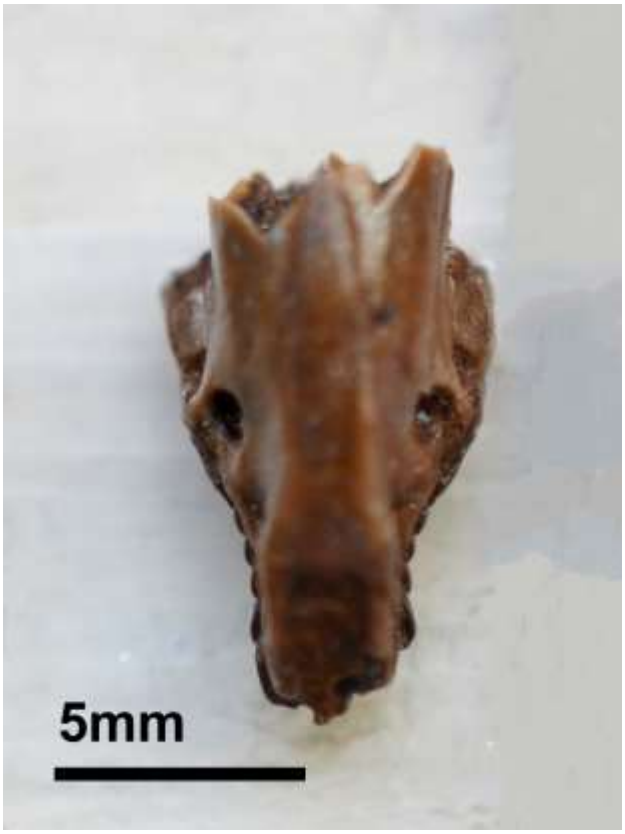
For instance, there is the black limestone in the Carboniferous, near Apes Tor, Warslow, Derbyshire. And of the same age is the Lonsdalia Limestone of Longstone Edge. Remember what was said about the best Belgian stone, being grey when fresh but becomes black when polished—rather like the Torquay Limestone, in the marine Devonian of South Devon. Yes, similar but I don't know if they even approach the quality of the Belgian varieties.

I find a skull

By Nick Baker

The dream of finding a Pterodactyl tooth had a parallel in the case of the Coal Measures. While hoping to find good plant specimens, there was always present the chance of finding a Labyrinthodont skull or even just a tooth. That didn't happen. I did find a skull but not in the Coal Measures. Something younger and smaller.

In 1996, Adrian Rundle took the KGG on a trip to sample the Pleistocene deposits of Norfolk and Suffolk. I was not present and on his return he gave me a bag (as he often did) of the Upper Freshwater Bed of the Cromer Forest Series, from East Runton, Norfolk.



I processed it and there in the residue was a skull, or rather the upper half. The skull was that of a vole. Now voles can burrow, which can put their age in doubt, but in this one, the skull was filled in with a fairly compacted ironstone.

And here is a well-compacted label

19961020_01_2
Vole—part of skull.
Pleistocene-Cromerian-Cromer Forest Bed-Upper Freshwater Bed
At the base of the cliff, 100m east of the car park, 800m NE of West Runton, Norfolk TG 186432
Collected by A. Rundle on 19961020 (Nick Baker colln)

The case of the Gamma Selenite

by Nick Baker

Well, we are back to Blue Bell Hill, so it must be fossils. Well, no, it's minerals. And not the Chalk. We are now in the Hillwash on the south east side of Culand pit. I need to explain some history. Between 1987 and 97, I became interested in the petrology and the production of rock thin-section and produced around 200, entirely by hand. A lot of the information on this came to me via the Open University Geological Society. By this I became acquainted to a gent by the name of Alex Herriot, who lived at East Kilbride. He had produced 5000 thin sections between 1950 and 1990 and had become particularly expert in the chemistry of the Tertiary Dykes of West Scotland.

So, to get back to Blue Bell Hill—In 1993 I was examining the Hillwash and discovered some small crystals within the sample. I mentioned the fact to Alex and he requested that I sent some of the material to him—he would send it to University of Glasgow Geological Dept. for analysis. The sample underwent spectroscopic analysis and reported that the crystals were Gamma Calcium Sulphate. Now, after quite a lot of searching, and unearthing some documents on very high-power chemistry, I have concluded that the 'Gamma' designation refers to the variations in molecular structure within chemical compound.

That leaves me to speculate on the origin of the mineral. Obviously, the calcium is not a problem—there is a lot in the area. Gypsum, Selenite, Anhydrite, in sedimentary environments are either evaporites or the product of the oxidation of Iron Pyrite. In the latter case, the local chalk has a sporadic but sparse supply of Pyrite. The Hillwash has a high Chalk content, given that the Hillwash is derived largely from the Chalk higher up the scarp. Any weathered Pyrite would be included in the mix.

But what of the designation—Gamma? What of Alpha, Beta, Delta…..Omega?! If it relates to the mode of formation, then the crystals occurring in the London Clay, Gault etc. might also be Gamma. But at the present point in this, my speculation comes to a close.