AN UNRESOLVED MYSTERY

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For many years I have had the title of 'Society Archivist' which actually means that I have retained, in as pristine condition as possible, copies of the Bath Geological Society Journal which date from 1981, Society programmes dating from 1971, booklets such as 'The Building Stones of Bath', and the 'Guide to Brown's Folly' by R.B.J.Smith. There are also other documents and records and an album of photographs dating between 1988 and 2011. (Sadly, because everybody now keeps their photographs on computers and phones without printing any, the photographic record of Society events has stopped).

In early Autumn 2014 Elizabeth Devon gave me a large carrier bag and told me that the bag contained files of documents pertaining to Annual General Meetings and Committee Meetings of the Bath Geological Society from a long period of years. On examining the contents of the bag, I found a file containing agendas and minutes of Committee meetings from 1987 to 2009 (which we thought had been lost) and a foolscap-sized book with handwritten minutes and Secretaries' reports. Also in the bag was a ring binder file of type-written agendas and minutes of AGMs from 1976 to 2006, 2010 and 2012.

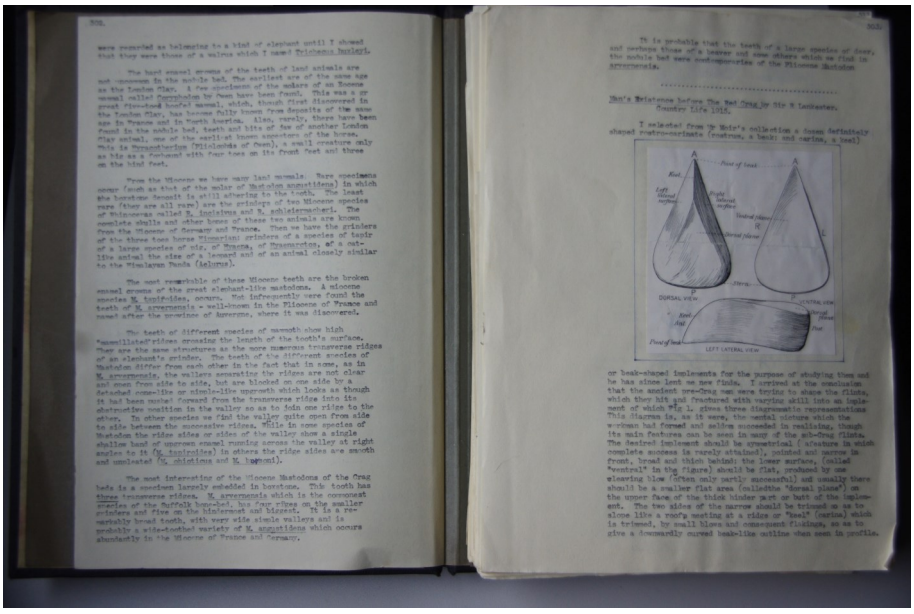


Figure 1: Pages in the black File

On being handed the polythene bag, Elizabeth warned me that it was rather heavy. Considering what it was supposed to contain, I was a little surprised by the weight. However, I took it home and started to examine the contents. Within the bag with the Society documents listed above was a black spring-backed file containing a large number of loose sheets of paper, each with text which had clearly been typed on a manual typewriter, and judging by the yellowing of the paper, had been compiled many years ago (photo 02). My curiosity was well and truly whetted so I started to read through to see if I could determine the writer and origins of the work. There was no name on the black file, front or back, nor any number to indicate if it was a series or just a single item. Curiously, the first page was numbered 300 and the last 564 so it quickly became evident to me that there must be other files somewhere with sheets numbered 1 to 299, and from 565 onwards. Also becoming evident as I read through was that it was articles specifically relating to the Tertiary and Quaternary periods, with an emphasis on the glaciations and their effect on Britain, its landscape, human inhabitants, fauna and flora. My first impression was that the articles were notes taken at lectures that the writer had attended and then transcribed into the file, typing them for clarity and future reference. Many of the articles were undated but then I came across one with the title ''The Red Crag Shell Portrait'' published in the 1914 Prehistory Society of East Anglia, in which a typical Red Crag species of shell is described which had been carved, the text being 'on the convex surface are five deep cut marks, vis. two eyes, dug out circular, a large nose, triangular, a wide mouth, slightly curved, with below it a small, nearly straight mark for the lower lip or chin'. The shell was found in the Red Crag cliff at Walton-on-the-Naze in Essex. (On looking up the title of the paper on the internet, there was much more information and a picture.) On

further examination of the papers, others came to light dated in the 1950's which then made me realise that the papers were not in any date order, which I would have expected if they were transcriptions of lectures attended by the writer. Another paper I found, on page 503, was entitled 'Origin of the Battered Spherical Flints called ''Cannon-shots'' from the Glacial Gravels of Norfolk' by F.N.Haward, F.G.A.

It was time to 'google' a few of the titles, starting with the one on cannon-shot flints. The amount of information was considerable and I discovered that this particular paper was printed in the Proceedings of the Geologists' Association 1924. After looking up a few others, amongst which was ''The Country about Cromer and Norwich'' by Professor P.G.M.Boswell, printed in the Proceedings of the Geologists' Association in 1923, in which is listed a comprehensive record of species of mollusc found in the north Norfolk area, it became obvious that all these articles had been laboriously typed out from journals and magazines over a wide span of years. Clearly, the typist had been in a locality or in employment where he or she had access to journals of all types and then specifically typed up any papers on the Tertiary, Quaternary, Ice Ages, human origins, fauna, with a bias towards molluscs of the Red Crag of East Anglia, and flora. Naturally, because most of the geology of these periods in Britain is found in the east and south east of Britain, the papers had a strong, but not exclusive, bias towards these areas. On page 491, one of the papers is titled ''The Petrography of the Tertiary Outliers of the West of England'' again, by P.G.Boswell, published in the Quarterly Journal of the Geological Society, vol. 79 no 2 in 1923. Other subjects which were clearly of interest are stone-age flint implements, molluscan fauna of the Pleistocene era and glacial erratic, while there are a few relating to other parts of the world such as the finding of hominid fossils in Olduvai Gorge as printed in the Illustrated London News in July 1958 and the Scientific American in June 1958. A paper that particularly caught my attention was ''Fertiliser from Fossils'' by John Gunston, published in The Field, March 26th 1953 in which the 'industry' of mining coprolites (fossil phosphatic dung) in various parts of East Anglia and at Potton, Bedfordshire, was described. Large supplies of coprolites were dug near Cambridge from 1845 and also plentiful supplies were obtained in Suffolk with a factory to process them being built at Bramford near Ipswich in 1851. The coprolites were reacted with sulphuric acid to give 'superphosphate' and there are descriptions of the process and of the workers who were called 'the men in red' because of the colouring of their clothes caused by the process. There is a photo labelled 'Typical Coprolites' but the specimens shown are two shark-like teeth and the crushing plate of a shark! Many of the articles contain photographs which appear to be photocopies of the originals which beg the question, why type out the article but take photocopies of the figures and photos?

A few days after receiving the polythene bag of documents, we travelled to north Norfolk, staying at Cley-next-the-Sea, some 12 miles west of Cromer. On a wet, gloomy morning, with the day's forecast to suit and dressed in waterproof gear, we caught the bus to Cromer. However, within a few miles of Cromer, the rain eased to slight drizzle and had stopped completely by our arrival. Walking to the east of Cromer along the beach, I quickly became aware of heavy earth moving equipment on the beach and deep excavations along the base of the promenade. Lorries of cement were being driven to the beach along the wide promenade and then emptying into dumper trucks which took the cement to the excavations in the beach where it was poured into the holes. The information boards on the prom told us that the tidal surge of December 2013 had caused so much damage to the beach it was going to cost £8 million to bring the sea defences up to scratch. It was to the east end of the 'prom' that I was heading, to the cliff called Lighthouse Cliff where the paper in the mysterious 'Black File' recorded 'Cannon-shot Flints'. The paper also included some photographs of the 'cannon-shots', and a newspaper cutting of an article entitled 'Round Flints Discovery near Lowestoft' from The Eastern Daily Press of 27th March 1936. Also, there was a photograph of the Cannon-shot Gravels at Lighthouse Cliff. What a coincidence or stroke of fortune, call it what you will, that three days after being given the bag of documents we were to stay on the north Norfolk coast, only a few miles from Cromer. As I walked along the pebble ridge

further east, beyond the end of the promenade, I noted that there were large swathes of flint pebbles and cobbles in banks separated by areas of sand. When I arrived at Lighthouse Cliff, there was no sign of the 'Cannon-shot Gravels'. The entire cliff below a vertical bluff (Figure 2) was covered in vegetation which reached to the lowest levels of the soft cliff which had been eroded back by the sea. A soft muddy 'apron' extended out from the eroded cliff for 2 to 3 metres and was

Figure 2: Lighthouse cliff, Cromer

clearly covering any flints newly washed out. In the photograph reproduced from the paper (Figure 3) the contrast between the cliff in the early to mid 20th century and 2014 can be seen, with a cannon shot flint indicated by the arrow.

I retraced my steps but, this time, walking over the pebble ridges, carefully looking for any spherical flints. The majority of the flints were irregularly and curiously shaped (Figures 4-6) many with holes. These particular flints are considered to be 'paramoudra' which are crustacean or large worm burrows that have been preserved by the hardening of the silica into flint. (I have captioned Figure 6 'Waiting Patiently' as the flint is shaped like a small dog curled up, waiting for its master!)

Eventually, a very rounded one caught my eye and, yes, it was a 'Cannon-shot Flint' (Figures 7 and 8). It was not quite spherical but slightly egg-shaped with curious rounded patches like bruises on the surface (Figure 9). (I found a second 'Cannon-shot' flint a bit further on and this one did not exhibit the rounded 'bruises'). Referring to the paper, I found that this feature was normal and attributed to battering during high energy tidal conditions to produce these 'bruises' on the flints. Indeed, according to the paper, some 'cannon-shot flints' fall apart quite readily along lines of fracture induced by the battering. Under close examination with a lens, the 'bruises' on my specimen appear to be features within the matrix of the flint. As well as the small circular marks, there are a few small holes which are typical of the holes found in flint, with chalky linings such as seen where the flint has replaced burrows or borings in the chalk. However, less well formed holes and marks can be seen on the irregularly shaped flints.

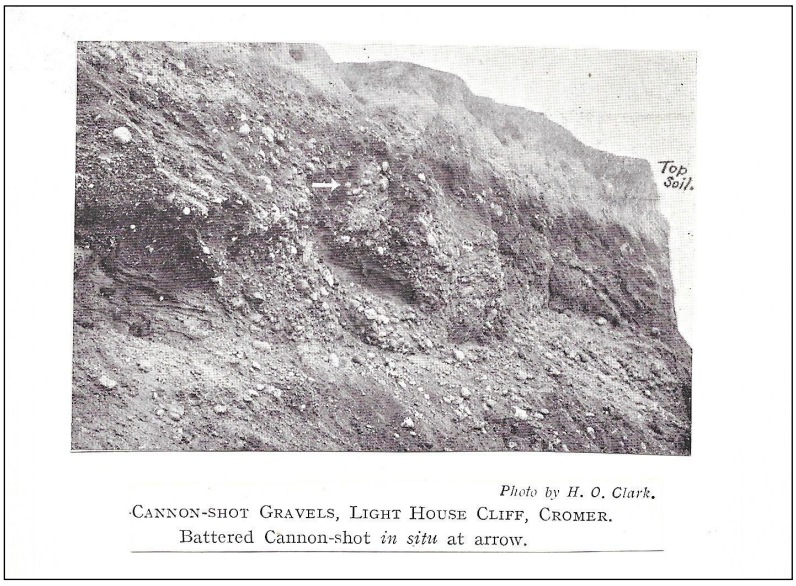


Figure 3: Lighthouse Cliff, Cromer, in early 20th century

The paper also provides explanations for the spherical nature of the flints, suggesting that it had been caused by 'potholing' or 'kettle-holing' where flints had been caught in a circular depression and rotated under ice in violent physical conditions (presumably in glacial meltwater with a highly abrasive action). However, the author of the original paper was convinced that the flints were naturally rounded and that the rounding had occurred from surrounding flint nodules during extremely violent storms (during erosion of the chalk or post glaciations?). In considering this hypothesis, I came to the conclusion that the flint was more

Figure 5: Flint

Figure 6: Large flint with hole

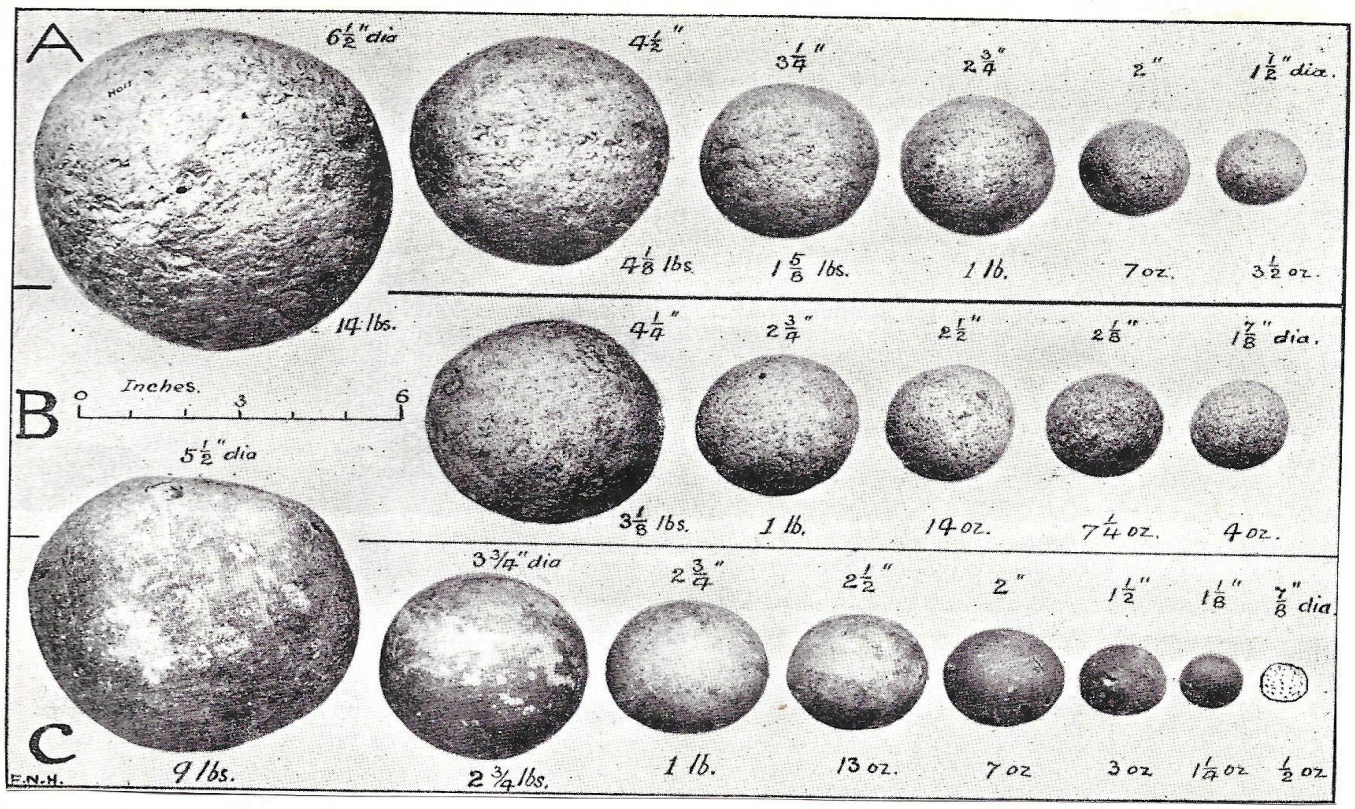
Figure 7: Flint " Waiting patiently"

Figure 8: Cannon-shot flint

Figure 9: cannon-shot flint showing bruising

likely to have been 'potholed' during glaciations because of the spherical nature in spite of the slight 'egg' shape. The paper records that flints have been found with diameters ranging from 6½ inches (16.5cm) down to 1½ inches (3.7cm) and weighing 14 lbs (6.36k) to ½ oz (14gm). The specimen found by myself on Cromer Lighthouse Cliff beach is 3½ inches (9cm) in diameter and weighed 2lb 10oz (1.19k). I have taken the liberty to copy to items from the paper. One is an article in the Eastern Daily Press of March 27th 1936 (Figure 10, overleaf) while the other is a photograph of the range of sizes and weights described in the paper (Figure 11). The 'Opengeoscience' website records the locality as sheets of interbedded gravels, sands, silts and clays. The gravels are dominated by flint (up to 80%) and by quartz and quartzite (up to 60%) with far travelled lithologies. They are interpreted as near-shore marine and estuarine deposits of mainly sand and gravel, being superficial deposits formed up to 3 million years ago which cut down through the Norwich Crag Formation, coming to rest on the Chalk Group bedrock of north Norfolk.

The 'Black File' has so far provided a lot of information and reflects, in particular, the stage of geological investigation into the Tertiary and Quaternary of Great Britain in the late 19th and up to the middle of the 20th centuries. In working through the articles in the File, others have provided information which can be followed up to find how relevant they are in the early 21st century. Nevertheless, we do know that he or she was passionate about the Tertiary and Quaternary epochs in all their branches whether they were geology, conchology, botany, zoology and anthropolgy. So passionate, in fact, that they laboriously typed out articles from all sorts of sources. Oh! that we would be able to track down the first volume and those that followed this one. One thing remains, though - the mystery of the owner and compiler of the Black File is still unresolved!

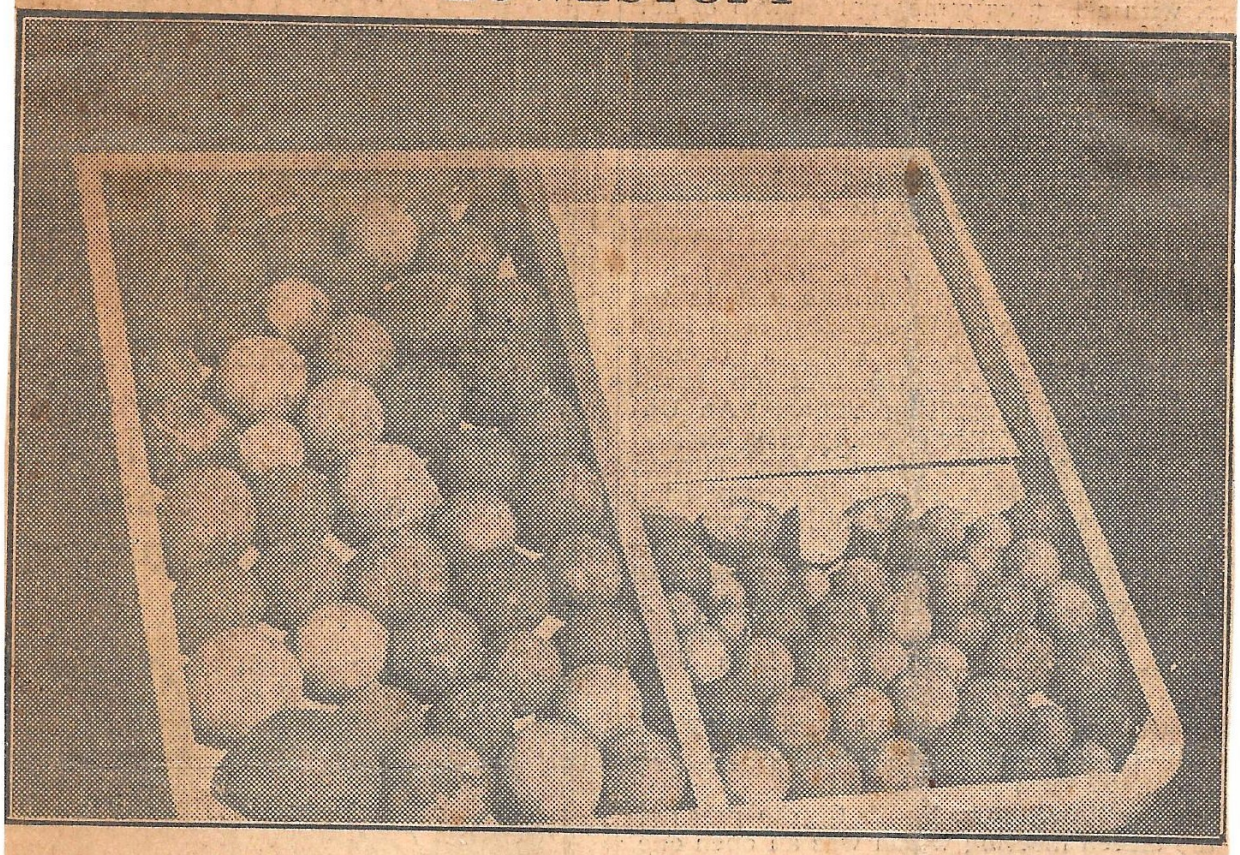


A.—Battered Cannon-shots, Kelling Pits, Holt.
B.—Battered Cannon-shots, Cannon-shot Gravel, Cromer.
C.—Unbattered Fossil Spheres, Cannon-shot Gravel, Cromer.

Figure 11: Ranges of size and weight of cannon-shot gravel

Eastern Daily Press 27/3/36,

ROUND FLINTS DISCOVERY NEAR LOWESTOFT



No little interest has been aroused by the display in a window at the offices of Lowestoft Water & Gas Company of a tray of round stones, nearly a hundred of which were unearthed by workmen during excavations preparatory to the installation of new plant at Lound Waterworks.

The stones are flints, spherical in shape, and varying from one to three inches in diameter. They were all found within a radius of a few yards and at a depth of five or six feet in an area where the discovery of neolithic implements in 1909 suggested that there was a stone-age settlement in the near neighbourhood. The implements found in 1909 were spear heads and other weapons and are now preserved in Norwich Castle Museum.

Various theories as to the origin of the latest find have been advanced. One is that they are of no great age and probably formed part of a disused filter bed. Another suggestion is that they may have been employed as fire-stones in a gipsy encampment, or may have been used as heating stones in a manner similar to the method employed to-day by the Polynesians and Melanesians—by heating them in a fire and dropping them into water.

Both the previous and the present discovery were made in what had been a natural watercourse which, it is considered, would have certainly been used by settlers in the neolithic age, and the most generally accepted theory is that the flints were used as heating stones or as ammunition for their catapults by the Ancient Britons.

Mr. Leney, Curator of Norwich Castle Museum, has been informed of the new discovery, and local antiquaries are invited by Mr. T. V. Johns general manager of the company, to make a closer examination of the stones.

Figure 10: Article in Eastern Daily Press 27th March 1937