

## “CLENCHING AUTHORITY”: JOSEPH PRESTWICH AND THE PROOFS OF THE ANTIQUITY OF MAN

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### ABSTRACT

*Joseph Prestwich, born in 1812 in London, was to play a pivotal role in determining the unequivocal antiquity of man during a visit to Northern France in 1859. This paper considers his early career and examines how a man who geologised as a part-time distraction to a family wine business rose to become the most respected authority on Pleistocene stratigraphy in Victorian Britain. During the momentous events of 1859 the scientific community looked to Prestwich for confirmation on the association of flint implements and extinct fauna.*

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*“Point to a broken pebble and there is one who will tell you the point of the compass from which it came, the stratum which yielded it, the distance it has travelled, the amount of rolling it had undergone and the time it had occupied in the journey. The power thus acquired was soon to be applied with clenching authority to the proofs of the antiquity of man”*

(Falconer 1868: 584)

### INTRODUCTION

*“If, during next summer, you should happen to be paying a visit to France, let me strongly recommend you come to Abbeville”*

(Letter from H. Falconer to J. Prestwich, 1<sup>st</sup> Nov. 1858, in G. Prestwich & Geikie 1899: 119)

During April of 1859 there was a moment where the observation of a single stone tool,

recorded by Joseph Prestwich and John Evans within the gravels of the Somme, heralded a new paradigm in scientific understanding. It is hard to conceive, amongst the millions of subsequent finds of Stone Age implements, of a single tool which could compete in terms of importance and implication to the story of human origins. This volume was conceived in part to commemorate the 150<sup>th</sup> anniversary of these events. It is therefore fitting to consider in a little detail the role of the individual who was to deliver the apparently conclusive pronouncement on the unresolved subject of the true age of humanity. Specifically, we wish to examine the early career of Prestwich in order to understand how he, a man who made “geologising” the pursuit of his leisure time away from a successful wine business, became one of the principal authorities to which the academic community looked in pronouncing on such a contentious issue. Given that Prestwich was,

later in his career, to become associated indelibly with the Eolith debate as a great proponent of their status as true artefacts (cf. McNabb, this volume) — a sadly misguided position belying his academic status despite the concerns and advice of those closest to him — here we present the career of the younger Prestwich, a man who was at the very forward edge of revolutionary changes in scientific thought relating to the age and genesis of our own species. The biographical notes and observations presented here are largely taken from letters and sketches presented by Prestwich's widow Grace, and Archibald Geikie (G. Prestwich & Geikie 1899).

### THE EARLY LIFE AND CAREER OF PRESTWICH

Joseph Prestwich (Figure 1) was born on March 12<sup>th</sup> 1812 in Clapham, London, to parents Joseph Prestwich, a wine merchant of Mark Lane, London, and Catherine (née Blakeways). Joseph was named after his father and his elder brother, who had died after only a few weeks of life. Joseph was sent to be educated in France, perhaps because of links his father had made through his wine business. Whatever the reason for a continental education it was to establish Prestwich both with a grounding for cross-channel travel and French culture, both of which would serve him well in later years. During his first day in France, before he had even left Calais, the 11 year old Prestwich was to have his first baptism in geological exploration:

*“I took the opportunity of going down one of the shallow wells which were then to be found in most of the courtyards of the town, and came up, I imagine, not much the wiser”*

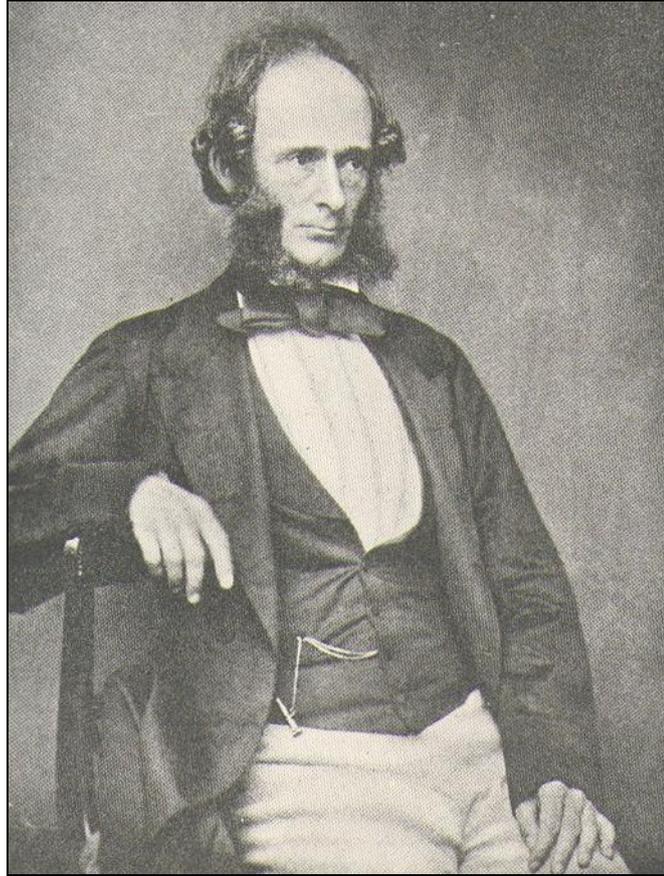
(J. Prestwich, in G. Prestwich & Geikie 1899: 10)

Wisdom was perhaps to come later, but from 1823 and the start of his education in Paris, he began to develop skills which were to

serve his later passion for ‘geologising’. Prestwich recalls becoming entranced by specimens of gypsum crystals from the local Tertiary geology; he developed a passion for drawing and chemistry, together with a talent for languages (G. Prestwich & Geikie 1899). He was characteristically mischievous as a child but universally well-liked, working his way into the affections of his own family as well as his French guardian family. Throughout his education he balanced, with seeming lack of contradiction or tension, the single-minded pursuit of his chemistry studies with a passion for poetry and a talent for oil painting which supplemented his income during university. His studies were further pursued at University College, London with zeal, working demanding long hours, with a Spartan disregard for his needs in terms of food, sleep or even adequate light to study by. During this time he was led, quite literally, to the study of geology by noting the variety of stone used in the paving of the London streets on his route to and from college. His inquiring mind, competent knowledge of chemistry and new-found fascination with the origin of rock types combined within the young man to form an intent to dedicate his life to the study of geology and palaeontology.

However, while geology was to dominate his passions it was not, for the next forty years, to dominate his time. His professional path was to take him away from academic study and into the city to continue the management of the family wine importation business. It was to be the hours spent away from the office that became the moments he lived for, with every day planned to maximise his studies before and after office duties, and weekends and holidays structured around field trips and excursions to the quarries and coal fields which held his fascination.

Through his twenties he began a serious study of the geology of the Thames Basin, researches which were to lead to the crystallisation of his academic pursuits in the classification of Tertiary stratigraphy within



*Figure 1: Joseph Prestwich, 1812–1896*

southern Britain and, crucially, northern France, where business in the family wine trade often took him. During these excursions, those colleagues and friends who accompanied him would have to endure days in which eating and comfort were sacrificed, time being dedicated only to observation within the quarries and pits of the region. As evening approached, there was often to be little respite with the party of young men covered in the dust and mud of the pits, so laden down with fossils and geological specimens that they were sometimes refused admittance to local hostels and inns. Whilst for Prestwich's companions these deprivations were only to be endured for the duration of the excursions, for Prestwich they formed part of the fabric of his daily life. Dinner was often only biscuits or buns, and regular meals were disregarded in favour of more hours spent in study and more finances with which to purchase equipment and materials (G. Prestwich & Geikie 1899).

It would be wrong, however, to equate Prestwich's self-sacrifice with a meanness of spirit or dour demeanour. He was, throughout his life, generous both in terms of time, attention and money to those both close and unknown to him who were in need. The large collection of scientific and experimental instruments he amassed for his own studies he put at the disposal of others, establishing the short-lived Zetetical Society for the pooling of equipment and resources for mutual support of young academics from all branches of science and natural philosophy, pointedly excluding discussions of a theological nature. While short-lived the whole premise of the Society was in harmony with Prestwich's approach to science — that it was to be founded on close relationships with his peers, and the generous sharing of both knowledge and materials for the advancement and benefit of all.

Within both his professional and personal circle he inspired a great amount of affection, and was considered a man of both great integrity and good discernment. Still a bachelor, he relished time spent close to family and friends, and endured rather than relished the long periods of isolation his frequent geological excursions would enforce upon him. He would therefore balance the necessary periods of isolation with frequent parties and dances, often hosted at his own house, dancing being a passion of his which he indulged whenever possible. Other parties would be organised for his friends and sisters which involved the consumption of large amounts of nitrous oxide and ether, personally produced by Prestwich for the occasion. One such party resulted in one friend L'Anson going into convulsions and E.T. Newton, a future Lyell Medal winner and President of the Geologists' Association, fleeing the scene in fear.

### THE SCHOLAR

While Prestwich published his first paper in 1834, at the age of 22 (Prestwich 1834), it was to be through his thirties that he really began his prolific and significant contribution to Geology. Between 1840 and 1855 he published some 27 papers, mostly on subjects relating to the British coalfields or the Tertiary geology of Britain and northern Europe. During this period his researches were, however, to periodically touch upon the Drift geology of the region, either in terms of differentiation from the younger Tertiary geology or on their own merits as an increasingly persistent focus of his interest. Papers on the Drift and associated fossils at Sangatte, Calais (Prestwich 1851), Salisbury, Wiltshire (Prestwich 1855a), and Reculver, Kent (Prestwich 1855b), show the interest that was beginning to alight in him on the more recent and superficial deposits of his chosen study region. In 1858 he was to publish *On the Westward Extension of the Old Raised*

*Beach of Brighton*, a paper significant to the present writers as first demonstrating fully the presence of the higher “Goodwood–Slindon” raised beach within Sussex (Prestwich 1858).

Despite no longer a young man, he continued a bachelor lifestyle into his forties, disregarding his own health and alternating the deprivations of field work with the enjoyment of parties upon his return to London. It was also during this period that Prestwich almost lost his life in pursuit of his work, being cut off by the tide at the base of Shakespeare Cliff, near Dover, and having to climb the sheer chalk surface without a rope; this sobering experience is perhaps the last example of the young reckless Prestwich. The death of his father in 1856 led to the taking on of greater responsibilities in relation to the family business, and the taking up of residence at the London family home; here he was looked after by his sister Civil. Alongside providing a stable domestic life for Joseph, Civil worked as a fully-engaged assistant in her brother's studies, beginning to organise not only regular meals but also his archives and references. It is of note that among the references organised by Civil during this period, the subjects of Boulder Clay, Raised Beaches, Drift, Caves and River Deltas are amongst the most prominent, reflecting in part the focus of his attentions during this time.

It was during the following year, 1857, that Prestwich was to meet the man who was from that point forward to become perhaps his closest personal friend and notable colleague. A meeting on a train with the antiquarian, John Evans (cf. Lamdin-Whymark, this volume), as both journeyed to give evidence at the same legal case (Gamble & Kruszynski 2009), led first to acquaintance and then to friendship. Out of this friendship was to come the introduction of Evans to the Geological Society of London, which we might view as symbolically cementing the early union of geology and archaeology. Shortly after, and

with the encouragement of Hugh Falconer, Scottish geologist and future father-in-law to Joseph, the friendship and mutual interest of the two men was to be crystallised in a new subject of endeavour, establishing the evidence for the antiquity of Man.

## BRIXHAM AND ABBEVILLE

In the mid-nineteenth century, faunal remains from caves and fissure deposits in Britain had received scant attention. Collections had previously been unsystematic and the subject had not yet been addressed in a coherent manner. Falconer and Prestwich were determined to remedy this, seeing it as essential that the systematic investigation of cave systems was undertaken to fully determine the nature and age of these deposits. Only with clear regard for the precise stratigraphic relationship and context of cave finds could the work of William Buckland, the pioneering palaeontologist, culminating in the publication of *Reliquiae Diluvianae* (1823), be built upon to a fuller understanding of the significance of these deposits. In 1858 the opportunity arose to undertake such work, with the discovery at Windmill Hill, near Brixham, Devon of a new undiscovered cave system. Falconer oversaw what we might view as the first properly organised and funded exploration of Pleistocene deposits in northern Europe. With a grant of £100 from the Royal Society, and under the direction of a committee assembled by Falconer and including Prestwich, as Treasurer, Andrew Ramsay and Charles Lyell, works were undertaken at the site under the day-to-day direction of William Pengelly (O'Connor 2007; Walker, this volume). This team, comprising skilled talent from a variety of backgrounds, could be viewed as the first multi-disciplinary research group in the early history of Palaeolithic archaeology, forging a discipline which had previously not existed and founded on the basis of collaboration, close oversight of the project in hand and interpretation on the basis of individual

expertise and group consensus in equal measure.

It was to be here in Brixham Cave, in the summer of 1858, from the coordinated works of Falconer's team, that fossils of Pleistocene fauna were for the first time recovered in association with stone tools by controlled excavation. A report was very quickly prepared. Brixham at this point stood poised to become a site of huge historical and scientific importance, opening the case for the antiquity of Man as a demonstrable scientific fact and cementing Brixham's place in the history of early human studies. However, this was not to be the case, as the wisdom of publishing a report, as a document finished and signed by the Brixham committee, was questioned by Prestwich:

*"For my own part I should not like it to be read at the Brit. Assoc. A report of that sort comes with a degree of might and authority which a short note would not have. The statement you make with regard to human industrial remains is one likely to give rise to so much controversy, and is one which you make so distinctly, that I do not like to see it embodied in a report which may be supposed to express the opinions of the several members of the Committee and in which I see my name introduced"*

(Letter from J. Prestwich to Falconer, 21<sup>st</sup> September 1858, in G. Prestwich & Geikie 1899: 117)

Prestwich did not consider it wise that such momentous conclusions should be drawn from one season of works at a single site. In his view, continued excavations at Brixham were needed to prove and clarify the association of stone tools and Pleistocene fauna, and if possible further occurrences needed to be investigated. During this time Prestwich seemed to be engaged in a flurry of visits to other sites to find this corroborative evidence. During the summer of 1858, he made visits to Banwell, Grays, Ilford, and a prolonged fieldtrip to study the

action of glaciers in Switzerland. Prestwich suggested, in letter to Falconer in September of 1858, that further localities be explored to find correlative evidence, including Kent's Cavern, cave localities on the Welsh coast (Gower), Bedford, Clacton, Herne Bay or Bracklesham. It was apparently his intention to cast the net wide and to progress the study of the subject on a broad front, whereby an overwhelming body of evidence could be slowly built and cross-referenced; he thought at this time a single site insufficient upon which to make such claims.

Moreover, Prestwich wished to see the site for himself and he was not prepared to publish such a significant paper until he himself had "worked on the ground and looked at all the bearings". There is nothing in the tone of Prestwich's notes which seems to be sceptical at this time, indeed he seems both open-minded and active in looking for the corroborative evidence, nor does there seem to be impatience on the part of Falconer. So the stage was set by late 1858 for the events of the following year. Clear indications for the great antiquity of human origins had been provided by the systematic investigations at Brixham, but they required further corroborative proof before their significant findings could be presented to the world with absolute confidence. Prestwich continued to consider other sites which might provide this evidence and waited for it to be delivered.

Again it was Falconer who was to direct Prestwich to the eventual source of the necessary supporting evidence which could demonstrate that the Brixham site was part of a much wider body of evidence. Falconer had visited Boucher de Perthes in Abbeville on the 1<sup>st</sup> November 1858 and, having been cordially welcomed by the ageing antiquarian, was impressed by his overwhelming collections which filled the hotel run by de Perthes. In particular, Falconer encouraged Prestwich to examine for himself the large collections of tools found by de Perthes in the local gravel pits

alongside the remains of mammals including *E. primigenius*. Falconer seemed genuinely convinced by de Perthes' evidence, but encouraged Prestwich to see the material for himself, perhaps knowing full well that little else would satisfy the geologist's sense of caution. Undoubtedly, Falconer knew that Prestwich countenanced nothing other than first hand evidence; he also seemed to know that Prestwich was the man to drive this avenue of research forward.

*"I am satisfied that English geologists are much behind the indications of the materials now in existence...and you are the man to bring up the leeway."*

(Letter from Falconer to J. Prestwich, 1<sup>st</sup> November 1858, in G. Prestwich & Geikie 1899: 119)

During early 1859, Prestwich had yet another opportunity to reconcile himself to the genuine association of flint tools and ancient bones at Brixham, and there was another short window within which Brixham may have been elevated to international significance. Godwin Austin, the English geologist who worked with Prestwich at Brixham in early 1859, had convinced both himself and apparently Prestwich of the genuine nature of the artefacts, and their association with the bones, and Prestwich had now first hand experience of the ground having visited the site. Yet Prestwich was still not content to pronounce the association as clear evidence of man's antiquity until he had considered every other possible explanation, and until the entire cave system had been emptied "to the very bottom of everything in the several galleries" (G. Prestwich & Geikie 1899: 121). Falconer by this time was in Italy and had himself found stone tools alongside fossil bones at Grotta di Maccagnone, in Sicily (Falconer 1860), but Prestwich was able to assure him by telegram that everything was now in place for him to visit de Perthes in Abbeville.

The history of de Perthes' discoveries in the Amiens and Abbeville district are dealt with

elsewhere in this volume by John Gowlett; here it suffices to say that little was known in Britain either about the man, his finds or their widespread dismissal by French science. Prestwich arrived in Abbeville in late April 1859 and was joined almost immediately by John Evans, now a good friend following their meeting some years earlier. The two were the only members of what was to have been a much larger party, but fate had conspired that only two experts, one in artefacts, the other in Tertiary and Drift stratigraphy, were to jointly witness the events in the Somme valley that month. The details of the journey are already well known and most recently summarised by Gamble (2008) and Gamble & Kruszynski (2009).

Prestwich and Evans were greeted by the ageing Boucher de Perthes and taken to his guesthouse which also served as a museum for his collection of stone tools, mammalian fauna and many hundreds of other antiquities and curiosities, both of genuine and suspect provenance. Local pits inspected with de Perthes proved relatively unproductive, although nonetheless some flakes were recovered *in situ*, but the subsequent visit to a pit close to Amiens at St Acheul, finally produced the evidence to settle the matter. Here, towards the base of a Pleistocene terrace gravel several metres thick, a single flint handaxe was first photographed, and then recovered, *in situ* from clearly ancient sediment beds. From the moment of this discovery onwards events moved quickly; within a month Prestwich had presented before the Royal Society, with Evans at his side (O'Connor 2007), his landmark paper *On the occurrence of Flint Implements associated with the Remains of Animals of Extinct Species in Beds of a Late Geological Period, in France at Amiens and Abbeville and in England at Hoxne* (Prestwich 1859).

There was apparently no doubt left in Prestwich's mind on the subject, no further concerns about considering other hypotheses for the co-occurrence of tools and fossil bones, no further need to excavate more

exhaustively in the deposits himself. Apparently the body of evidence, from both the work at Brixham, as well as reconsideration of British sites including Hoxne, only required this further example from northern France to persuade him completely of their genuine association and accept its implications. Yet in the month between the visit to Abbeville and presenting his paper Prestwich was not idle; he convened a second visit to the Abbeville area with Godwin Austin, John Wickham Flower and Robert Mylne. This was closely followed by a meeting at Amiens with Charles Lyell. Upon returning to England, he also urgently went to visit the site of Hoxne with Evans to see the find-spot of the flint tools resurrected by Evans from the collections at the Society of Antiquaries. This activity seemed to be directed at engaging with peers as much as reviewing the evidence. Prestwich was now in possession of an explosive idea and, while a man as deliberate in reaching his conclusions might not be swayed easily by others, the opinions of close peers and colleagues would have undoubtedly been sought (Figure 2).

These extra data however, contributed to the body of evidence within Prestwich's paper, which was presented to the Royal Society on 26<sup>th</sup> May 1859 (G. Prestwich & Geikie 1899); the following week, on the 2<sup>nd</sup> June 1859, Evans addressed the Society of Antiquaries (*ibid.*).

## AFTER ABBEVILLE

Prestwich had not been the first to pronounce on the genuine association of extinct fauna and stone tools in the Somme Valley. Originally deeply sceptical, having conducted research on mammalian species within the Somme, a local physician Dr. Jean-Paul Rigollot (1810–1873) had been intrigued enough by de Perthes' claims to conduct his own investigations in 1854. During the course of his work he was to recover several hundred artefacts from gravel

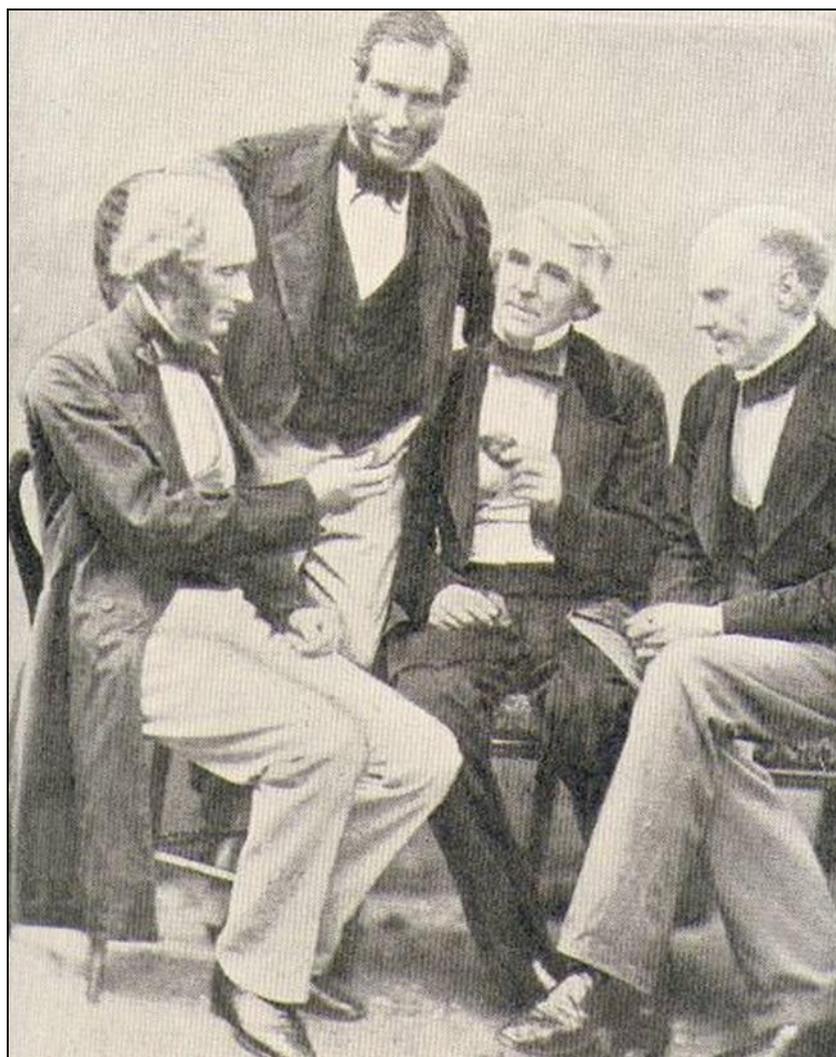


Figure 2: Joseph Prestwich (seated on left) and geological colleagues (Morris, Edwards and Woods) regarding Palaeoliths; students of Lower Palaeolithic society will notice how the large handaxe is in the possession of the dominant male while an on-looking colleague appears only to hold a flake or small tool

beds up to 30m above the current bed of the river Somme. His work was presented in an exhaustive memoir accompanied by careful illustrations (Lyell 1863: 95–96) and concluded that the stone tools were from the same geological layers bearing extinct mammals. Despite Dr Rigollot's thoroughness and diligent publication, his work did not apparently carry the weight necessary to lead to the wider acceptance of the idea. It was therefore left to Prestwich to present to the world a case which became rapidly accepted on both sides of the channel and effectively brought the study of human antiquity into a legitimate scientific framework.

But we should not take the rapidity and decisiveness of Prestwich's initial (1860) publication to suggest that he had lost his customary caution in the interpretation of the St Acheul observations:

*"He [Prestwich] does not consider the facts as they at present stand of necessity carry back man in past time more than they bring forward the great extinct mammals, towards our own time, the evidence has reference only to relative and not to absolute time"*

(Prestwich 1859: 1)

Prestwich's caution came from a personal conviction that the extinction of mammals

and the period of human occupation represented by the implements was brought to an end by a great flood. The rapid, catastrophic nature of this inundation required only a short time frame to account for the geological succession between the Somme finds and our own era. Whatever misgivings and qualifications Prestwich held, it did not prevent Falconer, Evans, Godwin-Austin, Flower and Lyell allowing the geologist to present the sober facts of the discovery alone as a single author. This, no doubt, was due simply to the high esteem and personal regard shown to Joseph Prestwich by his peers. Lyell, writing some four years after the events at the St Acheul site, expressed it thus:

*“There was no one in England whose authority deserved to have so much weight in overcoming incredulity in regard to the antiquity of the implements in question”*  
(Lyell 1863: 103)

And here is where the role of Prestwich in the discovery of the antiquity of man becomes clear. Prestwich’s paper was intended from the start to be the opening salvo of a succession of publications and papers, including those of Evans and Lyell. The well-respected geologist would provide the definitive account of the association and it was then to be left to his peers and close associates to follow up the breach in accepted opinion with less equivocal pronouncements on the antiquity of man.

The evidence for the ancient age of the human species, as with the concept of evolution, was not suddenly born in 1859. It had been developing slowly for many years with, besides Frere’s much earlier (1800) interpretation of the Hoxne finds, Lyell and Falconer becoming increasingly convinced of the evidence, despite earlier scepticism. They however, realised, like Prestwich, that the associations already documented from cave sequences were too unreliable a basis upon which to make such a revolutionary claim. The subject was without clear

frameworks in which to formulate and test the basic hypothesis that the human species was present earlier in geological time, and associated with quite different ecological contexts and climatic conditions to those of the present day. Without absolute dating techniques, a clear biostratigraphic framework or tangible habitation records, there was simply no definitive analytical method open to them to prove the case. In the infancy of the subject, the most persuasive tool was the reputation, objective interest and general esteem of one man. Falconer’s enthusiasm for Prestwich’s participation in the committee overseeing Brixham and his encouragement of Prestwich to visit the Somme, both stemmed simply from the enormous weight and respect that his opinion carried. Prestwich had come from outside the formal hierarchy of Victorian academia and pursued an interest in Drift deposits arising from an interest in stratigraphic succession, continuing seamlessly from his mapping of the Tertiary sedimentation of northern Europe. His work on the coal measures and other geological aspects of wider public and commercial good, had established a reputation based on the translation of academic endeavour into cold, prosaic economic realities. In short, Prestwich combined both a peerless understanding of stratigraphy with an established reputation for sober, literal reading of the geological record. Prestwich fulfilled, with regard to the emerging body of evidence for humanity’s great antiquity, the role of an analytical tool. His opinions, alone in the community of academics pursuing this subject, were those which could carry the weight necessary to make such an important and revolutionary claim.

The subsequent course of Prestwich’s career into old age is quite a different story, and one we leave to be told elsewhere in this volume (cf. McNabb, this volume). But any consideration of his later role in the study of Eoliths, Tertiary Man and Pleistocene inundations must be framed against his key

role in the events in the Somme Valley in 1859, where the respect and affection of Victorian Britain looked to him alone to deliver a new paradigm in the understanding of human origins.

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