Charles Lyell and the evidences of the antiquity of man

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Abstract: This paper examines the importance of Lyell’s book, The Geological Evidences of the Antiquity of Man (1863), in Lyell’s work and career, as well as its contribution to the founding of two scientific disciplines, Prehistoric Archaeology and Palaeoanthropology. It first focuses on Lyell’s two ‘conversions’ (to the idea of the antiquity of man and to Darwin’s theory of transmutation of species) both of which he acknowledged in his book; it turns then to a study of the nature of the ‘evidences’ that Lyell advances. These evidences were of several kinds – archaeological, palaeontological, anthropological, and, most importantly, geological; at the time, the best way to prove the existence of fossil Man was to demonstrate geologically the contemporaneity of man-made objects and extinct animals.

This paper insists in particular on Lyell’s relationship to French science of the time, and examines the circumstances and modalities of a collaboration which was essential to the international acceptance of the antiquity of man. The fact that Lyell was a major scientific authority, whose expertise could validate the authenticity of evidence, allowed him to play a central role in the founding of a new field of knowledge.

The years 1858–1863 have often been considered a key period for the development of Prehistoric Archaeology as a scientific discipline. These years saw the official recognition of the existence of man prior to history as laid down in written documents or biblical traditions – the existence of man in the age of the great extinct mammals. This recognition was a major event in the history of Western thought, as it thoroughly transformed the representations of man, of his place on Earth and his role in the living world. It was, in fact, the result of a long debate which goes back to the early nineteenth century, and which involved geological, palaeontological, archaeological and anthropological issues. It was also the result of the findings of researchers working independently of one another in several European countries, such as Denmark, France, Germany and England, whose work suddenly crystallized towards the middle of the century, especially with the collaboration of English and French men of science; Charles Lyell was to play a major role in all these events.

After Oakley’s seminal work (1964), several studies have recently appeared on this important and interesting episode of the history of science which marked the acceptance of the antiquity of Man by the scientific community throughout Europe; Donald Grayson (1983) has examined this period in a perspective of ‘longue durée’, from the seventeenth century to the end of the nineteenth century, and Bowdouin Van Riper, in a less comprehensive monograph (1993) has limited his scope to the years 1857–1865, when this ‘great and sudden revolution’ (Murchison 1868, p. 486) occurred in England. Others studies have focused on the French context and discoveries (Laming-Emperaire 1964; Cohen & Hublin 1989; Coye 1993; Groenen 1994).

My purpose here is to underline the importance of Lyell’s book, The Geological Evidences of the Antiquity of Man, which was published in 1863, in Lyell’s work and career, as well as its contribution to the constitution of a new field of knowledge. This paper will first focus on Lyell’s ‘conversions’ to two central ideas, which he had previously rejected (the existence of fossil Man and the ‘transmutation of species’), then on the particular devices which he used as ‘evidences’ to prove the antiquity of man; I shall conclude by questioning the role Lyell played in the founding of two scientific disciplines, Prehistoric Archaeology and Palaeoanthropology. In this paper, I shall insist in particular on Lyell’s relationship to French science of the time, and the circumstances and modalities of a collaboration that was essential to the constitution of the Prehistory of Man.

Lyell’s ‘conversions’

In 1863, four years after the publication of Darwin’s book On the Origin of Species (1859), two major works, both published in England,

established the framework of knowledge on fossil man: T. H. Huxley’s *Evidence as to Man’s Place in Nature* and Lyell’s *The Geological Evidences of the Antiquity of Man*. Huxley’s work was the book of a young man, who was already an ardent follower of Darwin. Lyell’s book was a work of maturity. When it appeared, he was 66 years of age. In fact this late book, which was described in the first reviews as his ‘trilogy on the Antiquity of Man, Ice and Darwin’ (K. Lyell 1881, p. 362) acknowledged two major ‘conversions’ (as he himself termed them): first, the conversion to the idea of the existence of Fossil Man, which Lyell had rejected until 1853, at least, and secondly, a conversion to Darwin’s ideas on ‘the transmutation of species’.

Throughout the first half of the century, the question of the antiquity of man had focused the interests of scientists and public alike, but the defenders of ‘fossil’ or ‘antediluvian man’ were confronted with strong religious opposition. In England, the first decades of the nineteenth century had seen the revival of natural theology. The Reverend William Buckland, the first lecturer on Geology at Oxford University, believed, like Cuvier, that man had only appeared after the last ‘catastrophe’, which was identified as the biblical flood.

In France, despite the refusal of the scientific establishment led by Cuvier (1812) and his followers, several authors successively put forward arguments and evidences as to the existence of what many at the time still called the ‘Antediluvian Man’. During the 1830s, in France and Belgium, discoveries made by amateurs or marginal scientists such as Marcel de Serres in Montpellier (de Serres 1826, 1830) Tournal in the Bize Grotto of the Ariège region (Tournal 1829, 1830) and Philip Schmerling in Belgium (Schmerling 1833, 1834), tended to prove the contemporaneity of man-made tools and antediluvian animal remains, such as *Elephas primigenius*, *Rhinoceros tichorhinus*.

But these discoveries had been made in caves, and therefore their stratigraphy was open to criticism. As early as 1832, the French geologist Jules Desnoyers, then president of the Geological Society of France, had rejected the validity of archaeological and palaeontological evidence of the antiquity of man found in cave sites as he considered they could have been disturbed by people, animals, or by the action of waters and other natural elements (Desnoyers 1831–1832). Charles Lyell followed this opinion. In the second volume of his *Principles of Geology* (Lyell 1832, pp. 226–227) he wrote:

More than ordinary caution is required in reasoning on the occurrence of human remains and works of art in alluvial deposits, since the chances of error are much greater than when we have the fossil bones of the inferior animals into consideration. For the floor of caves has usually been disturbed by the aboriginal inhabitants of each country, who have used such retreats for dwelling places, or for concealment, or sepulture...

To decide whether certain relics have been introduced by man, or natural causes, into masses of transported materials, must almost always be of some difficulty, especially where all the substances, organic or inorganic, have been mixed together and consolidated into one breccia; a change soon effected by the percolation of water charged with carbonate of lime. It is not on such evidence that we shall readily be induced to admit either the high antiquity of the human race, or the recent date of certain lost species of quadrupeds.

**Fig. 1.** Profile of the Menchecourt strata by Boucher de Perthes (1847). The black horizontal bars mark the location of stone artifacts.
He maintained his position on this subject at least until the ninth edition of his *Principles of Geology*, published in 1853. For Lyell as well as for Desnoyers, this criticism of evidence found in cave sites, made from the technical point of view of the geologist, also relied on a strong refusal of the idea that Man could be as ancient as what Cuvier (1812) had named 'antediluvial animals' or that humans could be of animal descent. At that time, for Lyell and for Desnoyers, man could only be a creation of God.

In 1837, Casimir Picard, a physician from Abbeville, conducted highly detailed and rigorous studies of the stratigraphy of the lower Somme.

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Fig. 2. Maps showing the location of the main sites in the Department of Somme (a) and in the vicinity of Abbeville (b) where flint implements had been found in association with remains of extinct animals (Prestwich 1861).
river valley (Picard 1838-1840); these sites of the region of Abbeville (Fig. 2) would become, after his premature death in 1844, the site of new and fruitful research. Another amateur from Abbeville, Jacques Boucher de Perthes, followed in Picard’s footsteps and led the crusade for the official recognition of ‘antediluvial Man’ (Boucher de Perthes 1847, 1857, 1864). A customs officer of Abbeville and an enlightened amateur, Boucher de Perthes claimed that he had found evidence, as early as 1842, for the existence of ‘Antediluvial Man’ when he extracted from the clayey sands of the old riverbed of Menchecourt les Abbeville the jaw of a fossil elephant and a man-made primitive flint axe (Fig. 1). Boucher de Perthes was to have his victory, but in this the English were to play a major role. Whereas Boucher de Perthes had tried in vain to convince the French scientific establishment for over 20 years, English naturalists such as Falconer, Prestwich, Evans and Lyell, who came to Abbeville and Saint-Acheul (Fig. 3, 4), declared that Boucher de Perthes had been right: their authority was of great import among French academic authorities.

In England, important discoveries were made in this field from 1858. Brixham Cave, in Devonshire, had become the most important site of research in Prehistoric Archaeology (van Riper 1993, pp. 85-100). The excavations which were conducted between January and June 1858 led to the discovery of man-made stone tools which were shown geologically to be contemporary with the remains of large extinct animals. Although the excavations were made in a cave site, they seemed persuasive for several reasons: first, because the cave had been found untouched, with a stalagmite floor covering a thick layer of earth filled with bones of intact extinct fauna, such as Elephas and Rhinoceros, but also containing primitive stone tools which were found in the same strata; second, because the excavation itself was conducted for the first time using geological principles and relied on an ‘horizontal method’ which allowed archaeologists to obtain precise and rigorous data on the relative position of the vestiges found below the cave floor; and third, because it involved a close collaboration between trained amateurs, such as Pengelly, and professional geologists such as Falconer, Prestwich and Lyell.

These explorations at Brixham were to yield results that led the English scientists to accept the idea that man-made objects found buried in the earth could well be as ancient as deposits which Buckland had named the ‘Diluvium’ (Buckland 1837). But cave evidence was not sufficient, so the British decided to visit the French open air sites of the Somme valley, where Boucher de Perthes claimed to have found the same kind of associated remains.

In November 1858, Hugh Falconer was the first English geologist to visit Boucher de Perthes’ sites and collections at Abbeville. On 27 April 1859,
Like his predecessors at Abbeville, Lyell came back fully convinced, and ‘converted’ to the idea of fossil Man. In a memoir entitled *On the Occurrence of Works of Human Art in Post-Pliocene Deposits* (Lyell 1860), Lyell presented his defence of the idea of the antiquity of the stone implements found at Brixham and Abbeville at the 29th meeting of the British Society for the Advancement of Science, in Aberdeen in 1859. At the same session, he announced the upcoming publication of Darwin’s book, *The Origin of Species*. The framework of Lyell’s book on the antiquity of man was already laid out.

Indeed, Lyell’s book contained a second, and even more spectacular conversion, to Darwin’s ideas on ‘the transmutation of species’. Against the traditional belief which he had previously adopted as his own, Lyell now accepted the idea of the animal descent of man.

Before asserting his acceptance of Darwin’s ideas in the last four chapters of the book, Lyell pays homage to Lamarck, whom he regrets he had previously rejected (Lyell 1863, pp. 388–391).

It is now 30 years since I gave an analysis in the first edition of my ‘Principles of Geology’ (vol. ii, 1832) of the views which had been put forth by Lamarck, in the beginning of the century, on this subject... In that interval the progress made in zoology and botany... is so vast, that... what Lamarck then foretold has come to pass... Lamarck taught not only that species had been constantly undergoing changes from one geological period to another, but that there also had been a progressive advance of the organic world from the earliest to the latest times... from brute intelligence to the reasoning powers of Man.

The acceptance of Darwin’s theory of transmutation rested, in Lyell’s view, on several major arguments: first, it could explain the unity of morphological type throughout the whole organic world, (Lyell 1863, p. 413) which had been stressed by many naturalists who were proponents of the German school of transcendental morphology since the end of the eighteenth century. But these naturalists, who included the great English palaeontologist Richard Owen, had tried to account for this ‘unity of type’ through metaphysical explanations. To these morphological features, Darwin’s theory of ‘common descent through phylogeny’ offered a simpler, more materialistic elucidation. It explained not only “the existence of ‘rudimentary organs’, which appeared then as ‘being the remnants preserved by inheritance of organs which the present species once used’ (Lyell 1863, p. 413), but also many biogeographical features, among which the reason ‘why there are no mammals in islands far from continents, except bats, which can reach them
by flying', and (Lyell 1863, p.414) 'a multitude of geological facts otherwise wholly unaccounted for, as, for example, why there is generally an intimate connection between the living animals and plants of each region of the globe and the extinct fauna and flora of the post-Tertiary or Tertiary formations of the same region'.

As he accepted at last Darwin's ideas, Lyell was conscious that this acceptance would necessarily lead him to admit that man was of animal descent, and to abandon 'old and long cherished ideas, which constituted the charm to [him] of the theoretical part of the science in [his] earlier days, when [he] believed with Pascal in the theory', as Hallam terms it (see Hallam this volume), of the 'archangel ruined' (K. Lyell 1881, pp. 361–362). Nevertheless, Lyell remained wary of the concept of natural selection, and tried to preserve something of a spiritualist view of human evolution. Only with great caution did he accept Darwin's doctrine, on which he maintained reservations and objections:

...I object in my Antiquity of Man to what I there called the deification of natural selection, which I consider as a law of force quite subordinate to that variety-making or creative power to which all the wonders of the organic world must be referred. I cannot believe that Darwin or Wallace mean to dispense with that mind of which you speak as directing the forces of nature. They in fact admit that we know nothing of the power which gives rise to variation in form, colour, structure, or instinct' (K. Lyell 1881, pp. 431–432).

Although Lyell’s double conversion to the concepts of Fossil Man and of ‘transmutation of species’ opened the way to a new conceptual framework in scientific ideas, Lyell remained attached to a spiritualist view of the position of man in nature. The last pages of the book come back to natural theology.

It may be said that, so far from having a materialistic tendency, the supposed introduction into the earth at successive geological periods of life — sensation, instinct, the intelligence of the higher mammalia bordering on reason, and lastly the improvable reason of Man himself, presents us with a picture of the ever-increasing dominion of mind over matter (Lyell 1863, pp. 505–506).

The nature of evidence

Although their perspectives were quite different, Huxley’s and Lyell’s works of 1863 had one important feature in common: at this early stage of the new science, they both stressed the need to produce evidence as to the antiquity and evolution of man. However, in these two works the nature of evidence was quite different. Huxley aimed to support the idea of a continuity between great apes and man, and his evidence drew mainly on comparative anatomy and embryology. Lyell’s work relied on different types of evidence, such as archaeology, anthropology, palaeontology. But, the title of his work indicates, the main body of evidence was geological.

In Lyell’s time, the best way to prove the antiquity of man was to demonstrate the contemporaneity of different objects found in the strata of the earth, such as flint tools and fossil bones of animals known to be extinct since ‘antediluvian’ times. Only a few human fossil remains were available at this time, and most of them were highly controversial. Even the remains of the Neandertal man were often considered ‘too abnormal, too exceptional’ to serve as evidence. On the other hand, archaeological finds, such as stone tools, objects of art, found in stratigraphical association with faunistic evidence, could provide clues for the antiquity of Man. In his book, Lyell described archaeological finds starting with more recent ages, Roman, Egyptian, etc., and reaching back to the most ancient times. For the most ancient periods of prehistory, he relied on the typology of flint instruments which had been studied in France. As early as 1837, Casimir Picard, in Abbeville, had clearly stressed the distinction between chipped and polished tools, and understood the principles of ‘lamellar debitage’ which explained the method for the making of a stone ‘knife’ out of a nucleus (Picard 1836–1837). Subsequently, Boucher de Perthes (1847) placed these typological distinctions within a chronological framework and showed how the chipped handaxes of the Somme valley at Abbeville or Saint Acheul were more ancient than polished stone tools.

Vertebrate palaeontology also provided highly valuable evidence, when fossil bones had been found, as in Brixham, Menchecourt (Fig. 1) or Saint-Acheul, in association with man-made stone tools.

The remains of elephants, ... purporting to come from the superficial deposits of Scotland have been referred to Elephas primigenius. ... the occurrence of the mammoth and reindeer in the Scotch bulder clay, as both these quadrupeds are known to have been contemporary with man, favours the idea which I have already expressed, that the close of the glacial period in the Grampians may have coincided in time with the existence of man in those parts of Europe where the climate was less severe, for example in the basins of the Thames, Somme, and Seine, in which the bones of many extinct mammals are
associated with flint implements of the antique type. (Lyell 1863, pp. 252–253).

Lyell relied in particular on the finds and studies of French scientists who had led several excavations in the valley of the Somme, referring for example to the remains of Elephas primigenius, Rhinoceros tichorhinus, Equus fossilis Owen, Bos primigenius, Cervus somonensis Cuvier, C. Tarandus priscus Cuvier, Felis spelaea, Hyaena spelaea as ‘the most frequently cited as having been found in the deposits Nos. 2 and 3 at Menchecourt’ (Lyell 1863, pp. 125–126). Through the study of these remains, even finer evidence of the contemporaneity of man and extinct animal could be put into light:

M. Lartet ... after a close scrutiny of the bones sent formerly to the Paris Museum from the valley of the Somme, observed that some of them bore the evident marks of an instrument, agreeing well with incisions such as a rude flint-saw would produce. Among other bones mentioned as having thus been artificially cut, are those of a *Rhinoceros tichorhinus*, and the antlers of *Cervus somonensis*.

Lyell used this archaeological and palaeontological knowledge in order to argue the contemporaneity of fossil remains of extinct mammals and tools manufactured by man. The cover of the original edition of his book represents a primitive flint axe and mammoth molar, both in gold against a green background. The discovery of the two objects in the same ancient layer of earth was the very evidence of their contemporaneity. As a geologist, Lyell was able to make accurate reports on the precise location of these archaeological finds, and to go out into the field in order to confirm the observations of his predecessors.

Lyell relied on geological evidence to draw up a chronological and temporal framework for the existence of man through the changing climates of the last geological epochs. As an introduction to the book, he redefined terms used for divisions of Tertiary and ‘Post-Tertiary’ strata, outlining the framework for the existence of extinct mammals and early man. This chronology broke with the tradition of catastrophic events, and the ambiguous concepts of ‘diluvial’ and ‘antediluvial’ still adopted by Buckland in 1837 (Buckland 1837). The processes it threw into relief were not catastrophes, but gradual causes, among which Lyell stressed in particular the importance of the influence of glaciers, as he tried to draw a precise chronology of the relationships between the existence of fossil man and his geological environment, which he studied not only in Great Britain, but also in whole Europe:

The chronological relations of the human and glacial periods ... have taught us that the earliest signs of man’s appearance in the British Isles, hitherto detected, are of post-glacial date, in the sense of being posterior to the grand submergence of England beneath the waters of the glacial sea. ... We may now therefore inquire whether the peopling of Europe by the human race and by the mammoth and other mammalia now extinct, was brought about during this concluding phase of the glacial epoch (introduction to chapter XIII of his book on the *Antiquity of Man*).

After examining in detail the succession of glacial deposits in Europe the glacial geology of Scandinavia, of the continental ice in Greenland and the glacial period of Scotland (Lyell 1863, chap. XIII), and dating the different positions of the earliest flint implements found in France and in England, he concludes:

If we reflect on the long series of events of the post-piacene and recent periods contemplated in this chapter, it will be remarked that the time assigned to the first appearance of man, so far as our geological inquiries have yet gone, is extremely modern in relation to the age of the existing fauna and flora, and even to the time when most of the living species of animals and plants attained their actual geographical distribution. At the same time it will also be seen, that if the advent of man in Europe occurred before the close of the second continental period, and antecedently to the separation of Ireland from England and of England from the continent, the event would be sufficiently remote to cause the historical period to appear quite insignificant in duration, when compared to the antiquity of the human race (Lyell 1863, p. 289).

To archaeological, palaeontological and geological evidence, could be added anthropological inference. Eager to throw into relief the phylogenetic and cultural evolution of the human genus, Lyell also sought evidence for the common origin of modern humans by drawing a parallel between the origins and evolution of man and the development of human languages. Moreover, he underlined the fact that the stone tools found at Saint Acheul or at Brixham are similar to those of the Papuans, and may have belonged to similarly ‘primitive’ men. This heuristic parallel would be used systematically by John Lubbock in his book, significantly entitled *Pre-historic Times, as Illustrated by Ancient Remains, and the Manners and Customs of Modern Savages*, published in 1865; this work inaugurated a long tradition of the English and American school of ‘cultural evolutionism’ which flourished until the first decades of the twentieth century.
Lyell’s authority and the foundation of a discipline

Lyell’s book was not the first to give support to the notion of the antiquity of man. In France, the first two volumes of Boucher de Perthes’ *Antiquités Céltiques et Antédiluviennes* had already appeared in 1847 and 1857, respectively. The third and last volume, published the year after Lyell’s book (1864), brought together an impressive array of evidence, testimonies, drawings and maps.

Like Boucher de Perthes, Lyell accumulated in his book evidence of many varieties and natures drawn from geology, archaeology, palaeontology, anthropology and even linguistics. But whereas Boucher de Perthes never belonged to the scientific establishment and had to have the authenticity of his arguments confirmed by testimonies and recognized by the authority of other scientists, in Lyell’s work, the empirical evidence and theoretical principles needed no such justifications. As Lyell was the major authority in geology, his own expertise validated the authenticity of the evidence.

Lyell’s *Antiquity of Man* is as much a historiographic work as a scientific treatise, since it recorded for the first time in one book all the documented evidence on human antiquity since the eighteenth century: fossil and archaeological vestiges from Danish excavations which were the basis for their three-age chronology, German discoveries at Neandertal, Schmerling’s research at Engis Cave in Belgium, Boucher de Perthes’ activities in France, and excavations made by John Frere, Pengelly, Falconer, Prestwich and many others in England.

Not only did he use all these scientists as sources, but he also recounted their careers, reread their writings and restudied their archaeological, palaeontological and geological materials. He retraced their steps in the field, went to Neandertal and Engis in 1857, travelled in 1859 to Abbeville (Fig. 2) and in 1860 to Hoxne (Suffolk) where John Frere, as early as 1799, had found flint tools associated with the remains of a great unknown animal, which he claimed to be of great antiquity (Frere 1800). Here, as in many seminal treatises, historiography is used as a rhetorical device to lay the foundation for a new science, and give it a legendary and noble past.

Lyell synthesized the whole spectrum of research conducted separately in different countries and disciplines since the end of the eighteenth century, and presented himself as the founder of a new science. He was accused of having appropriated the work of his collaborators (Wilson 1996), but one could argue in his defence that, reciprocally, his own authority and expertise came in support to their claims, and helped publicize their ideas.

Lyell’s book could well be regarded, as Darwin wrote, as a ‘compilation of the highest level’. But it can also be considered as a cornerstone in the study of the prehistory of man, as it defined the new science as a necessary synthesis of several disciplines (geology, palaeontology, palaeobotany, archaeology, evolutionary biology, anthropology, linguistics...) and as a necessarily collective and international enterprise. We understand from Lyell’s book, and also from his correspondence, that the studies relating to the question of the antiquity of man led to the development of an important international network of scientists, such as Sedgwick, Darwin in England, Asa Gray, Louis Agassiz in the United States, Boucher de Perthes, Rigolot, the geologists Ravin and Buteux and the palaeontologist Edouard Lartet in France.

Moreover, Lyell’s book made prehistoric knowledge accessible to a wide public (K. Lyell 1881, p. 376). During the previous years, the themes connected to the existence of fossil man and to the evolution of species had already promoted a great interest and, as Leonard Wilson wrote (Wilson 1996) Lyell’s *Antiquity of Man* ‘enjoyed an immediate and brilliant success’, ‘within a week most of the 4000 copies of the first edition were sold’.

As he stressed the necessity for a change in the representations of the origin of man, and the necessity of a shift from religious to scientific knowledge, Lyell at age 66 appeared as an innovator who proclaimed the norms and criteria of the new knowledge, separating truth from fallacy, and establishing what Michel Foucault (1970) called a new ‘état du vrai’ (a new state of truth).

In fact, by the end of the century, the nature of
evidence in Prehistoric archaeology and in palaeoanthropology had changed. What was now at stake was not only (as in Lyell’s time) the proofs of the antiquity of man, but also the understanding of the details of his evolution and of his cultures. These disciplines had elaborated their own methods, typologies, intellectual and conceptual frameworks. The words Palaeolithic and Neolithic, coined in 1865 by John Lubbock (Lubbock 1865) to name the two most ancient periods of human Prehistory, described cultural features rather than geological layers. Similarly, the names of the different levels of the Palaeolithic coined by Gabriel de Mortillet (Mortillet 1880) – Acheuléen, Chelléen, Moustiéren, Solutrésen, Magdaléniens – were designed to identify mostly cultural assemblages.

On another hand, the ‘Moulin Quignon Affair’ (Boylan 1979; Cohen & Hublin 1989) revealed as early as the end of 1863 that geological criteria were not sufficient as evidence for the authenticity of prehistoric archaeological findings (Fig. 5). The recent human jaw, fraudulently planted in the most ancient (‘diluvial’) archaeological strata of the Somme valley, showed up the fragility of geological criteria as sole evidence to the antiquity of human remains, and the need for finer archaeological or anthropological evidence borrowed from comparative anatomy or stone tool typology and technology.

‘Even in ten years, I expect, if I live, to hear of great progress made in regard to fossil man’, Lyell wrote in 1863 (K. Lyell 1881, p. 373). Indeed, shortly after, new fossil and archaeological evidence came to light, especially in southwestern France (in the Dordogne and Vézère river valleys) and in other regions of Europe, affording a more

Fig. 5. The Moulin-Quignon Jaw and its stratigraphical location, after Boucher de Perthes (1864). In fact, this human mandible was a recent bone probably fraudulently planted into early Quaternary strata.
complex image of the anatomical features, evolution, culture and environment of fossil Hominids. Within a brief time-span, archaeological and palaeontological research into early man developed extensively to acquire immense popularity and found a place in scientific and academic institutions throughout Europe. But this would not have been possible without the events and collaborations of the years 1858–1863, which achieved what appeared to scientists and laymen alike as ‘a great and sudden revolution’. Lyell’s authority and the publication of his Geological Evidences of the Antiquity of Man had been essential for building the intellectual, institutional and international framework for the scientific researches into human origins.

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