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SERIES IN PROGRESS: ANTIQUITIES OF NATURE, NUMISMATICS AND STONE IMPLEMENTS IN THE EMERGENCE OF PREHISTORIC ARCHAEOLOGY (1776–1891)

Nathan Schlanger
Institut National de Recherches Archéologiques Préventives, Paris

What links medals and fossils, series of coins and series of stones? What are the possible connections between the practical, visual constructions of natural history and of human history? At stake here is a conception of human and natural history that can be accepted intuitively, or further documented and theorized: not only was human history a resource for the conceptualization of nature's history, whether to substantiate or deny accounts of its divine creation, but at key moments some of the devices and methodologies specifically employed to make sense of human productions may also have served as models of enquiry and good practice. They served as metonyms and blueprints for further identification, description and eventual interpretation of natural phenomena. Furthermore, the reverse also holds: some of these practices of inquiry, transformed, amplified, indeed naturalized, found their way back into the methods of human history. This was the case with mid-nineteenth-century human sciences, including anthropology, ethnology and, of particular concern here, the nascent discipline of prehistoric archaeology.

The recursive methodology to be highlighted is that of the *series*: the notion according to which, beyond any haphazard accumulation, listing or enumeration, some intelligibility may be derived from putting things together and in relation to each other, a certain order or sequence that confers on the sum an additional weight or impact, able to carry and also to display conviction. The things put together in such an exemplary way are, perhaps unexpectedly, coins, whose study proves particularly rich in hidden facets and exemplary procedures. Focusing on the decisive contribution of John Evans, numismatist, antiquarian and geologist, this paper identifies the crucial role played by his numismatic practices in the establishment of high human antiquity around 1859. It also shows how his serial approach to coins provided his follower Pitt Rivers with a prototype for the developmental sequences that so characterize the triumphant evolutionism of the later nineteenth century.

NATURE'S ANTIQUARIANS

This broad overview must start a century or so earlier, when an increasingly recognizable body of scholars, the antiquarians, deployed a range of field practices and interpretative techniques directed both at textual and at material sources. With their unbridled and highly localized passion for evocative curiosities, antiquarians had been busy enriching official records of past historical deeds, collecting and displaying

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new kinds of evidence in their obsessively assembled cabinets of curiosity.[1] While subjected to literary and graphic ridicule, this antiquarian fascination with musty decay also won notoriety and attention among eminent savants and naturalists.

Buffon, amongst others, showed his enthusiasm in his 1776 *Époques de la nature*: "Just as in civil history we consult the deeds, seek the medals and decipher the inscriptions", so in natural history, he urged, "it is necessary to excavate the archives of the globe, extract from the entrails of the earth old monuments, collect their debris and reassemble into a body of proof all the indices of the physical changes that can help us reconstruct the different ages of nature", as the only means to "place some milestones on the eternal road of time".[2] A couple of decades later, Cuvier further detailed the constituents of such a model antiquarian performance: "These antiquities of nature, if they may be so termed, will provide the physical history of the globe with monuments as useful and as reliable as ordinary antiquities provide for the political and moral history of nations."[3] Hence his strategic proclamation, in the *Discours sur les révolutions du globe,* of his advent as an "antiquarian of a new kind":

> I had to learn to restore these monuments of past upheavals [i. e. fossils], and to decipher their meaning, to collect and put together in their original order the fragments that made up these animals, to reconstruct the ancient creatures to which these fragments belonged, to recreate their proportions and characteristics, and finally to compare them to those alive today on the surface of the Earth. This was an almost unknown art, which assumed a science hardly touched on till now, that of the laws which govern the coexistence of forms between the various parts of organized beings.[4]

A later version of this concept, intended as popularization rather than innovation, is found in the palaeontologist Gideon Mantell's posthumous 1854 publication:

> Fossils have been eloquently and appropriately termed *Medals of Creation*: for as an accomplished numismatist, even when the inscription of an ancient coin is illegible, can from the half-obliterated effigy, and from the style of art, determine with precision the people by whom, and the period when, it was struck; in like manner the geologist can decipher these natural memorials, interpret the hieroglyphics with which they are inscribed, and from apparently the most insignificant relics, trace the history of beings of whom no other records are extant....[5]

No doubt these analogical ambitions served rhetorical or evocative purposes as much as they encouraged shared methodological procedures in the field, the dissection room or the display cabinet.[6] Admiration of the antiquarians, notably those concerned with coins and medals, seems to have offered two connected attractions to enterprising naturalists. First, antiquarians displayed a welcome Zadigesque sensibility to traces: marks, fragments, ruins and, by extension, strewn debris and detritus, barely perceptible or legible patterns, accidentally preserved, partial and incomplete. These were to be seen, for all their ostensible imperfections, as indices that could be brought together, restored, reconstructed and read, thus made into a

reliable body of generalizable evidence. Building on this all-important potential for *decipherment* of nature's documents, antiquarians also provided some guidelines for their *historicization*. Antiquarians were judged proficient in the materialization of unrecorded history, in relating and aligning these now potentially eloquent relics through a commonality of origin, style or customs. Relics could thus be integrated in a narrative where formal or chronological succession could not only be discerned but also taken to convey some directionality, as true "milestones on the eternal road of time" (as Buffon put it, rather better than did the catastrophist Cuvier). For the naturalists, antiquarians knew how to (re)construct the material memory of history in intelligible sequence, then put this seriality to good use.

BUYING TIME FOR CHANGE

By the mid-nineteenth century, the scholar who undoubtedly came closest to this ideal of the antiquarian-cum-naturalist was John Evans (1823–1908).[7] The conceptual and practical juxtaposition he embodied helps explain his decisive contributions to the establishment of human antiquity in 1859 and more generally to the emergent discipline of prehistoric archaeology. Evans was one of those self-assured polymathic gentlemen of science who drew their wealth from commerce. He was a paper and envelope manufacturer, his friend Joseph Prestwich (1812–96) exchanged the wine trade for a professorship of geology at Oxford, while John Lubbock (1834–1913), author of the influential *Prehistoric times* (1865), remained prosaically engaged in banking and politics. Between his business commitments, Evans made time for a busy scientific schedule in various learned societies and institutions concerned with antiquarianism, geology and the natural sciences. Of these, numismatics was his foremost passion. Here he first honed his descriptive and analytical skills and gained both confidence and enduring notoriety.

Evans's breakthrough came early, with the publication of "On the date of British coins" (1850). This brief paper argued that native British coinage had preceded Roman presence and actually derived from a 'Philippus' prototype of Greek origin, or more probably imitated from Gaul. Using judgements of design and diminishing weight, Evans placed selected coins on a plate (Figure 1) so as "to *show* how, from this prototype, by means of successive imitations of imitations, a number of new and totally distinct types *arose*, until their original was quite lost sight of". While an "exact numismatic succession" was still lacking, the reader was invited to "trace" well-oriented changes and admit that "from No. 2 to No. 3 [top centre down to right, in Figure 1] the *transition is easy* ... from this [No. 8] we *arrive* at No. 9, which is the perfect Verulam type".[8]

'Antiquarians of nature' could only applaud the ways post-Enlightenment numismatists were overcoming crude historical conjectures and arbitrary arrangements, to focus instead on the coins themselves, their type, composition, manufacture, inscriptions, letterings, design and style, so as to distinguish among them groups and families that they could order in time and space.[9] Evans's bold attempt to buy

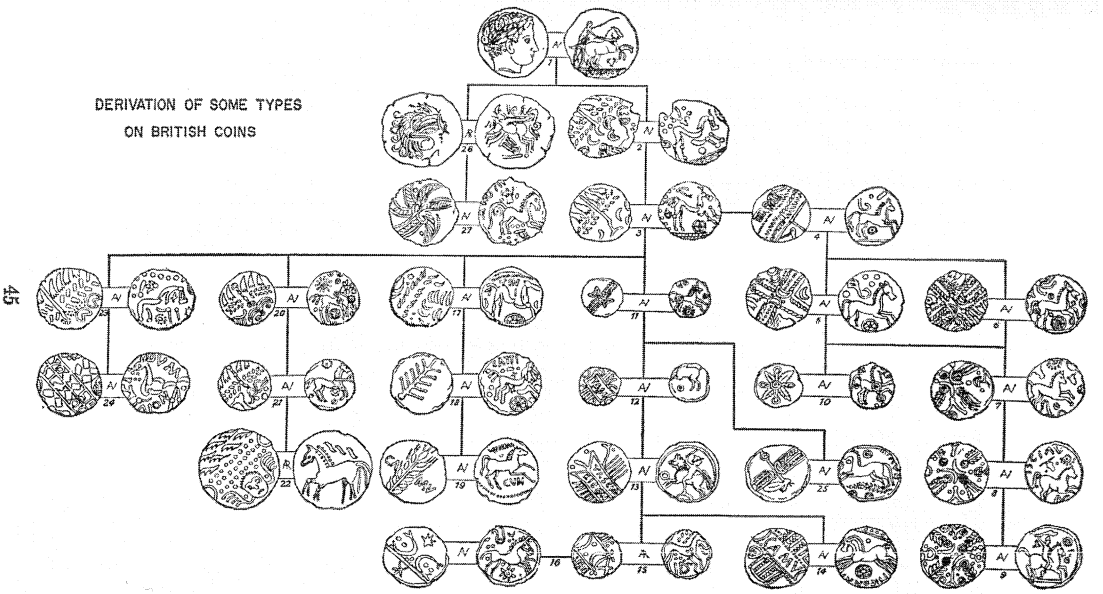

FIG. 1. "Small change over time": John Evans's derivation of some types on British coins, from Plate I of John Evans, "On the date of British coins", *Numismatic chronicle*, xii (1850).

time for pre-Roman coinage was set in this perspective. The process of transformation and "progressive degeneration" he outlined in coins, linking formal similarities and historical affinities, appears to have been an elaborate variant of the classical antiquarian view of European construction. Following the pre-eminent art historian and antiquarian Johann Joachim Winckelmann's lead, it posited the emanation of civilization from its Greek heartland northwards to the imitative barbarians. At the same time, going beyond what Buffon and especially Cuvier had envisaged, the vocabulary Evans used in his 1850 paper to describe coins and their transformations ("varieties", "derivations", "metamorphoses", "pedigrees", "descent") proved compatible with biological or organicist worldviews.

By the time he published his *Coins of the ancient Britons* in 1864 Evans could therefore cash in on the latest conceptions of types and descent, and indeed reformulate the classical historicist model of numismatic derivation in terms of a far bolder methodological and theoretical analogy: "Among barbarous nations the laws which regulate the types of coinage of this kind, consisting of successive copies of copies of a given original, are much the same as those which, according to our best naturalists [i.e. Darwin], govern the succession of types in the organic kingdom." Endorsing the general principle of the perpetuation of advantageous variations in relation to external conditions (the "struggle for existence"), Evans considered that the more persistent forms of coins would be those easiest to imitate and more symmetrical in shape: "The natural instinct of uncivilised men seem to lead to the adoption of simple yet symmetrical forms of ornament, while in all stages of culture the saving of trouble is an object of universal desire." [10]

Towards the end of this paper we will return to the paradoxical fate of what might

be called this 'transformational' or 'serial' numismatics: it was not Evans himself but rather his follower Colonel Augustus Henry Lane Fox (Pitt Rivers) who would successfully extend its application to the realms of archaeological and ethnological material arts. For the moment, let us rather take note of some oscillations of analogical polarities between natural history and human history. With their practical utility for both national wealth and imperial expansion increasingly in evidence, the natural sciences were gradually gaining the intellectual and methodological ascendancy they have effectively enjoyed ever since. One need only consider how Cuvier, who had initially turned to the antiquarians to reconstruct fossils as if they were ancient medals and ruins, now offered some crucial insights and inspiration throughout the humanist disciplines with his law of the coexistence of forms in organized beings and his feats of anatomical correlation.[11] Whereas medals had a generation earlier been models for understanding the Earth's fossil creations,[12] we now find Evans promoting the opposite claim:

> [T]he study of this class of [uninscribed] coins is to some extent like that of geology: we have no written history on which to fall back, and the annals of the past have to be reconstructed from the evidence of contemporary yet dumb witnesses disinterred from the soil. But the numismatist has none of those aids which the geologist derives from the order of superposition, and the mineral characters of the rocks in which his fossils are preserved.[13]

Short-changing numismatics to highlight its challenges was probably a tactical move here, but the polymath Evans, who knew a thing or two about stratigraphic superpositions, rocks and fossils, was also well disposed to consider geology as "elder brother" of archaeology.

Barely a couple of years earlier, Evans had indeed grasped a unique opportunity to give systematic arrangement to a rather different body of evidence. In the spring of 1859, during one of his travels to the Continent where, incidentally, he had been negotiating import duties on rags and chiffons on behalf of the Papermakers' Association, Evans stopped in Abbeville. The local customs officer there, an *ancien régime* maverick named Jacques Boucher de Crèvecoeur de Perthes, had been claiming to have found in the region's quarries some 'antediluvian' layers where fossil bones of extinct species were intermixed with human-made stone implements, called *haches* (axes), *hachettes* or *coup-de-poings*. Boucher de Perthes published these finds, to little effect, in his *Antiquités celtiques et antédiluviennes* (1847–67). Alerted by the palaeontologist Hugh Falconer, who subsequently generously renounced any priority claims to this discovery, the eminent quaternary geologist Joseph Prestwich enlisted Evans to form a visiting delegation from the Geological Society. The two men arrived together, examined the evidence at first-hand and garnered sufficient "moral and collateral testimony" to be convinced of the coexistence of genuine human-made stone implements alongside fossil bones of extinct species in undisturbed 'drift' deposits.[14] They were then able to persuade the relevant scientific authorities in France and in England, at the Society of Antiquaries and the Royal Society, of the veracity of

Boucher de Perthes's ground-breaking claims.[15]

Triumphant vindication aside, a major issue left unresolved in this canonical disciplinary account concerns the actual character of this *verification*, more specifically the *authority* through which, literally, 'truth was made'. Reasons why Boucher de Perthes himself had inspired little credence were readily proposed by the protagonists with reference to his conspicuous 'diluvial' dilettantism, the "injustice which [his] plates do to the objects described" and his "enunciation of theories which by many may have been considered as founded upon too small a basis of ascertained facts".[16] But what of his vindicators? Apart from the geologist Prestwich, what did John Evans bring with him, or do, to earn himself such instant recognition as *the* expert in the identification and description of stone implements? Given that his key 'flint implements' publications of 1860 and 1862 were the very first he had ever written on stone tools or on quaternary deposits, how did he manage to forge for himself such an unquestioned and enduring aura of authority?[17]

PHOTOGRAPHY'S TRIFLING RECOMPENSE

To trace the scientific capital produced and multiplied in this affair, one might first note how Evans and Prestwich enriched their presentation and evaluation of scientific claims by drawing on the accountancy devices that served them so well in their business dealings, whether with French chiffoniers or claret merchants. Through repeated lists and enumerations, they set down the arguments in their 1860 papers, took stock, aligned arguments, anticipated objections, "prosecuted inquiries", played devil's advocate and effectively undertook to "audit" competing claims so as meticulously to accumulate, penny by penny, a dispassionate and unassailable basis of ascertained facts so lacking in the work of Boucher de Perthes. As Evans put it some time later, adding investment banking to the book-keeping repertoire, "each successive discovery must be received in a cautious, though candid spirit, even if eventually we have to carry it to what is called in the City a 'suspense account'".[18]

With caution ever the watchword, Evans was particularly vigilant in handling those would-be antediluvian flint implements. Alongside Prestwich, who brought with him Lyell's uniformitarianist stance, Evans recognized the need to establish unambiguously the stratigraphic position and association of contested finds. In this respect both visitors fully endorsed Boucher de Perthes's long advocated 'archaeo-geological' method whereby, as a matter of principle, proof of an object's antiquity resided first and foremost in "its surrounding and the place where it was encountered", or again in "the site [*gissement*], that is the depth at which it was discovered".[19] To substantiate these *in situ* stratigraphic claims, however, Boucher de Perthes could only draw geological sections as best he could and collect somewhat desperate affidavits from illiterate workers and occasional notables. Together with the antiquarian Charles Pinsard, Evans and Prestwich took their demonstration much further with the unprecedented and, for several decades, unparalleled use of modern recording technology. On their very first visit to the Somme, with Prestwich still sceptical, it

was agreed with Boucher de Perthes and Pinsard that as soon as an implement was found *in situ*, the quarrymen would cease work and alert the English visitors. Soon enough, on 27 April 1859, a telegram summoned Prestwich and Evans by train to the Saint-Acheul quarry. Once there, as Pinsard reminisced, "It was agreed to photograph the trench, and also the *hache* on a larger dimension [*sur une plus grande dimension* (i.e. close-up)]. This operation has been achieved, and I have kept an exemplar which shows the cut [*coupé*] of the quarry, and the workers pointing their fingers at the *hache*, sunk in the mass [of sediment]". [20]

Students of 'mechanized objectivity' will appreciate this precocious example of visual demonstration, where deep in the section the picturesque Picard labourers, one proudly indicating as instructed while the other rests at ease, only corroborate the disembodied neutrality of the view (Figure 2). Since the 1840s archaeology had been one of photography's earliest fields of trial and application, but the subjects initially represented were mainly immobile monuments and masterpieces of Mediterranean civilizations encountered during the Grand Tour or oriental excavations. Here, in the quarries of the otherwise distant Somme valley, what was being pointed at, presumably with a faster exposure time, had value neither as ambiance nor as edification, but rather served as evidence visually to establish a still highly controversial claim.[21] So far as Evans and Prestwich were concerned, this "photographic sketch" made visible the undisturbed stratigraphic integrity of the geological beds, "so much so that their different characters can be recognised on a photograph of the section taken for Mr Prestwich".[22] A slightly different demonstrative use of these photographs was made in France, during the first public debate on *l'homme fossile* at the newly founded Société d'Anthropologie de Paris on 3 November 1859. In front of such luminaries as Paul Broca, L.-A. Bertillon, Isidore Geoffroy Saint-Hilaire and Boucher de Perthes himself, Georges Pouchet mentioned how the English visitors' wish to see implements *in situ* had been rewarded:

> They saw a *hache* engaged in the depth of the diluvium, and in such a situation that it could not have been introduced by fraud. They had it represented by photography, and the exactitude of M. Boucher de Perthes's opinions was thus established on a rigorous proof.[23]

As this comment indicates, this 'ostensible objectivity', recording stratigraphic context and integrity, served not only to establish the reality of fossil man as claimed by Boucher de Perthes specifically against Cuvier's catastrophism and its rearguard advocate the academician Elie de Beaumont, but also, in so doing, to insure such claims against possible acts of fraud.[24] Early archaeology, with its sudden and urgent infatuation with otherwise insignificant mineral fragments and their surrounding sediments, was beleaguered by some entrepreneurial shadiness involving both the deliberate reburial of genuine finds recovered elsewhere and the proliferation of faked items. Interestingly, while the mechanics of stone-tool manufacture were still imperfectly understood by the scholarly community, they were sufficiently well grasped by local quarry workers to develop something of a cottage industry of false

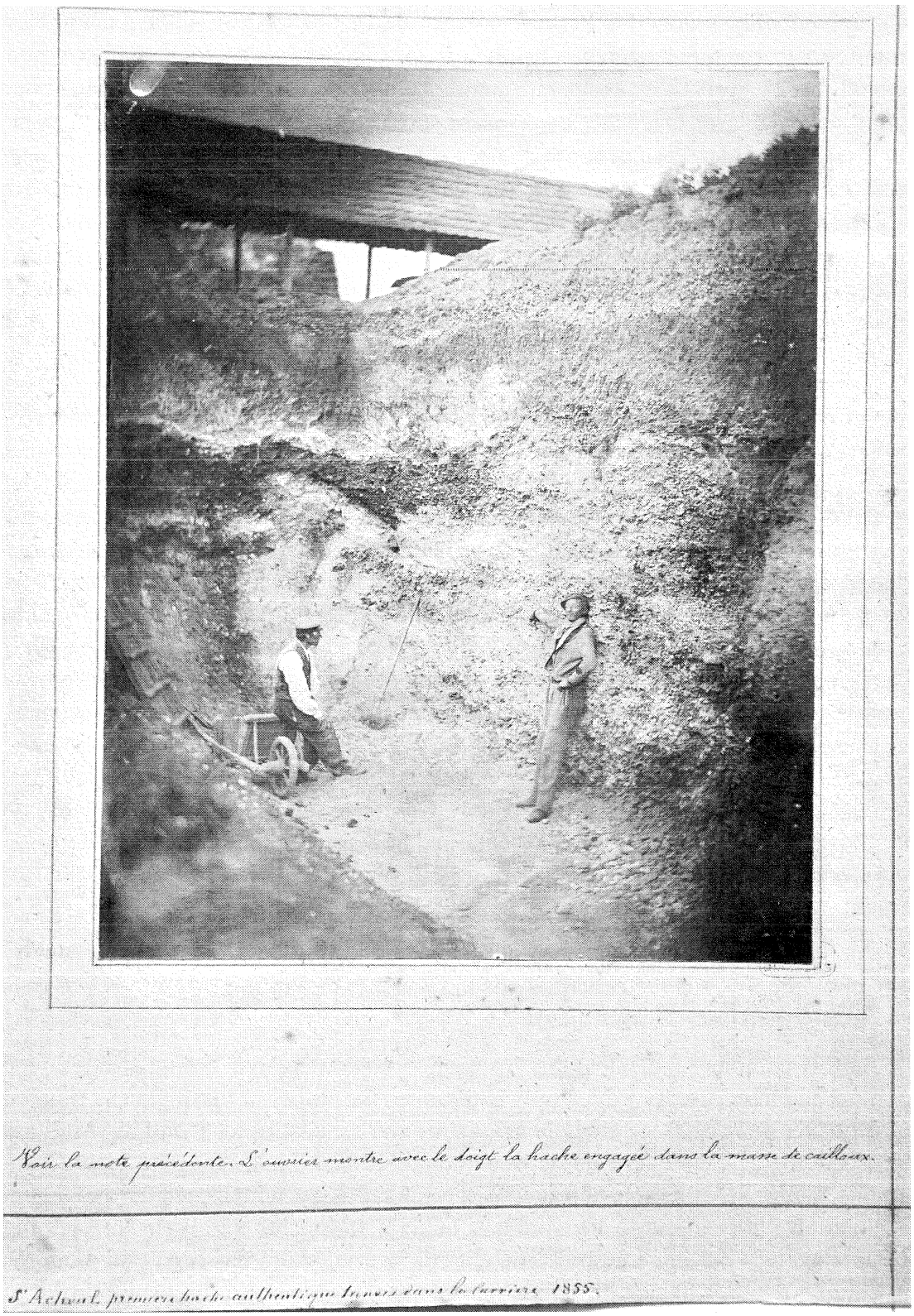

FIG. 2. "L'ouvrier montre du doigt la hache engagée dans la masse de cailloux. Saint-Acheul. Première hache authentique trouvée dans la carrière 185[9]." C. Pinsard, photograph taken for J. Prestwich, 27 April 1859. (Album Pinsard, Mss 43. Albuminated paper. Bibliothèques d'Amiens Métropole, Ms 1370.f.33. Used with kind permission.)

stone implements, a venture made all the more rewarding by the prevailing practice of paying the labourers by the find.

NUMISMATICS OF A NEW KIND

It was at this juncture, with crucial questions of subterfuge, truthfulness and labour management at stake, that John Evans proved himself the veritable linchpin of the emerging discipline of prehistoric archaeology. To some extent, he took part in and even tacitly encouraged the lucrative aspects of archaeological practice, involving quite literally the exchange of *coins for flints*. On the Pinsard photographs, for example, he noted that "besides the *langue de chat* thus seen *in situ*, the workmen in the pit supplied us with a considerable number of those implements, as well as some of the oval form, and gratefully received a trifling recompense in return". The negotiated deal stipulated that if the workmen kept their finds *in situ* and immediately alerted the visitors, then "Mr. Prestwich committed himself to compensate [them] for their loss of time, if they were not able to extract gravels elsewhere".[25] Ever the businessman, Evans readily gave this phenomenon an air of free-market inevitability: "It will perhaps be well to say a few words as to the characteristics of authenticity presented by these implements; for, *as is so universally the case where the demand for an article has exceeded the supply*, spurious imitations of them have been fabricated, and in some cases successfully passed off upon avid but unwary collectors."[26]

But there was more. In both moral and practical terms, Evans was uniquely placed, certainly far better than his geologist or naturalist colleagues, to pronounce with authority on these "characteristics of authenticity", and credibly to identify, evaluate and contain any threat of discredit and error due to fraud. Vigilance regarding counterfeits had been deeply imprinted into his scientific *habitus*, as a numismatist. Here lay the kernel of the crucial expertise that Evans was able so rapidly to exploit and then compile and consolidate into a specialized body of knowledge and practice. He became, to paraphrase Cuvier, an "antiquarian of a new kind", a *numismatist of stone implements*. Matters of fraud are in this respect a good starting point. Money being at once the pillar and idol of Victorian civil society, Evans occupied high ethical and moral grounds as one of its expert custodians. His numismatic sensitivity on matters of authenticity extended naturally from minted metal to flaked flint. Coins were certainly in Evans's mind when he first visited and vindicated Boucher de Perthes, as he took the opportunity to purchase in Amiens a second-brass Magnentius for his collection. He also drew explicitly on specialized numismatic vocabulary to identify criteria of authenticity: "many of the implements have a coating of carbonate of lime forming an adherent incrustation upon them: this, as M. Douchet has already remarked, is for those weapons what the patina is for bronze coins and statues, a proof of their antiquity."[27] Numismatists' fascination with fraud and its detection undoubtedly went further than most. Unlike antiquarian staples such as vases and weapons, more than mere loss of face was at stake. Indeed coins have been altered, imitated and faked throughout their history not simply as 'collectibles', but also, much more

frequently and insidiously, as elements of common currency issued and transacted within existing monetary economies. Evans's pronouncements on matters of fraud were thus readily welcomed as befitting a veritable 'chief inspector of forgeries' of this newly counterfeitable medium, flint.[28]

From fake to fabrication: precisely because the whole economic system demanded the unambiguous authentication of *bona fide* currencies, numismatic forgeries actually attracted considerable attention in their own right as a means to understand legitimate production. Evans's precocious recourse to experimental flint knapping, his replications, demonstrations and appreciation of the skills of the notorious 'Flint Jack' can be understood in this light, following the the numismatic imperative to distinguish fake from genuine. At the same time, in addition to their initial critical role, such dedicated observations, experiments and analogies would also soon provide heuristic tools for understanding ancient modes of manufacture and workmanship on their own terms. Evans readily extended this coin-based technological attentiveness to stone implements, as we will see below. With regards to terminology, and besides references to bronze "patina", Evans suggestively talked of "the best-wrought forms of flint implements" and of "flakes … struck off, and wrought into shape". While the notion of 'wrought' did not catch on beyond its metallurgical basis, that of 'striking' is nowadays ubiquitous: it may not be Evans who pioneered its application to the stone medium, but his work clearly shows striking affinities, so to speak, in the conception of coins and flints. [29]

Such had been Evans's brief when he joined Prestwich's French jaunt, to consider the flint implements and weapons discovered there "from an antiquarian rather than a geological point of view", seeking in them "resemblances and differences which may consist in material, form or workmanship".[30] His mission was effectively to study and classify the flint implements as if they were coins, subjecting the former as he did the latter to systematic study and description according to "type, weight, and workmanship".[31] Besides this attention to fraud and fabrication, Evans also brought from numismatics the art of consistent, normalized, disciplined scrutiny. Precisely because, in comparison with the antiquarian's usually more visually arresting bric-a-brac, coins appeared so small, plain and similar to one another even at close range, there were no insights to be gained from their first appraisal or sweeping overview. To make sense of coins it was necessary to isolate and track significant features so as to refer them to their 'type' (as etched on the dies from which they had been stamped), then sort them into 'issues' and 'species' and show possible affinities between them. Once cleaned and prepared, each coin had to be examined individually, methodically and step by step, then submitted to the same descriptive gaze and criteria in order to get their measure, to assess their condition and appraise their eventual specificities, markings or defects.

Since the early nineteenth-century revival of numismatics, this protocol of precision was accompanied by particularly accurate and systematized illustrations of obverse and reverse. Their lavish, almost ostentatious, wealth of detail served a double purpose. One, more conventional, was to ensure their quality as reliable

and comparable 'proxies' when printed, bound, circulated and consulted as 'paper museums', thus reinforcing and soon replacing the more expensive and uncertain practice of plaster or sulphur casts. The other purpose, more specific in comparison with other antiquarian images, was to record on paper the singular identity of each and every exemplar depicted. Coins, after all, are by definition already imprinted, and thus offer neither literal nor metaphorical space for any secondary inscriptions or metadata recording: no handles or knobs to which to attach some label, no free surfaces, convenient concavities or unglazed reserves on which to ink even the most succinct or discrete indication. Any records of coins, any *sylloge*, *corpus*, inventory or catalogue, had therefore to be illustrated with etchings, engravings and gradually, from the 1870s onwards, photographic reproductions, which would be accurate enough, reliable and readily retrievable, so as securely to link the specific piece under study to its detached, contingent yet constituent information.[32] Besides the prevention of theft and of collection dispersal, this image-mediated linkage related first and foremost to the specific *provenance* of the coins. Provenance embraced the layer, feature, site or, failing that, the locality whence they had been recovered, in some archaeological contexts, as isolated stray finds or as part of some deliberately buried treasures. This, in turn, made it possible to anchor coins' formal properties in space and time, thus enable them to fulfil their expected role as historical documents, as the "metallic mirrors" of the ancient world.[33]

DICHOTOMY AND VARIABILITY IN THE STONE AGE

The same goes, *mutatis mutandis*, for stone implements. We can now better appreciate the export of specific practices and expectations from one antiquarian domain to another in many of Evans's publications, beginning with his very first reports from the Somme valley and culminating with the monumental 1872 *Ancient stone implements, weapons, and ornaments, of Great Britain*.[34] Besides the resolutely empiricist stance and heavy descriptive prose characteristic of Victorian science, the study of stone implements evinced the same insistence on provenance, including the meticulous collation and maintenance of a country-wide gazetteer, where each discovery site was localized and recorded so as, it was hoped, to increase its historical significance. Illustrations of implements were executed with scrupulous accuracy, illustrations about which Evans confided that, if nothing else, they would be a lasting credit to his labours.[35] There was also recourse to similar editorial practices, distinct subject matter and topographical indices, use of smaller fonts for detailed descriptions and enrolment of the same family-members for correcting proofs, across what Evans apparently considered as his 'Ancient' triptych of *Coins* (1864), *Stone implements* (1872) and *Bronze implements* (1881).[36]

Beyond disciplinary techniques, numismatic affinities also appeared in what Evans and his peers considered to be the crowning achievement of his investigations: his *classification* of stone implements. Ever since his first visit to the Somme valley, alongside his endeavours to document and photograph their authenticity *in situ*,

Evans focused his attentions on the 'character' of the candidate exemplars and their possible position within some broader chronological framework. Using a restricted set of descriptive criteria related to the extension and shape of the cutting edge, he proposed to distinguish and classify these Drift implements under three main headings or types: "1. Flint flakes, apparently intended for arrow-heads or knives. 2. Pointed weapons, analogous to lance or spear heads. 3. Oval or almond-shaped implements presenting a cutting edge all round."[37]

In formal terms Evans's proposal supplanted vague foreign vernaculars like *amande* or *langue de chat* with a semblance of morphological rigour (see Figures 3 and 4). It also served, more surreptitiously, to instil and legitimize the concept of the 'Stone Age' as the most ancient period in the then still-contested tripartite scheme of Stone, Bronze and Iron Ages.[38] Through its general structure and interpretative potential, this classificatory framework immediately posited a structuring *dichotomy* within the Stone Age (whose acceptance it therefore enjoined) between the Celt and the Drift periods. In his 1859 mission statement for Abbeville, Evans saw it as his most important task

> to point out wherein these implements from the drift resemble or differ from those in some degree analogous with them, which are so frequently found in this country and on the Continent, and are usually considered to be the work of the primitive, or as for convenience sake I will call them, the Celtic inhabitants of this part of Europe.[39]

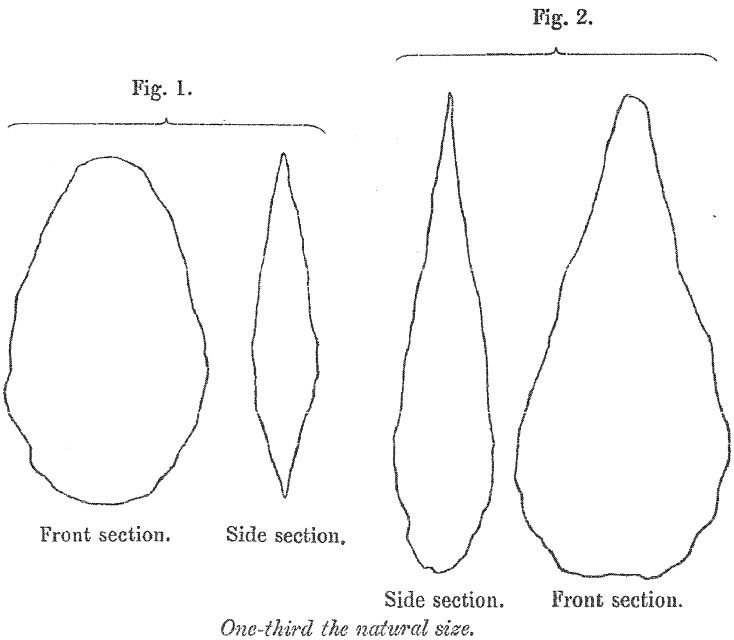

FIG. 3. Evans's classification of stone implements as presented in 1859 by Joseph Prestwich in "On the occurrence of flint-implements, associated with the remains of animals of extinct species in beds of a late geological period, in France at Amiens and Abbeville, and in England at Hoxne", *Philosophical transactions of the Royal Society*, cl (1860), [Abstract]. 1 – Oval implement, 2 – Pointed implement.

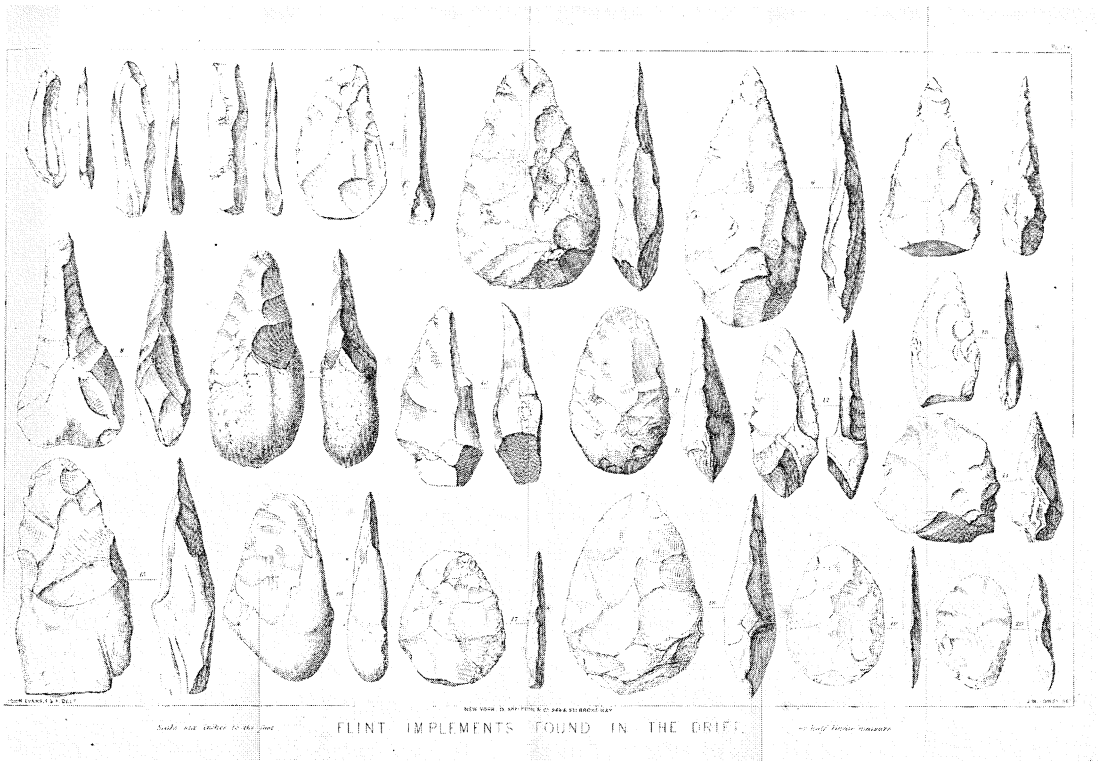

FIG. 4. Evans's classification of stone implements from the Drift. Plate IV in John Evans, "Account of some further discoveries of flint implements in the Drift on the Continent and in England", *Archaeologia*, xxxix (1862), 57–84. Items 1 to 4 would be 'flakes', 5 to 10 'pointed', and 11 to 20 'oval'.

This Celt / Drift distinction, which Evans maintained throughout his career, was soon thereafter presented to posterity in terms of 'Neolithic' and 'Palaeolithic'.[40] Its most tangible expression lay in the simultaneously technological and tactile differentiation of stone implements, between those 'polished' and 'unpolished'. Such a differentiation would have been all the more recognizable for Evans since it echoed that then prevailing in numismatics between 'inscribed' and 'uninscribed' coins, those 'epigraphic' and those 'anepigraphous'.[41] In any case, given that the selected implement classes had primarily a diagnostic role in terms of presence or absence, Evans was at least initially inclined to dismiss the class of 'flakes' as being "not of much importance in the present branch of our inquiry; because, granting them to be of human work and not the result of accident, there is little by which to distinguish them from similar implements of more recent date [i.e. Celt]".[42] The same dichotomous outlook explains why the 'pointed' and 'oval' implement classes were attributed to the Drift, *en bloc*, making it very difficult to envisage any possible chronological differentiation, let alone change, *within* that period. Evans had difficulty even in imagining that some difference might eventually be found between the lower and higher levels of the Somme:

> It appears to me *possible* that an abundance of flakes and knives, especially the more finished kind, like Plate IV. fig 4, and of the oval-shaped implements, with

> a cutting edge all round, chipped out with considerable amount of skill and care, may prove to be the characteristics of the lower and more arenaceous beds of drift, such as are found at Menchecourt and Montiers; and if so, that we should find that there are two drift periods distinguishable by the positions of their beds, and by the character of the implements they contain. I merely mention this as a suggestion, it may be of the vaguest kind, but still as showing the necessity of co-operation of archaeologists and geologists on this the neutral ground between the two sciences.[43]

Dichotomy and stratigraphy aside, Evans's candid misgivings reflect his interpretation of the observed *variability* among the Drift stone implements. Remarkably, no sooner had he identified supposedly clear-cut and diagnostic classes of implements, 'pointed' and 'oval', than he set out to tone down and belittle their distinctions. These implements may "for convenience sake be classed under three heads, though there is so much variety among them that the classes, especially the second and the third, may be said to blend or run one into the other". This made it difficult literally and figuratively to draw any "decided line of demarcation" between the acute and the round-pointed forms, given that so many specimens "occupied an intermediate position". "What character of point an implement would have" was in fact "to a considerable extent a matter of accident" related to difficulties posed by the nature and quality of the raw material, such that some particularly roughly chipped and "barbarous" implements might appear "to be either the result of fruitless attempts to imitate the more finished implements, or else to have been so hastily made, that more attention was paid to producing a point or a cutting edge than to symmetry of form".[44]

For better or worse, this perception of variability bears the mark of numismatics: not simply because it revelled in the systematic scrutiny of magnified micro-scale traits, but also because it gave this variability ready-made intelligibility in terms of *minting* considerations. Until the advent of the coin press during the Renaissance, the technical processes of coin manufacture meant that no exemplars produced were ever exactly identical. Variables included the specific properties of the bullion refined and alloyed, the weight, shape and conditioning of the blanks (flans), their positioning and centring on the obverse (anvil) die, the placement and orientation of the reverse (punch) die above them, the force, angle and repetition of the striking blow, and so on. The whole repertoire was repeated for each coin struck from each die used as they wore down and cracked and then again for each 'type' that the mint authorities decreed be created or imitated. Evans described the implications of this variability:

> It must not be supposed that in these five plates I have given representations of all the varieties of type which the uninscribed gold coins present: the mere alteration of the position of the flan with regard to the dies (which were always larger than the coins struck from them), causes a considerable difference in the appearance of coins even from the same dies; and besides this, there are numerous minor details which vary on different coins of much the same general type, some of which I have occasionally mentioned in the descriptions. In one or two instances,

> I have placed among the uninscribed coins some which in reality belong to the inscribed series, but which, from their not having been properly placed on the dies, do not show their legends.[45]

This manufacturing process represents an almost perfect Platonic model, allowing one to grasp perceptible phenomenal diversity among actual exemplars while at the same time securing their status as stable general categories. Each coin produced in a series was but a single point in a vast statistical cloud clustered around a central absence: often deliberately so, insofar as obsolete dies were usually destroyed to avoid unauthorized reuse. This interpretative span between the ideal type as etched in the dies by the commissioned engraver and the variations inevitably hammered into each exemplar by the mint workers is also perceptible in Evans's classification and interpretation of stone implements. As with coins, so with flints,

> it seems doubtful whether it is worth while to insist much on these subdivisions of form, many of which must, no doubt, have resulted from the manner in which the flint happened to break during the process of manufacture. Though, therefore, I have here attempted a somewhat detailed classification, I by no means wish it to be supposed that I consider each form of implement to have been specially made to serve some special requirement, as is the case with many of the tools and weapons of the present day. I am far more ready to think that only two main divisions can be established, though even these may be said to shade off into each other; I mean pointed implements for piercing, digging, or boring, and sharp-edged implements for cutting or scraping.[46]

Thus Evans's ancient stone implements were put in a state of doubt by this numismatic interpretation. The variability these implements displayed was almost exclusively considered as accidental, attributed (beyond broad hypothetical functional distinctions) to such situational factors as the quality of the raw material or knapping imperfections. This left little scope for other possible interpretations in terms of change, evolution or history. Engrossed as he was in deploying numismatic minutiae within the nominally geological problem of high human antiquity, Evans all but forgot or deemed irrelevant the 'serial' transformational approach he had otherwise so brilliantly pioneered in the study of ancient British coinage.

PITT RIVERS'S SERIAL PROGRESSION

The man who knew how to pick up and connect the pieces, draw together the intelligibility of coins and of stone implements, then enshrine the ensuing vision of serial progression in his ideal museum, was General Augustus Henry Lane Fox Pitt Rivers (1827–1900). Of the many facets of Pitt Rivers's work, the one that concerns us here bestrides (and too often falls between) his well-known contributions to archaeological practice, broadly defined, and to ethnographic theory, collection and display.[47] Once his initial interests in firearm design developed into a totalizing quest for uninterrupted continuity in the material arts, Pitt Rivers gained access to such congenial circles as the

Society of Antiquaries and the Ethnological Society of London. He acted as secretary to the third International Congress for Prehistoric Archaeology and Anthropology (Norwich and London, 1868) which included among its discussion themes the search for "Indications of continuous progress in arts and civilisation during successive prehistoric periods".[48] Upon these social and institutional dispositions he could readily call on Evans's flintknapping expertise and specifically request his presence and advice at his Cissbury hillfort excavations in 1867 and 1868.[49] Although Pitt Rivers himself went on to develop some rather idiosyncratic interpretations, his recognition of Evans's authoritative standing in stone implement studies was widely shared.[50]

In contrast, the General was unique in perceiving the exemplary potential of Evans's *serial* numismatics for ethnology and prehistoric archaeology. Already in his 1868 programmatic paper, Pitt Rivers had proclaimed that human progress did not result from *ex nihilo* individual invention but rather from continuous imitation and variation through such agencies as "unconscious selection" and "errors in successive copies". As a prime example of this latter process, continued Pitt Rivers, "Mr. Evans has shown in his work on the 'Coins of the Ancient Britons' (p. 167) how the head of Medusa, copied originally from a Greek coin, was made to pass through a series of apparently meaningless hieroglyphics, in which the original head was quite lost, and was ultimately converted into a chariot and four".[51] In fact this numismatic transformation became for Pitt Rivers a canonical example that he expanded and applied throughout his subsequent publications. In 1872, for example, he explicitly called on Evans's coins to discuss (and illustrate — see Figures 5 and 6) changes in the ornament of New Ireland paddles, concluding that:

> we have here [with the paddles] a complete parallel to the transformations observable on the British coins, showing with what close analogy the minds of men in the same condition of culture, though of widely different races, obey the same laws, and are subject to the same causes of variation and continuity in the development of their arts. [52]

So important was this coin-based demonstration for Pitt Rivers that he specifically sought permission to include one of Evans's numismatic diagrams in his own publications, otherwise essentially illustrated with plates of his own making (Figure 6).[53] Finally, as late as 1891, when Pitt Rivers assembled his second collection at Farnham to educate the labouring classes, the diagrams he chose for illustrating his museum's 'typological' principle included one on "the degradation of silver coins, from the stater of Philip of Macedon".[54]

With this unprecedented combination of flintknapping *nous* and numismatic *exemplum*, Pitt Rivers felt well equipped to retrace, in "Primitive warfare II" (1868), the laws of variation and sequence since the "earliest records of human workmanship", namely the stone implements of the Stone Age. Over several tightly argued pages he undertook to demonstrate the reality and mechanisms of the "Transition from the Drift to the Celt Type", effectively enlisting Evans's 'serial' numismatic approach to undermine Evans's own beliefs, as we saw above, regarding dichotomy and vari-

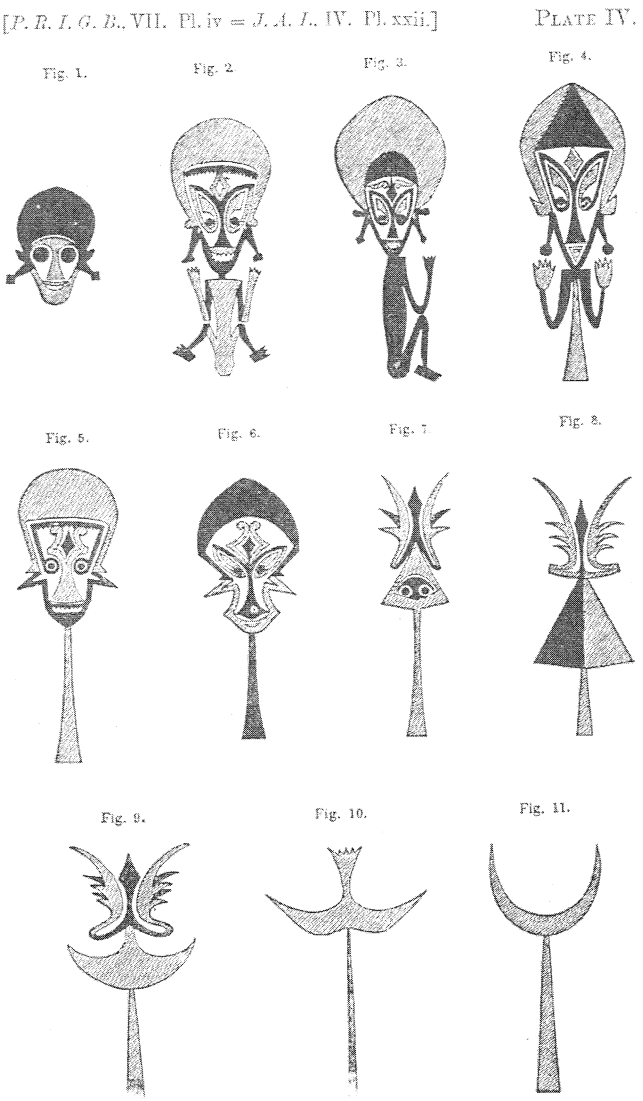

FIG. 5. "Ornamentation of New Ireland paddles, showing the transition of form", Plate IV in Pitt Rivers, "On the principles of classification adopted in the arrangement of his anthropological collection, now exhibited in the Bethnal Green Museum", *Journal of the Anthropological Institute*, iv (1874), reproduced from Pitt Rivers, *The evolution of culture and other essays* (Oxford, 1906).

ability in Drift implements. Conscious of the novelty of his argument, Pitt Rivers took care to detail his evidence and procedures:

> I have arranged upon diagram No. 1 (Plate XII) a series of specimens of the same type from nearly every part of the globe. All the figures given in these diagrams are traced from the implements themselves, and reduced by photography; they may therefore be regarded as facsimiles, a point of great importance when our subject has to deal with the minute gradations of difference observable between them.[55]

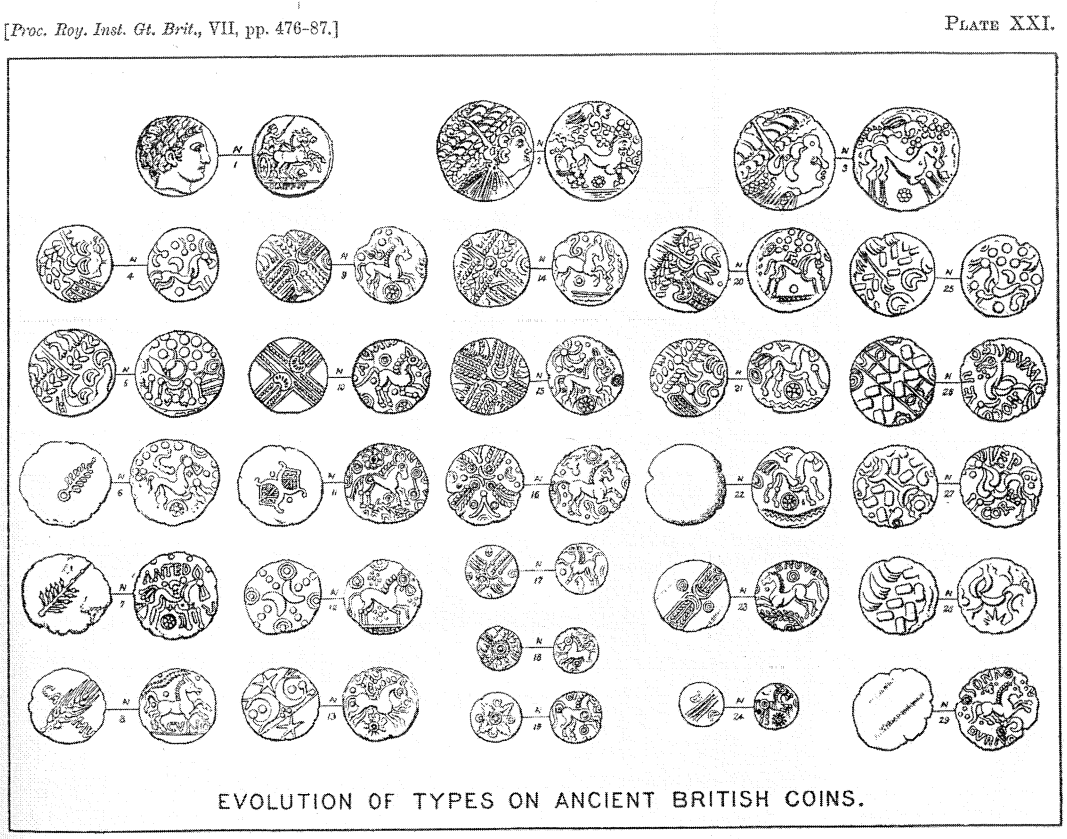

FIG. 6. "Evolution of types on ancient British coins", reproduced from John Evans, "The coinage of the Ancient Britons and natural selection", *Notices of the proceedings of the Royal Institution of Great Britain*, vii (1875), as Plate XXI in Pitt Rivers, "On the principles of classification adopted in the arrangement of his anthropological collection, now exhibited in the Bethnal Green Museum", *Journal of the Anthropological Institute*, iv (1874), here reproduced from Pitt Rivers, *The evolution of culture and other essays* (Oxford, 1906).

The series began (items 1–11 in Figure 7) with the Drift type, with specimens from Saint-Acheul, from England and Europe, and beyond from Babylonia, Madras and the Cape of Good Hope. Instead of their usual classification as 'pointed' and 'oval', Pitt Rivers proposed "a distinction more clearly embodying a principle of progress" according to their hafting potential (base left rough, items 1–7, or worked, items 8–11). It was however form (or rather outline) that let him to conjecture a gradual transition from the Drift to the Celt type (beginning with item 12, from Cissbury): "By selecting specimens, and arranging them in order from left to right, I have endeavoured to trace the transition from the drift type to the almond-shaped celt type", showing how "almost imperceptibly" they pass through "numerous gradations of form", so that, "in casting the eye from left to right along the upper row of diagram No. 1 (Plate XII), it will puzzle the acutest observer to determine where the Drift type ends, and that of the celt begins".[56] Upon this visual sweep, Pitt Rivers appears to have touched on the essence of seriality:

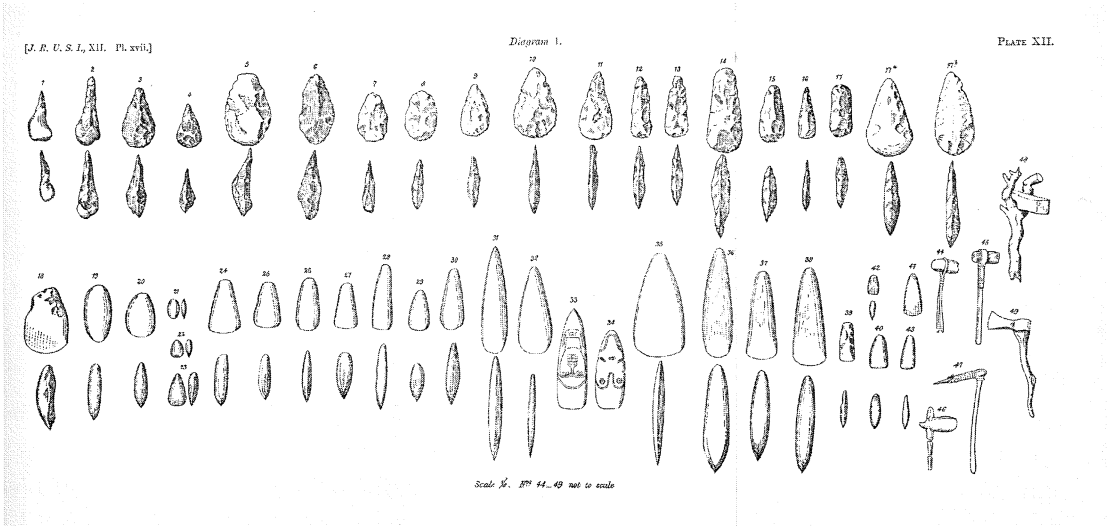

FIG. 7. "Transition from the Drift to the Celt type", Plate XII (diagram 1) in Pitt Rivers, "Primitive warfare, Part II: On the resemblance of the weapons of early man, their variation, continuity, and development of form", *Journal of the Royal United Services Institution*, xii (1868), reproduced from Pitt Rivers, *The evolution of culture and other essays* (Oxford, 1906).

> I have dealt somewhat at length upon this part of my subject, owing to the circumstance of its presenting some features of novelty in the study of flint implements, and being therefore open to criticism on the part of those who are more favourable to the principles of classification than of continuity, with all the important concomitants, of division *versus* unity, which those principles involve. [57]

CONCLUSION: SERIAL CONTINUITIES IN PREHISTORIC ARCHAEOLOGY

Evans could not let such claims go unchallenged. His 1872 *Ancient stone implements* included some specific rejoinders to Pitt Rivers.[58] The radical distinction between Drift and Celt implements was adamantly maintained on technological, morphological and functional grounds. Far from "affording every link of connexion", the supposedly transitional types identified by Pitt Rivers at Cissbury were explicitly rejected as mere coincidence among a mass of unmistakably Neolithic forms. Evans also called on visual impressions, but in his case to assert that "a glance at the figure will at once show how different in character they are", in shape and in mode of manufacture. They exhibited a "complete gap between the River-drift and the Surface Stone Periods, so far as any intermediate forms of implements are concerned", a gap that in turn reinforced the historicist hypothesis of a complete population replacement between the Palaeolithic and Neolithic inhabitants of the country.[59]

Together with that, Evans remained ambivalent about the wider expectations of continuous evolution championed by Pitt Rivers. Attentive as he was to variability in stone implements, we have already recorded his predilection, derived from numismatics, for expedient interpretations in terms of manufacture or of function rather than history and development. He thus considered it "unwarrantable" (with respect

to flint arrowheads) "to attempt any chronological arrangement founded upon mere form".[60] Such scepticism towards the reality of progressive change within the Stone Age and the possibility of its demonstration was in fact widespread among many of Evans's contemporaries, such as the Duke of Argyll who considered flint implements "a very poor index of civilisation", Charles Lyell who asserted that the aboriginal implements of all times and countries "seem nearly all alike in rudeness, and very uniform in general character", or William Boyd Dawkins who cast doubts on "the principle of classification by the relative rudeness [that] assumes that the progress of man has been gradual, and that the ruder implements are therefore the older".[61] In fact, so far as prehistoric archaeology writ large is concerned, the further accumulation of systematically documented archaeological and stratigraphic evidence and, just as importantly, better honed propositions regarding the forward march of civilization, in tune with the historical expectations and exigencies of late nineteenth-century industrialized nation states, were required before for stone implements were recognized as reliable markers of Palaeolithic progress, with its succession of Acheulean, Mousterian and Aurignacian periods as we know them today.[62]

Leaving these disciplinary developments for consideration elsewhere, let us conclude with an appraisal of Evans's simultaneously transitional and transformational role. Reticent as he may have been in endorsing the uncompromisingly progressive zeal of Pitt Rivers's claims, Evans could nevertheless scarcely reject outright any suggestions of sequence and directionality in archaeological remains. He thus granted that the Drift implements may "pass imperceptibly from the tongue-shaped, at the one end of the series, into the oval or almond-shaped implements, presenting a cutting edge all around, at the other".[63] His pioneering approach had indeed been at the very origin of such a perception, or had at least had served as an influential prototype in making seriality topical and workable, as both goal and practice, across relevant domains of inquiry. From 1850, with the successive imitation of imitations of the Macedonian stater, Evans's sensitivity towards minute changes in forms and ornaments, models and copies, originals and derivations, was primarily that of the antiquarian, seeking to reconstruct the distribution and chronology of pre-Roman coinage. By the following decade, shifts in the cognitive and institutional ascendancy of the natural sciences heralded a changing tide of analogical and methodological appropriations, from natural history to human history, from palaeontology to archaeology, from strata and fossil bones *back*, as it were, to ancient medals and implements. From 1864 onwards Evans could therefore easily recast his numismatic demonstration from an initially antiquarian pattern of degeneration from some Greek genius into a naturalized process of descent with modification. As he put it in the 1890 *Supplement* to *The coins of the Ancient Britons*:

> In fact, I attempted [in 1850] to apply the principles of 'evolution' and 'natural selection' to numismatic inquires; and when, ten years afterwards, Darwin's great work on the origins of species was published, I found that I had been approaching the study of the barbaric art on much the same lines as those which he had conducted in his far more important inquiries into the hidden secrets of nature.[64]

Drawing legitimacy from this retrospective realignment, Evans readily recognized the wider heuristic potential of his own approach to "barbaric art". His serial method of inquiry, so he recorded, had been found of service not only to other students of British coins, or to Dr Hans Hildebrand, who "has followed the same method in investigating the history of some of the earliest of the Scandinavian coins", but also, significantly, to General Pitt Rivers who, "in his ethnological researches ... has found, in the form and ornamentation of implements, an almost analogous development with that which has prevailed among coins".[65]

Thus the cycle of 'series in progress' traced through this paper becomes a dynamic spiral. Whatever the utility of Darwinism for the study of coins and medals, it is clear that Evans's numismatics played a crucial role in bringing seriality into late nineteenth-century evolutionary thinking, with its concomitant technologies of display and visualization.[66] Explicitly with Pitt Rivers, and in his wake his followers Henry Balfour and Alfred Cort Haddon,[67] and soon thereafter more implicitly, by the successive imitation of imitations, so to speak, we have seen the introduction into the new sciences of humankind of a practice and discourse of seriality which owes its pertinence and intelligibility to the art-historical historicism of Winckelmann as much as to the more enticing Darwinian-cum-Lamarckian evolutionism of the age.

ACKNOWLEDGEMENTS

While many ideas in this paper will need to be explored further, I have already benefited from various insights and feedback from several colleagues, including François de Callataÿ, Noël Coye, Vincent Guichard, Marc-Antoine Kaeser and Alain Schnapp, and also in the course of seminar lectures at the Department of Archaeology, Southampton, the HARN History of Archaeology Network meeting at Birkbeck College London, and the Stanford Archaeology Center in the framework of the developing 'Antiquarian' project. I also owe much to the stimulation provided during the seminar on "Seriality and scientific objects in the age of revolution", with Nick Hopwood and Jim Secord, and of course to Simon Schaffer, for the inspiration and the perfect dosage of patience and pace.

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5. Gideon Mantell, *The medals of creation or, first lessons in geology, and the study of organic remains* (London, 1854), i, 17, original emphasis.
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10. John Evans, *The coins of the Ancient Britons, arranged and described by John Evans F.S.A., F.G.S. and engraved by F. W. Fairholt, F.S.A.* (London, 1864), 27–28. Evans returned to 'natural selection' with reference to Darwin in publications such as "The coinage of the Ancient Britons and natural selection", *Notices of the Proceedings of the Royal Institution of Great Britain*, vii (1875), 476–87, and *The coins of the Ancient Britons: Supplement* (London, 1890).
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13. Evans, *Coins* (ref. 10), 34–5.
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20. Charles Pinsard, "La première hache en pierre authentiquement découverte à Saint-Acheul", manuscript note to the photographs in Album Pinsard, Amiens, reproduced in E. de Bussac (ed.), *1859, naissance de la préhistoire: Récits des premiers témoins* (Clermont-Ferrand, 1999), 251–5, p. 254. This *in situ* flint handaxe has recently been identified in the Prestwich collection (Cat. Num. E 5109) at the Natural History Museum by Clive Gamble and Robert Kruszynski, "John Evans, Joseph Prestwich and the stone that shattered the time barrier", *Antiquity*, lxxxiii (2009), 461–75.
21. This photograph and its accompanying close-up have been rediscovered in the Album Pinsard and published by M. Agache-Lecat, "Boucher de Perthes vue par une Anglaise", *Bulletin de la Société d'Émulation Historique et Littéraire d'Abbeville*, xxiii (1972), 232–40, p. 233. Compare de Bussac, *op. cit.* (ref. 20); and Serge Lewuillon, "Positif/négatif: Les antiquités nationales,

l'estampe et la photographie", *Les nouvelles de l'archéologie*, cxiii (2008), 37–45, pp. 39ff. See also Serge Lewuillon, "Archaeological illustrations: A new development in 19th century science", *Antiquity*, lxxvi (2002), 223–34; Gamble and Kruszynski, *op. cit.* (ref. 20); and Gabrielle Feyler, "Contribution à l'histoire des origines de la photographie archéologique: 1839–1880", *Mélanges de l'École Française de Rome: Antiquité*, xcix (1987), 1019–47. Feyler quotes (p. 1029) the orientalist Victor Place (1851) who took photographs of ongoing *in situ* discoveries for his patrons in France: "one can from now on dispense with an illustrator, since what is at stake here is to bring back copies that would be exact rather than artistic." See also Claire Lyons, *Antiquity & photography: Early views of ancient Mediterranean sites* (London, 2005), and for subsequent developments, Schlanger and Nordbladh, *op. cit.* (ref. 11), 164–230.

22. Evans wrote next day to his fiancée that "We had a photographer with us to take a view of it so as to corroborate our testimony" (Joan Evans, *op. cit.* (ref. 7), 102), and some time later to the Society of Antiquaries (Evans, "Flint implements" (ref. 16), 16). See also Prestwich, "Flint implements" (ref. 15), 291–2, and Joseph Prestwich, "On the occurrence of flint-implements, associated with the remains of extinct mammalia, in undisturbed beds of a late geological period [abstract]", *Proceedings of the Royal Society of London*, x (1860), 50–9, p. 52. Lyell noted that Prestwich's Royal Society report was "accompanied by a photograph showing the position of the flint tool *in situ* before it was removed from its matrix": Charles Lyell, *The geological evidences of the antiquity of man* (London, 1862), 103; Gamble and Kruszynski, *op. cit.* (ref. 20). See also Christopher Evans, "'Delineating objects': Nineteenth-century antiquarian culture and the project of archaeology", in Pearce (ed.), *op. cit.* (ref. 7), 267–303, pp. 271ff., 283.
23. Georges Pouchet, "Sur les débris de l'industrie humaine, attestant l'existence d'une race d'hommes contemporaine des animaux perdus", session of 3 November 1859, *Bulletin de la Société Anthropologique de Paris*, i (1860), 42–53, p. 44 (followed by "Geoffroy Saint-Hilaire — sur l'homme fossile", and [Broca P.], "Reprise de la discussion sur les débris de l'industrie primitive", *ibid.*, 58–78, 84–9, 117–19). Pouchet wrongly gives the date of 1858 rather than 1859 and confused one Englishman (Evans) with another (Flower).
24. While their format, reproduction and control are unclear, the Pinsard photographs certainly circulated across the Channel. One should examine why they so rapidly disappeared from view and from disciplinary histories. Questions of personal trust and authority might be relevant: both Evans and Prestwich sought to defend their hard-won authority from further impersonal mechanization. The label later affixed to the hand axe Pinsard photographed (now E5109, Natural History Museum) had an autograph addition by Prestwich stating "Present when found" (Gamble and Kruszynski, *op. cit.* (ref. 20), 470), just the kind of testimony photography was supposed to supersede. Pouchet immediately mitigated the 'impersonal' thrust of the photograph: "Nevertheless it was useful to undertake new verifications in order to convince oneself as much as to convince others" (Pouchet, *op. cit.* (ref. 23), 44).
25. Evans, "Flint implements" (ref. 16), 16. The *langue de chat* implement, so called by the workers, is now E5109. On the compensation for time lost, see Pinsard, *op. cit.* (ref. 20), 252. The gravel served for road repairs and building purposes (Evans, "Flint implements" (ref. 16), 283). A revealing remark by Prestwich shows how cupidity was both denied and instilled: "I may observe that our visit, both at Abbeville and Amiens, was entirely unforeseen and unexpected, and very little value was then placed [by the workers] on either flint-implements or fossils" (Prestwich, "Flint implements" (ref. 15), 292).
26. Evans, *Ancient stone implements* (ref. 17), 575, emphasis added. Highly relevant issues about workers in early archaeological practice, their motivations and reliability cannot be developed further here.
27. Evans, "Flint implements" (ref. 16), 6 (on coin purchase), 18.
28. Grayson, *op. cit.* (ref. 15); van Riper, *op. cit.* (ref. 11), 134ff. On coin counterfeiting and fabrication, see Evans, *Coins* (ref. 10), 44–5; John Evans, "On the forgery of antiquities", *Notices of the*

Proceedings of the Royal Institution of Great Britain, iv (1866), 356–65. For frauds of flint implements see also Evans, "Further discoveries" (ref. 17), 14, on "unimpeachable" patina; Evans, *Ancient stone implements* (ref. 17), 574–7.

29. Evans, *Ancient stone implements* (ref. 17), 22, 292, 573ff.
30. John Evans, "On the form and nature of the flint-implements", letter to Prestwich, 25 May 1859, Appendix A in Prestwich, "Flint implements" (ref. 15), 310–12, p. 310.
31. Evans, "British coins" (ref. 8), 135.
32. Besides the sources in ref. 9, see Dominique Hollard, "L'illustration numismatique au XIXe siècle", *Revue numismatique*, 1991, 337–42, on the growing importance of photography for producing a *corpus* and for calibrating information between researchers. Evans himself recognised that in some cases "it would have been better to have recourse to the autotype process or some other means of photographic reproduction" (*Supplement* (ref. 10), 418).
33. Evans ended his 1850 paper with the proposition that "the coins generally recede farther from the prototype as the places of their discovery recede from the southern coast". He also pointed at the historical implications of distinguishing routes favoured by the Gauls and by the Romans ("British coins" (ref. 8), 136, 131–2). The table accompanying the plate (Figure 1 here) included, for each depicted coin, "(item) number", "metal", "authority", "weight (grains)" and "where found". The expression "metallic mirror" is from Friedrich Creuzer, cited in Babelon, *op. cit.* (ref. 9), 66.
34. Links between numismatics and nineteenth-century prehistoric archaeology have been mentioned but under-researched. Only Gräslund has suggested that such Scandinavian scholars as J. J. Thomsen and later the Hildebrands (father and son) used to consider coins as chronological markers, extrapolated such qualities to other finds (weaponry, pottery), and applied to them the notion of 'type': Bo Gräslund, *The birth of prehistoric chronology: Dating methods and dating systems in nineteenth-century Scandinavian archaeology* (Cambridge, 1987), 26, 66, 99–100.
35. Evans, *Ancient stone implements* (ref. 17), p. v.
36. John Evans, *The ancient bronze implements of Great Britain* (London, 1881), pp. v, viii.
37. Evans's letter in Prestwich, "Flint implements" (ref. 15), 310. Evans's classification, discussion and illustration of ancient stone implements varied little across his publications. They were followed by most of his English contemporaries, including Lyell, *op. cit.* (ref. 22); John Lubbock, *Pre-historic times as illustrated by ancient remains and the manners and customs of modern savages* (London, 1865); and E. T. Stevens, *Flint chips: A guide to pre-historic archaeology, as illustrated by the collection in the Blackmore Museum, Salisbury* (London, 1870). For modern evaluations of Evans's stone implement work, see Derek Roe, *The Lower and Middle Palaeolithic periods in Britain* (London, 1981); White, *op. cit.* (ref. 7); O'Connor, *op. cit.* (ref. 7); and Alison Roberts and Nicholas Barton, "Reading the unwritten story: Evans and ancient stone implements", in MacGregor, *op. cit.* (ref. 7), 95–115.
38. Evans and like-minded colleagues connected the acceptance of high human antiquity on empirical grounds (including photographs) and the theoretical (and for some still suspect and inapplicable) Three Age System emanating from Scandinavia: Peter Rowley-Conwy, *From Genesis to prehistory: The archaeological Three Age System and its contested reception in Denmark, Britain, and Ireland* (Oxford, 2007), 238–41, including the proposition that Evans's traditional antiquarian and numismatist credentials were important in making the more conservative members of the Society of Antiquaries better disposed to the Three Age System.
39. Evans's letter in Prestwich, "Flint-implements" (ref. 15), 310.
40. Lubbock, *op. cit.* (ref. 37), 2–3; see also Boucher de Perthes's distinction between 'antediluvian' and Celtic times.
41. Such a dichotomy between inscribed and uninscribed coins, of various metals and provenances, served Evans to structure his *Coins* (ref. 10), table of contents and p. 33.

42. Evans, *Coins* (ref. 10), 10–11. This did not keep Evans from soon identifying a repertoire of flake forms and functions. The perception of some implements and forms as 'non-diagnostic' echoes the numismatics phenomenon of 'immobilisation', when a type is conserved without changes across time and through several issuing authorities: Bompaire and Dumas, *op. cit.* (ref. 9), 104ff.
43. Evans, "Further discoveries" (ref. 17), 25–6, emphasis in original. Plate IV is Figure 4 here.
44. Evans, "Flint implements" (ref. 16), 9; Evans, "Further discoveries" (ref. 17), 20–1; and Evans, *Ancient stone implements* (ref. 17), 561, 566–7. The barbarous implement is no. 10 in Figure 4 here.
45. Evans, *Coins* (ref. 10), 34. To this production-related variability must be added the 'taphonomic' transformations of each coin: their patina, wear and tear, and eventual filings, alterations or markings. Colbert de Beaulieu, *op. cit.* (ref. 9), 13ff., has commented on the then widely held 'postulate of infinite disparity' in Gaulish coins. See Bompaire and Dumas, *op. cit.* (ref. 9), 453–531, and Jere Wickens, "The production of ancient coins", *Bearers of meaning* (1996) at http://www.lawrence.edu/dept/art/buerger/essays/production.html.
46. Evans, *Ancient stone implements* (ref. 17), 567.
47. R. J. Bradley, "Archaeology, evolution and the public good: The intellectual development of General Pitt Rivers", *The archaeological journal*, cxl (1983), 1–9; D. K. van Keuren, "Museums and ideology: Augustus Pitt-Rivers, anthropological museums, and social change in later Victorian Britain". *Victorian studies*, xxviii (1984), 171–89; Mark Bowden, *Pitt Rivers: The life and archaeological work of Lieutenant-General Augustus Henry Lane Fox Pitt Rivers, DCL, FRS, FSA* (Cambridge, 1991); Gavin Lucas, *Critical approaches to fieldwork: Contemporary and historical archaeological practice* (London, 2001); Alison Petch, "Chance and certitude: Pitt Rivers and his first collection", *Journal of the history of collections*, xviii (2006), 257–66; Christopher Evans, "Engineering the past: Pitt Rivers, Nemo and The Needle", *Antiquity*, lxxx (2006), 960–9; Christopher Gosden and Frances Larson, *Knowing things: Exploring the collections at the Pitt Rivers Museum 1884–1945* (Oxford, 2007), 94; and Philip Steadman, *The evolution of designs: Biological analogy in architecture and the applied arts*, rev. edn (London, 2008), 83–9.
48. *International Congress of Prehistoric Archaeology, third session, Norwich–London, 20th to 28th August 1868* (London, 1869), p. xxii. On the institutional background see William Ryan Chapman, "The organizational context in the history of archaeology: Pitt Rivers and other British archaeologists in the 1860s", *The antiquaries journal*, lxix (1989), 23–42; Christopher Evans, *op. cit.* (ref. 22).
49. Augustus Pitt Rivers [Lane Fox], "Primitive warfare, Part II: On the resemblance of the weapons of early man, their variation, continuity, and development of form", *Journal of the Royal United Services Institution*, xii (1868), in Pitt Rivers, *The evolution of culture and other essays* (Oxford, 1906), 89–143, p. 116. On Cissbury see Bowden, *op. cit.* (ref. 47), 70–1. Joint expeditions are recorded in Evans, *Ancient stone implements* (ref. 17), 531.
50. From the sound observation, derived from Evans, that flint fracture could at times be difficult to control, Pitt Rivers rather disingenuously concluded that "the earlier Palaeolithic forms ... were not designed outright, as the nineteenth-century man would have designed them for special uses, but arose from a selection of varieties produced accidentally in the process of manufacture": "On the evolution of culture", *Proceedings of the Royal Institute of Great Britain*, vii (1875), in Pitt Rivers, *op. cit.* (ref. 49), 20–44, p. 34.
51. Pitt Rivers, "Primitive warfare" (ref. 49), 97.
52. Augustus Pitt Rivers [Lane Fox], *Address to the anthropological section of the British Association (14 August 1872)* (off-print, 1872), 12–13. The same ideas and illustrations are reiterated in "On the principles of classification adopted in the arrangement of his anthropological collection, now exhibited in the Bethnal Green Museum", *Journal of the Anthropological Institute*, iv (1874), in Pitt Rivers, *op. cit.* (ref. 49), 1–19, p. 15, and in Pitt Rivers, "Evolution of culture" (ref. 50), 40–1.
53. The figure in Pitt Rivers, "Evolution of culture" (ref. 50), Plate XXI, is said to be reproduced, with permission, from Evans, "Coinage of Ancient Britons" (ref. 10).

54. Augustus Pitt Rivers, "Typological museums, as exemplified by the Pitt-Rivers Museum at Oxford, and his provincial museum at Farnham, Dorset", *Journal of the Society of Arts*, xl (1891), 114–22, p. 121.
55. Pitt Rivers, "Primitive warfare" (ref. 49), 102.
56. Pitt Rivers, "Primitive warfare" (ref. 49), 103, 105–7.
57. Pitt Rivers, "Primitive warfare" (ref. 49), 108.
58. Evans's meticulous numismatic inspired gazetteer contrasted with Pitt Rivers's recourse to poorly provenanced and haphazardly collected specimens from around the world: Petch, *op. cit.* (ref. 47). Pitt Rivers had also placed at a crucial juncture of the series (items 12 to 15 or 17 in Figure 7) implements that were in reality unfinished and unpolished Celt pre-forms. On the other hand, he must be absolved of the visual illusion inscribed in this figure. His representation of Celt axes with their broad working edges downwards and not upwards, in morphological continuity with the Drift axes (base downwards), defies conventions that were only subsequently established. These may well be own representational conventions that reinforce the distinction between Drift and Celt implements.
59. Evans, *Ancient stone implements* (ref. 17), 560–1, 72, 568, 618.
60. The quote continues: "as there is little doubt that the whole of these varieties have been in use in one and the same district at the same time, the forms being to some extent adapted to the flake of flint from which the arrow-heads were made, and to some extent to the purposes which the arrows were to serve" (Evans, *Ancient stone implements* (ref. 17), 330).
61. Duke of Argyll, *Primeval man: An examination of some recent speculations* (London, 1869), 181ff.; Lyell, *op. cit.* (ref. 22), 377; and William Boyd Dawkins, *Cave hunting: Researches on the evidence of caves respecting the early inhabitants of Europe* (London, 1874), 352–3.
62. Systematization of the Palaeolithic mainly took place back in France, in the context of materialist and transformist debates in late Empire and early Third Republic science: Michael Hammond, "Anthropology as a weapon of social combat in late nineteenth-century France", *Journal of the history of the behavioural sciences*, xvi (1980), 118–32; Joy Harvey, "Evolutionism transformed: Positivists and materialists in the Société d'Anthropologie de Paris from Second Empire to Third Republic", in David Oldroyd and Ian Langham (eds), *The wider domains of evolutionary thought* (New York, 1983), 289–310. See also Coye, *op. cit.* (ref. 15); Richard, *op. cit.* (ref. 15); and Nathan Schlanger, "Le travail en éclats: Perspectives historiques sur des problématiques actuelles", *Techniques et culture*, xlvi (2006),19–32.
63. Evans, *Ancient stone implements* (ref. 17), 566.
64. Evans, *Coins: Supplement* (ref. 10), 421.
65. Evans, *Coins: Supplement* (ref. 10), 422.
66. Evans was praised in 1905 by George Macdonald for having "worked out independently, in the sphere of art, a philosophy that was strikingly consistent with the biological theory through which Darwin revolutionized the modes of human thought": *Coin types, their origin and development* (Glasgow, 1905), 88.
67. Henry Balfour, *The evolution of decorative arts* (London, 1893), pp. viii, 30 on Evans's numismatics; Arthur Cort Haddon, *Evolution in art as illustrated by the life history of designs* (London, 1895), 313, on Evans.