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“Mapping the past on the web”

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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.

## *Mapping the past on the web*

*Stuart Dunn<sup>1</sup>*



Internet mapping and, by extension, digital cartography have become critical in many walks of life, and in many branches of academic research. It is an oft-quoted, and possibly apocryphal, statistic that around 80% of all webpages contain some form of geographic information: a place-name, a coordinate, a link to an online map, and so on. The ubiquity of geodata on the web is linked closely to its inexorable move from the desktop to the mobile; meaning its users are not merely consuming that data, but physically interacting with it and modifying – and creating – it as they do so. In this world, digital geographic data, and Geographical Information Systems (GIS), have never been more important to how information is found, stored and used. In this context, the release of the data underlying the Ordnance Survey's maps since 2010 can be seen as part of a global shift in technology and communications. The internet had shifted from a model of 'web 1.0', where publishers published and readers read much as they had in the world of 'dead tree' communications, only faster and (perhaps) more easily, to one of 'web 2.0' where anyone anywhere could blog, publish, upload, post and mash-up – and maps were no exception. As many pointed out at the time, the release enabled the potential for a vast array of re-use of OS data in new ways and in third-party applications. This in turn sparked numerous debates on the relative accuracy, approaches, ethics and licencing of official map data, such as the OS, and geodata from crowd-sourced mapping platforms such as OpenStreetMap.<sup>2</sup> However, looking at certain aspects of the history of geodata online, this seems to me to somewhat miss the point. It is not about the data products that we have, but rather about the processes of their creation.

These intellectual currents have impacted on the use of digital and online mapping data in academia, and in my own little niche there of the exploration of historical and archaeological space. Web mapping has driven some of the very latest development in this field. Historical Geographical Information Systems (HGIS) has practically become a sub-discipline in its own right, and the digitalization of old maps is now a topic of great interest to the academic community (many of the most important developments have been chronicled by Chris Fleet in various editions of *Sheetlines* in the last few years).

This brief paper seeks to provide an outline of this process, to acknowledge OS's role in current thinking about digital cartography as applied to the archaeology of the UK; and to express some hopes as to how both OS and the Charles Close Society might engage with these currents in the future – and to suggest that the main significance of the OS data releases is the kind of work they represent and enable, rather than the data products themselves.

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<sup>2</sup> Steve Chilton, 'Ordnance Survey and OpenStreetMap: UK mapping is getting crowded', *Sheetlines* 91,20.

Mapping the features, processes and societies of antiquity requires high-quality data, just as current applications have come to rely on high-quality *data.gov.uk* data released in 2010. And as with the OS release, questions have been raised about who produces that data, who curates it, who is responsible for it; and the extent to which it can be relied upon. Often historical and archaeological geodata is derived from official and/or peer-reviewed sources. Such resources, and the scholars behind them, have had to respond in much the same way as the OS to the changing currents on online peer-production and crowd-sourcing. One key activity in this area is the Pleiades gazetteer project,<sup>3</sup> coordinated by New York University's Ancient World Mapping Center. Pleiades is an online repository of all the place-names cited by classical authors documented in the Barrington Atlas of the Ancient World, historically one of the most authoritative sources for Ancient World geography. In Pleiades, every Barrington place-name is given a unique referent with a unique number which forms part of a web-readable Universal Resource Identifier (URI). This approach allows one place whose existence is attested, and whose name might be spelled in a myriad of different ways, to be identified by a single entity. In the same way that only one web page can occupy a particular URL (eg only the Charles Close Society's website can be resolved from *www.charlesclosesociety.org*), so only one place can 'live' at a Pleiades referent.

For example, <http://pleiades.stoa.org/places/579885> is the unique referent for Athens. All the different variations of the spelling of Athens (eg Athenae), and all locations attested as being associated with/and or part of Athens (eg the Acropolis, the Keramikos, the Agora etc) are linked to this referent in the gazetteer. This allows references in other datasets, such as online museum catalogues, texts, other gazetteers etc, to use Pleiades as a reference for that place. Most importantly however, any member of the community who registers on Pleiades can propose new names, or edits to existing ones.<sup>4</sup> In this 'democratization' of the Barrington dataset, all community-sourced names are documented according to the same standards, and given unique referents in the same series. This 'Linked Data' approach (the basis of Tim Berners Lee's Semantic Web concept) – which has been embraced by the OS in the data already released – allows such resources to be seamlessly cross-searched together using these common place references. Geography, in other words, becomes the thing which links them together. This approach lies behind the Pelagios project,<sup>5</sup> which is seeking to build a community of online gazetteer resources using Linked Data, in order to enable 'new modes of discovery and visualization for scholars and the general public'.

This open approach to community-sourced (a term that is in many ways preferable to 'crowd-sourced') geographic data provides an interesting perspective on the history of mapping the antiquities of the British Isles themselves, a topic

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<sup>3</sup> <http://pleiades.stoa.org/home>

<sup>4</sup> <http://pleiades.stoa.org/welcome>

<sup>5</sup> <http://pelagios-project.blogspot.co.uk>

with which the Ordnance Survey has been engaged since at least 1924. In fact, the early history of this subject is the story of the amateur and the antiquarian. It is hard to say when the mapping of Britain's ancient sites and monuments began, but as with many such questions, the first complication is the question of what is actually meant by 'mapping'.

John Leland's *Itinerary* (1538-43) and William Camden's *Britannia* (1586) are both written accounts drawn from first-hand observation. These are documents of their time, the Renaissance, and reflect that era's reawakened fascination with the antiquity of Greece and Rome, which was becoming familiar again throughout Europe from the rediscovery of Classical texts. Camden's own stated aim was to 'restore antiquity to Britaine, and Britaine to his antiquity'. But they are hardly maps in the cartographic sense; rather they are geographical explorations of the physical manifestations of the past in the writers' contemporary present; and reflect that public fascination, at least in intellectual circles.

William Roy, of course one of the early architects of the processes and methods which led to the establishment of the Survey, was himself a keen antiquarian. His *Military Antiquities of the Romans in North Britain*<sup>6</sup> posthumously-published in 1793 is widely considered a foundational text of archaeological mapping. In terms of the modern scholarship of this work, there is little that can be added to the recent survey of Yolande Hodson, whose very title, quoting Roy directly, speaks to his interest in mapping antiquities as a leisure pursuit;<sup>7</sup> and the PhD thesis of Carolyn Anderson<sup>8</sup> among various other excellent works, but a brief recap of the main points will help to set the scene. This magisterial tome contains over fifty plates, many presenting plans of individual military camps and emplacements, along with cross section at large scale, taken by Roy in the course of his Military Survey of Scotland (1747-1755). These plans are without question things of beauty; and in terms of their Cartesian accuracy would not disgrace a modern field survey. Relief is shown by shading, in a manner which anticipates the techniques that become widespread in the nineteenth century. Roy's own account of his motivations for exploring the historic landscape speak to his occupation as a military man with experience of battle, being 'naturally led to compare present things with the past ... [to] converse with the people of those remote times'. The blurring of the amateur and the professional is not a feature of the web 2.0 world; although the often insidious distinction between the two might well be.

The military associations of mapping lead almost inevitably to another connotation, that of empire. In the wake of the six-inch to the mile surveys of Ireland between 1824 and 1855, the expansion of the Overseas Dominions in the East set further challenges for Britain's cartographers. One of these was the

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<sup>6</sup> Which, thanks to the excellent digitization programmes of the National Library of Scotland, is now freely available online at <http://maps.nls.uk/roy/antiquities>

<sup>7</sup> Yolande Hodson, 'The Lucubrations of his Leisure Hours: William Roy's Military Antiquities of the Romans in Britain 1793', *Scottish Geographical Journal*, 127:2, 2011.

<sup>8</sup> Carolyn J Anderson, 'Constructing the military landscape: the Board of Ordnance maps and plans of Scotland 1689-1815', <https://www.era.lib.ed.ac.uk/handle/1842/4598>, 2010.

acquisition of Cyprus from Ottoman Turkey in 1878, as a means of forming a bulwark against Russian expansion in the region. By all accounts – or rather by accounts written by British administrators of the late 1870s and 1880s – the island was in a sorry state. In *The Birth of Cyprus* (1885), Lieut. H. H. Johnstone RE wrote that ‘Cyprus came into the hands of the English ... after suffering for three hundred years Turkish oppression, mismanagement and bad government’. One of the Imperial administration’s first priorities was to understand better the topography, geography and demographics of the island for the purposes of taxation, and in 1882, another Lieutenant of the Royal Engineers, Herbert Horatio Kitchener – later known better as Lord Kitchener of Khartoum – was commissioned to produce a ‘Trigonometrical Survey of the Island of Cyprus’, which was completed in 1882 and published by E. Stanford in 1885. The Trigonometrical Survey was set at a scale of one inch to one mile, ‘the same as the Ordnance Survey of the United Kingdom’.

I have combed various archives in both Cyprus and London looking for a direct link between the Trigonometrical Survey in Cyprus and the domestic Ordnance Survey, but as yet have found no such smoking gun. However, indirect evidence of a certain mutual influence can be detected, in addition to the reference Kitchener makes to the scale. In presenting Kitchener’s map to the Scottish Geographical Society, Trelawny Saunders (with whom Kitchener corresponded on the ‘miserable state’ of the island after Turkish rule) noted that ‘the execution of the engraving work, which was intrusted to Mr. Stanford, has been well done, and perhaps much more speedily than if it had got into the Government office at Southampton’.<sup>9</sup>

For the place-names on his map, which included both Greek and Turkish toponyms, Kitchener drew on Imperial censuses conducted between 1878 and 1882. What is interesting is that in these circumstances the populations being mapped did not have available to them the channels of redress and complaint that were available to those who objected to the error-prone ways in which, at times, the Ordnance Survey’s map-makers dealt with Welsh place-names in the 1820s.<sup>10</sup>

The politicization of toponymy in contested areas such as Cyprus, and the need for correct identification of names used both in the present day and historically, is the subject of a project at King’s College London which seeks to employ the URI-based gazetteer approach exemplified by Pleiades and Pelagios to address the kinds of issues in mapping historical and archaeological names, which ‘official’ organizations such as the OS have encountered throughout their histories, both colonial and postcolonial. The Heritage Gazetteer of Cyprus (HGC)<sup>11</sup> is an online names database which assigns a numerical URI to a place every time it is mentioned in a text of any period. To ensure compliance with local laws, the default toponym for every place is given from the official lists

<sup>9</sup> ‘New maps’, *Scottish Geographical Magazine*, 1:11, 589-593, 1885.

<sup>10</sup> Rachel Hewitt, *Map of a Nation: a Biography of the Ordnance Survey*, Granta Books, 191-195, 2011. Hewitt notes that the language barrier was ‘like the Himalayas’.

<sup>11</sup> <http://www.cyprusgazetteer.org>

submitted by the Republic of Cyprus to the UN, and documented by the latter's appointed authorities in 1987.<sup>12</sup> These texts can be anything: travelogues, maps, histories, itineraries, manuscripts etc. Identifying each spelling of each attested name in each text with a unique ID allows us to build a profile of the toponymic history of any individual place: Nea Paphos (New Paphos) for example now has 11 such variants, all tagged with unique IDs according to Linked Data principles: <http://www.cyprusgazetteer.org/bu/17>. As with Pleiades, any member of the community can contribute variants and, subject to a review and moderation process, have it published and thus contribute to that profile. This is a very good example of how digital data structures can mediate between 'official' sources and texts, and those provided by the community, to create 'community-sourced' digital maps.

The value of digital mapping does not lie in the fact that it allows geographic material to be distributed more broadly than paper maps; rather it lies in the kind of collaborative and community-sourced work it enables. The OS Open Data initiative brings very exciting prospects to expand work of this kind; and developments of the next couple of years will undoubtedly have a heavy influence on any map-based analysis of the UK's archaeology. The Linked Data model for the 1:50,000 gazetteer (withdrawn in June 2015) contained a label type for 'Roman Antiquity', to denote sites of this class in the OS database.<sup>13</sup> However, as far as I can see, the service which has replaced the 1:50,000 gazetteer product does not yet have such a label.<sup>14</sup> The OS's mapping of Roman Britain began in 1924, a mere forty years after Kitchener's Trigonometrical Survey (although few would claim this first edition was the Survey's finest offering) and its maps of features such as Hadrian's Wall are invaluable to both hikers and researchers (I have been both).

The development of Pleiades from the Barrington Atlas dataset, and that of the Heritage Gazetteer of Cyprus from various 'official' sources of attestation show that such sources, when released to the open web, take on broader roles in the web 2.0 environment as platforms of communication, negotiation and collaboration. After five years, the ongoing OS data release is a critical part of this conversation; and it is to be greatly hoped that the availability and use of OS Linked Data relating to the history and archaeology of the British Isles will be possible, in the face of inevitable competition with OS's role as the UK's agency of record for modern geographic data.

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<sup>12</sup> Menelaos N Christodoulou and Kōstas N Kōnstantinidēs, *Kypros Monimē Epitropē gia tēn Typopoiēsē Geōgraphikōn Onomatōn, A complete gazetteer of Cyprus*. Cyprus Research Centre: Department of Lands and Surveys, 1987.

<sup>13</sup> <http://data.ordnancesurvey.co.uk/ontology/50kGazetteer/RomanAntiquity>

<sup>14</sup> <https://developer.ordnancesurvey.co.uk/blog/os-open-names-v12-released>