

MARY ANNING (1799-1847) AND THE PHOTOGRAPH *THE GEOLOGISTS* ASCRIBED TO WILLIAM HENRY FOX TALBOT (1800-1877)

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Taylor, M.A. and Levitt, S. 2015. Mary Anning (1799-1847) and the photograph *The Geologists* ascribed to William Henry Fox Talbot (1800-1877). *Geoscience in South-West England*, **13**, 419-427.

A photograph of 1843, titled *The Geologists*, has recently been suggested to portray Mary Anning of Lyme Regis, and Henry De la Beche of the Geological Survey. This, and another of the same outcrop, were taken about 1843 at Chudleigh, Devon, almost certainly by William Henry Fox Talbot (1800-1877). The photographs are reviewed in the context of contemporary geology, costume, and photography. The female is most unlikely to be Anning. A suggestion that De la Beche commissioned the picture as a trial of landscape photography, with the Survey in mind, cannot be confirmed. His interest, so far as it is known, was in photographing specimens to help prepare published illustrations. In the context of Talbot's work, *The Geologists* remains ambiguous. It can be interpreted as a whimsically named joke photograph, or a serious artistic tableau intended to show geological activity, just as much as a pair of actual geologists. The locality might have been selected as a popular tourist spot, with accessible and romantic scenery, rather than, or as well as, for its geological interest. *The Geologists* remains an intriguing photograph, perhaps the earliest purportedly of West Country geological activity, or of a woman engaged in geology.

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INTRODUCTION

Pilaar Birch (2013) suggested that Mary Anning (1799-1847), the notable fossil collector of Lyme Regis, and Henry De la Beche, F.G.S., then director of the Geological Survey, might be shown in *The Geologists*, a photograph in the collection of William Henry Fox Talbot (1800-1877). Her article was headlined when the search engine *www.google.co.uk* adopted "Mary Anning's 215th Birthday" as theme for its home page on 21 May 2014 (*www.google.com/doodles/mary-annings-215th-birthday*, accessed 3 December 2014). This, of course, reflects the great public interest in Anning's story with its mix of fossil collecting, social class and romantic Regency resort. We review Pilaar Birch's suggestion, given its importance for public interpretation as well as for more academic studies, and give a more general assessment of the photograph as an early image of a woman engaged in geological activity, as highlighted also by Pilaar Birch.

Repositories and abbreviations

Unless stated, birth, marriage and death information is from standard sources via *www.ancestry.co.uk* and *www.familysearch.org*. Abbreviations: ACNMW, De la Beche correspondence, Amgueddfa-Cymru, National Museum Wales, Cathays Park, Cardiff CF1 3NP, numbering as Sharpe and McCartney (1998); BRSMG, City of Bristol Museum and Art Gallery, Queens Road, Bristol BS8 1RL; CWHFTP, *The Correspondence of William Henry Fox Talbot Project*, *http://foxtalbot.dmu.ac.uk/index.html*, numbering as therein, accessed 29 May 2015; GSL, Geological Society of London,

Burlington House, Piccadilly, London W1J 0BG; NHM, Natural History Museum, Cromwell Road, London SW7 5BD; NMeM, National Media Museum (part of the National Museum of Science and Industry), Bradford, West Yorkshire BD1 1NQ; NUL, Special Collections, University Library, Newcastle University, Newcastle upon Tyne NE1 7RU; Schaaf, *Catalogue Raisonné* in preparation, *http://foxtalbot.bodleian.ox.ac.uk/*.

PROVENANCE AND LOCALITY

In the original internet posting of Pilaar Birch (2013), an editorial error ascribed the photograph generally called *The Geologists* to "Dorset", presumably with Lyme Regis in mind, but this was later corrected to "Devon" (S. Pilaar Birch pers. comm. 2013). There can be little doubt that the photograph was taken at Chudleigh in Devon. The image is described as "Chudleigh 1843" by the NMeM (Figure 1; a close variant, NMeM 1937-1611, 1937-1612, Schaaf 1918, also exists, the negative inscribed in pencil by Talbot as "Chudleigh", L.J. Schaaf pers. comm. 2014, 2015). The usual title "204. *The Geologists: A Scene of Rocks at Chudleigh, Devon*" actually comes from Nicolaas Henneman's printed sheets of titles which were cut up into individual title blocks for pasting onto the verso of the boards of prints for sale at his Reading Establishment and later in London (set of uncut sheets in Talbot Collection of NMeM, and a mounted example of the print with this label, NMeM RPS25215; L.J. Schaaf pers. comm. 2015). It is not clear where the date of 1843 comes from, though this dating is plausible.

An image in the NMeM collection, described as Chudleigh (but without a conventional formal title), is a wider view of the same rock outcrop (Figure 2; Schaaf 264). Another photograph shows a man in hat and dark clothes in front of the rocks (NMeM 1937-1609, 1937-1610, Schaaf 265, L.J. Schaaf pers. comm. 2014). At least one other Talbot photograph was also taken at nearby Ugbrooke Park (NMeM 1937-4381, 1937-4796, Schaaf 1257, L.J. Schaaf pers. comm. 2014).

Chudleigh, in south-central Devon, c. 50 km west of Lyme Regis, was of particular interest to geologists (e.g. Austen, 1842) for the fossil-rich Greensand overlain by gravels at Haldon Hill, and the so-called Torquay Limestone of Chudleigh Gorge, Black Rock, and adjacent quarries. The photographs are consistent with the latter limestone, as they show rough texture and bedding (horizontal layering), and an apparent joint face with travertine coating (miniature stalactites and stalagmites) visible in *The Geologists* (R. Gallois pers. comm. 2013). The vegetation in the photographs suggests that the exposure was inland rather than coastal. Also, the image does not resemble any coastal exposures nearer Lyme Regis than Portland (R. Edmonds pers. comm. 2014).

The Torquay Limestone contains fossils (not visible in the photographs), although better ones are more easily obtained elsewhere (R. Gallois pers. comm. 2014). In 1843 the limestone was of scientific interest because of the relevance of such limestone strata to a major debate about the stratigraphy of Devon and Cornwall, and the realisation that these coral-bearing limestones were contemporary with the very different, and fish-bearing, Old Red Sandstone elsewhere in Britain. This was an early example of the recognition of a facies difference, in this case within the then newly termed Devonian Period (Sedgwick and Murchison, 1840; Rudwick, 1988). But the limestone was also of interest for the Quaternary (“Ice Ages”) bones and teeth contained in the depressions in its surface, and in its fissures and caves, some revealed by quarrying activity, and reviewed by Pengelly (1873). The first cave to attract attention from geologists was Pixie’s Hole, also known as Chudleigh Cave. However, Pengelly rather confusingly used this latter name for the other “cavern” known to him, “discovered about 35 to 40 years ago [so before 1843, and] kept under lock and key as a show place” but where no bones had then been found (Pengelly, 1873). Other bone caves and



Figure 1. *The Geologists*, calotype photograph ascribed to W.H.F. Talbot, and catalogued by NMeM as “The Geologists, Chudleigh, Devon”, and as being made c. 1843, NMeM Inventory No. 1937-1614/4, Schaaf 1919 (<http://collectionsonline.nmsi.ac.uk/detail.php?t=objects&type=related&kv=8183829>, last accessed 8th June 2015). The rock face is evidently that shown in the lower right corner of the wider view in Figure 2. Copyright National Media Museum / Science & Society Picture Library.

fissures have since been discovered (Campbell and Collcutt, 1998; Simons, 2010). Such Quaternary bone caves were a highly topical field of research in the early 19th Century, and as Pengelly outlined, Chudleigh was one of the Devon sites then attracting attention (also Austen, 1842, p. 443; Sommer, 2003, 2007, p. 82).

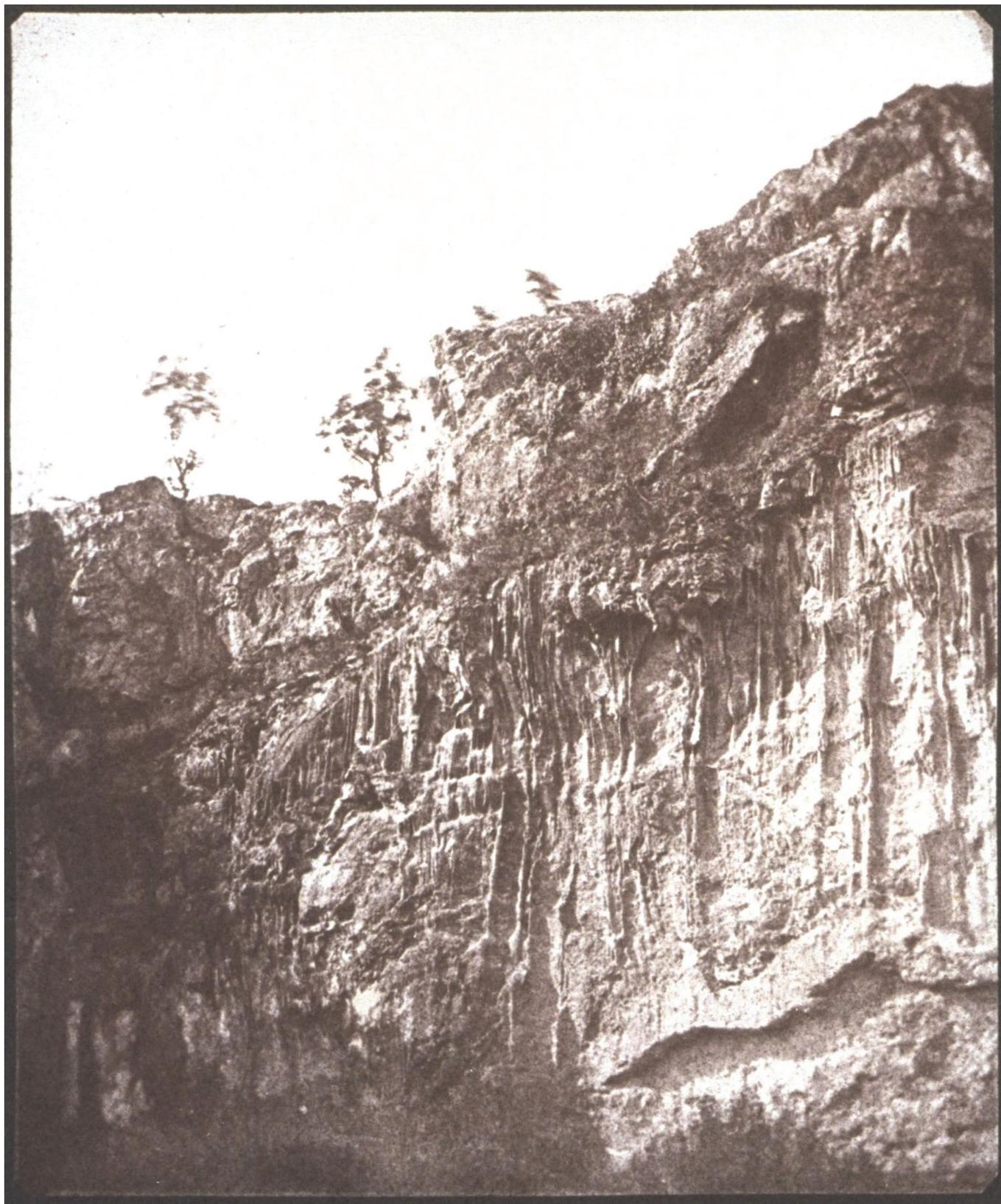


Figure 2. Untitled calotype photograph ascribed to W.H.F. Talbot, catalogued as “Chudleigh, Devon, c. 1843”, NMeM Inventory No. 1937-1604/6, Schaaf 264 (<http://www.scienceandsociety.co.uk/results.asp?image=10468632&itemw=4&itemf=0001&itemstep=1&itemx=1>, last accessed 8th June 2015). Copyright National Media Museum / Science & Society Picture Library.

TECHNIQUE AND COMPOSITION

The Geologists has to be understood within the wider background of Talbot's photographic work (references for discussion of Talbot's work, Schaaf 1989, 1996, 2000, 2004, 2013). Talbot was a Wiltshire landowner with aristocratic connections by descent and marriage. His mother, Lady Elisabeth Theresa Feilding (1773-1846), *née* Fox Strangways, was a daughter of an Earl of Ilchester, and his half-sister Caroline (1808-1881) was married to Ernest, 3rd Earl of Mount Edgumbe (1797-1861). Talbot was interested in a range of topics in science and mathematics, though not, it seems, geology, judging from the published sources cited here, from his photographs, and from the fact that an initial CWHFTP search tends to bring up the geological interests of Talbot's family and friends rather than his own.

Talbot's initial photographic work took place in the mid-1830s but his initial process was a print-out one not involving a latent image. In September 1840 he discovered the latent image and published the calotype process based on this in 1841. This meant that a number of copies could be made from a single negative. Thus the simple presence of a print in Talbot's collection is not strict proof that he took it (Schaaf, 2004). It could have been by a photographic friend such as Calvert R. Jones (1802-1877), Welsh painter & photographer. However, our working assumption is that Talbot took *The Geologists*, especially as negatives of Chudleigh images are present in the collection.

The shadows in the two photographs are at different angles, suggesting that Talbot was at Chudleigh for some time. A limitation was the need for strong lighting, preferably bright sunlight, to keep exposures down to only a few seconds. So perhaps Talbot had to wait for the sun to come out of cloud, and for calm spells to prevent blurring of clothing and vegetation, and then he would have to compose his pictures afresh to take into account the changing shadows. The gentleman in *The Geologists* is resting his walking stick on the rock, and the stick's shadow just to his right suggests very bright overhead sunshine. L.J. Schaaf (pers. comm. 2015) notes that the stick was a handy steadying device, but that it was hardly essential for a bright sunlight exposure outdoors; the compositional device of the shadow is perhaps more important, while of course the stick draws our attention to the rocks which otherwise might be seen as mere backdrop.

Without knowing the precise location (which may not be recognisable today after more than a century of quarrying, vegetation, weathering, and, latterly, rock-climbing), we cannot say whether the photograph was intended to highlight a particular feature such as a cave. Its location might, rather, have been constrained by available light, especially if in the gorge.

More generally, Talbot photographed a variety of subjects to explore his technique's practical and aesthetic scope. Photography was a new art which was still developing its own conventions. Long exposures, and the sheer amount of work involved in coating and loading the paper, made each exposure precious. This encouraged early photographers to think like painters in terms of compositions, in contrast to the notion of snapshot authenticity prevalent today. Geologists are apt to be familiar with the portraits of Hugh Miller (1802-1856) by David Octavius Hill (1802-1870) and Robert Adamson (1821-1848), around the time that *The Geologists* was taken. Miller was photographed in his habitual Scottish countryman's maud (wrap) (Stevenson, 1981, 2002; M.A. Taylor, 2007). But Miller was also photographed with his jacket off and mason's tools in hand, although he had not been a working stonemason for years. Moreover, he was shown next to a gravestone (rather than, say, preparing a fossil for his collection). So this was strictly inauthentic, as Hill and Adamson knew quite well from their photographs of stonemasons in their working dress. Rather, their image conveyed the ambiguity of Miller's life, from self-educated stonemason to newspaper editor.

Talbot explored compositions such as still lifes, portraits, buildings, landscapes and tableaux. These tableaux were

composed scenes of some activity, such as taking tea on the great house's lawn, or cutting wood (Schaaf, 2000, images 70, 84, 97, pp. 172-173, 200-201, 226-227). Just as a painter often used models, Talbot tended to use his own family, servants, and friends as subjects, dressed as required. They were more likely to be available in the short periods when conditions were good, and were trained to the long exposures needed. Where the subjects' real-life identities, social class, and roles are known, they were often inappropriate to their pretended ones. For instance, the pretend tea-drinkers were mostly servants, and the woodcutters were household officers well above such menial work. But this did not matter for such a scene, and no irony was intended. People's faces were relatively unimportant, and the fact that *The Geologists* conforms brutally to this pattern, both subjects having their backs to the camera, strengthens its identification as another of Talbot's tableaux. The two persons might be 'geologists' – but are just as likely to be relatives, servants, or friends without any geological interest acting as models, as Pilaar Birch (2013) noted.

CLASS AND GENDER: THE EVIDENCE FROM COSTUME

The subjects of *The Geologists* appear to be a middle-class man and woman. Their social class is indicated by their fashionable formal clothes and their engagement in a leisure occupation for recreation or 'improvement', rather than labour or academic study. The man is not wearing a hat, suggesting a degree of legitimate intimacy – a married couple, brother and sister, or perhaps cousins, or at least very close acquaintances. Gentlemen were not usually bare-headed outdoors in the presence of ladies unless they had a close relationship and it was in a private or secluded location. The woman's bonnet is fashionable for the early 1840s, when bonnets were still large and wide-brimmed, notably corroborating the date. She is moreover wearing a paisley shawl. Such shawls came into fashion around 1840 and continued to be popular for many years, but were still very fashionable and expensive in 1843. A second-hand market in them developed by the 1860s, when there are photographs of poor women wearing them. However, in the 1840s, a paisley shawl was a sign of affluence.

This image is especially interesting as potentially the earliest known photograph depicting a geological excursion, but also, almost certainly, the oldest known photograph representing a 'lady' geologist. To modern eyes, this seems improbable given the impracticality of the clothing for the activity supposedly taking place. Indeed one might wonder whether the subjects were dressed and posed for a high-prestige photograph which had been carefully posed like a painting, with some suspension of reality. For instance, the famous paintings of Mary Anning show her in her best coat but (symbolically) carrying her geological hammer on the Lyme foreshore (illustrated in Torrens, 1995). Richard Ansdell's painting of the Oxford University geologist William Buckland (1784-1856), coincidentally painted around 1843, also seems another pious fiction, showing Buckland purportedly in the field and complete with specimen bag but still fairly formally dressed, by contrast with Thomas Sopwith's more informal, and far more plausible, sketch of Buckland on fieldwork (Ansdell painting in GSL; Gordon, 1894, pp. 85, 145).

But in fact the sartorial formality of *The Geologists* is only to be expected. It was rigidly enforced by social expectations governing mixed-sex groups in public places. This was despite the severe problems that the physical and behavioural constraints on women arising from their clothing, and the etiquette associated with it, caused for mixed-sex field trips in geology and natural history, even when the women were genuinely interested in science (Allen, 1994). It was only later on, from the mid-19th Century, and especially from the 1860s, that special types of clothing for leisure pursuits became increasingly popular for women as well as men, as tourism and outdoor hobbies became the social norm. These clothes' cut and materials, such as the tweed 'Norfolk Jacket' for men, were

based on less formal country clothing, although such special clothes added to the formality of daily life, rather than making it less restrictive, and involved more financial outlay, more changes of clothing, and a more complicated etiquette. But this was before *The Geologists* was taken in 1843. In this photograph, the bonnet of the woman restricted her field of vision. Her heavy and voluminous paisley shawl was pinned and folded diagonally to restrict the shoulders, and cover the hands and arms (also noted by R. Watson pers. comm. 2015). Her heavy, and very full, skirt, and numerous petticoats, skimmed the ground. These sum up the expected female role in the 1840s; clothing always reflects the expectations of society.

The man in the photograph is only relatively more free. Most geologists at this period were upper- or middle-class men, who would have worn the 'correct' mainstream outdoor dress for the occasion. Visual appropriateness was a fundamental aspect of Victorian society, especially when 'gentlemen' and 'ladies' were together, and few would have been prepared to transgress it. There is some evidence that early geologists did wear rougher and more practical clothing when out on their own, but this was at the risk of social embarrassment. Scrambling around the countryside with a hammer collecting rocks and fossils, and for that matter even just *carrying* them, while conventionally dressed, created tensions for 'gentlemen' between the perceived manual labour and one's social class, and dressing down only made matters worse (Porter, 1978; Allen, 1994; Shortland, 1996; Sommer, 2003, 2007). These issues underlay the humour of a favourite dinner-table story by Adam Sedgwick (1785-1873). This University of Cambridge professor, and Canon of Norwich Cathedral, out geologising, was mistaken for a roadmender and given a shilling by a lady, who must have been horrified to meet him at dinner in the local grand house (Clark and Hughes, 1890, vol. 2, pp. 573-574). Even Robert Howlett's famous 1857 photograph of Isambard Kingdom Brunel, by the launching chains of the *SS Great Eastern*, shows him in formal mainstream dress, including his huge top hat – though the clearly visible mud caked on his trousers could well have been intentionally left, to signify his engagement in heroically physical and dirty work.

However, there is a blatant discrepancy in *The Geologists*: the lack of fieldwork equipment. There is no collecting bag or basket for specimens. And above all there is no geologist's hammer, so distinctive a symbol and so necessary in practice (Klemun, 2011) that its absence strongly implies that one was unavailable. This suggests that in reality neither person was a geologist. L.J. Schaaf (pers. comm. 2015) indeed suggests that the title "*The Geologists*" was given retrospectively, especially given the way that Talbot labelled the variant negative only as "*Chudleigh*".

WAS THE WOMAN MARY ANNING?

The date of *The Geologists*, corroborated by costume evidence, is indeed a few years before Mary Anning's death in 1847. One obvious line of argument is that female geologists might be so rare that the woman is statistically likely to be Anning. Yet she was not the only woman working in the field (Pilaar Birch, 2013). Geological females were, in fact, sufficiently numerous that Anning is not remotely an odds-on chance, especially as the photograph was not taken near Lyme. A minimum estimate of the number of significant female fossil collectors in the early 19th Century can be had from Sherborn's (1935) listing of collectors whose specimens were used in the Sowerbys' major palaeontological work *Mineral Conchology*. This yields some 28 females. To those one must add those serious collectors who did not lend to the Sowerbys (or did so through their menfolk), and the many other less serious geologists (more generally, see Kölbl-Ebert, 2007, and other papers in Burek and Higgs, 2007, and Turner *et al.*, 2010). Talbot himself had geologically minded female cousins, especially Mary Talbot (1795-1861), who was involved in

William Buckland's famous research in the Paviland Cave on the Gower Peninsula, on her family's property (Howes, 1988; Sommer, 2007, pp. 60-61).

Moreover, photography was new, difficult and expensive. We cannot assume that Anning was ever photographed by anyone, never mind Talbot, and indeed there is little evidence for this. Lyme Regis seemingly had no resident photographer before 1861. Even with visiting amateurs and travelling commercial photographers, the earliest Lymian photographs of any kind date from about 1850 onwards, so far as can be told from the very few known (Draper, 2006). The only mention of a photograph of Anning known to us is in the 1978 recollections of the near-centenarian Ivy Caddy, born in 1882 in Anning's former house in Broad Street: "*I think Mother [Ann Elizabeth Beer (c. 1847-1928)] had a photograph of her, but what happened to it, I don't know*" (Caddy, 1993, frontispiece and pp. 10-11; not Hallett, 1993, *pace* Pierce, 2014, p. 77). This is thin evidence for a pre-1847 photograph in the absence of any extant attributable print. We suspect that Caddy's photograph, if it existed, was of the famous *painting* of Anning then held by the Anning family and today in NHM. Significantly, a visitor to Lyme, presumably in summer 1875, had the original painting "*photographed, and perhaps copies may be obtained from the photographer, Mr. Walter, at Lyme Regis*" (G., 1875). This was no doubt James Walter (d. 1888) who took portraits and sold local scenes as *cartes de visite* (Draper, 2006, pp. 16-38). In 1875, too, James Marder (1824-1888), fossil-collecting chemist and Broad Street neighbour, sent a second, copy, painting to GSL (letter to Secretary of GSL, 9 June 1875, GSL/L/R/19/151), and might have had it photographed first.

What at once emerges is that much stronger evidence is needed to identify the woman in *The Geologists* as Mary Anning. Yet further analysis is, if anything, against this:

- 1) Talbot normally used friends, family and servants in his photographs. There is no evidence for any such connection with Anning. She and Talbot were not remotely on the same social level, and there is no known link such as common location or interest.
- 2) The photograph was not taken at Lyme, but some distance away. Travel was expensive and Anning was not wealthy. Apart from the well-known trip to London (Torrens, 1995), there is no evidence that she travelled beyond the Lyme district, apart from a fossil cephalopod ink-bag supposedly collected by her from the Somerset coast (Buckland, 1836, vol. 2, p. 51). This was however perhaps acquired as a gift, or through trade as with Lyme commercial collectors today.
- 3) The silhouette of the woman in *The Geologists* is reminiscent of the well-known paintings of Anning of about the same date. In fact, this simply reflects current fashion. The dress itself is quite different. The woman in the photograph is wearing fashionable and expensive clothing, especially the paisley shawl and bonnet. In the paintings Anning is wearing a stout long coat. This might even have been her only decent formal outdoor wear, for she was apparently not well off during the late 1830s and 1840s, judging from the financial support organised in 1838 and 1846 (Torrens, 1995). She was remembered as poor and plainly dressed in the childhood reminiscences of Eleanor Emma Waring (c. 1838-1909) ([Waring], 1895), who can be identified from data in Lang (1950, p. 187). This dates Waring's reminiscences to c. 1842 onwards, together with her mention of Anning's mother who died in 1842. Also, the woman in the photograph seems perhaps rather young for Anning (aged around 44 in 1843).
- 4) The title *The Geologists*, if original, arguably sits ill with Anning. She was not a 'geologist', a largely middle- or upper-class role, but a working-class commercial collector, or 'fossilist' as she might then be termed. Most 'geologists' were 'gentlemen' at the time, not 'ladies', and certainly not

- 'women', the category in which Anning would have been placed.
- 5) Working-class people were unlikely to be photographed unless of special interest, and would then be shown in the appropriate dress and location, such as the stonemasons and fishwives photographed by Hill and Adamson (Stevenson, 1981, 2002). Anning would surely be shown as a fossilist, perhaps on the beach with hammer and basket, and not with her back to the camera.
 - 6) There is a significant probability that the people in the picture were not actually geologists, ruling Anning out completely.

THE DE LA BECHE CONNECTION

We do not attempt to assess the possibility that the man in *The Geologists* was Henry De la Beche, though there is in fact some evidence for a link with Talbot. Pilaar Birch (2013) suggested that *The Geologists* arose from an 1843 request by De la Beche that Talbot should take geological photographs. De la Beche had indeed lived in Lyme and knew Anning. In 1832, he had been employed by the government to complete his geological map of Devon: the origin of the Geological Survey, whose first Director he became (Rudwick, 1988; Sharpe and McCartney, 1998). Moreover, De la Beche was related to Talbot by marriage, if rather distantly. His daughter Bessie (1819-1866) had, in 1838, married Lewis Llewelyn Dillwyn (1814-1892), son of the Swansea naturalist Lewis Weston Dillwyn M.P. (1778-1855) whose eldest son John Dillwyn Llewelyn (1810-1882) married Talbot's cousin Emma Thomasina Talbot (1808-1881). Talbot and De la Beche probably first met in 1839 (ACNMW 2011), but they do not seem to have had much to do with each other, as neither Sharpe and McCartney (1998) nor CWHFTP list surviving correspondence between them.

In any case, it is not clear that the Chudleigh photographs stemmed from the correspondence adduced as evidence by Pilaar Birch. Those letters, from the scientist William Snow Harris (1791-1867) on De la Beche's behalf, to Talbot, on 24 and 28 February and 2 March 1843, raised the possibility of using calotypes in the work of the Geological Survey – but of individual fossils, not field sites or scenery (CWHFTP 4737, 4741, 4743; also letters to De la Beche from the Survey palaeontologist John Phillips (1800-1874), ACNMW 1469, 13 November 1842, and the French geologist Jean B. Élie de Beaumont (1798-1874), ACNMW 506, 26 March 1843). The aim was to produce more accurate illustrations of fossils by replacing the initial drawing with a photograph, especially when it was impractical for a fossil to be sent to the lithographer or engraver. This would certainly fit well with the Survey's known priorities. The rapid progress of geological mapping produced a commensurate need for accurate identification, and illustrated published descriptions, of the fossil species involved in determining the relative ages of the geological strata involved (Knell, 2000).

Photographing fossils was not quite new. Some publicity had recently been given to photographs of fossils by Levett L. B. Ibbetson (1799-1869), and about this time Hill and Adamson's image of the supposed fish (in fact, reptile) *Stagonolepis*, the earliest known photograph of any vertebrate fossil, was used to produce a published lithograph (Andrews, 1982; R. Taylor, 2007, p. 333; Schaaf, 2010). But, although a meeting was arranged between Talbot and De la Beche, nothing seems to have come of this Survey contact, and the reasons are so far unknown. There were real problems with producing long-lived calotype prints en masse. Even when easier processes were introduced it was a long time before the publication of books illustrated with photographs of fossils, probably because of the cost of replicating and tipping in the individual images before the development of mechanical methods of reproducing photographs in the actual printing plate (on which Talbot himself spent much time). One

exception, and coincidentally a Westcountry project, was the 1865 book on fossils of the Bristol area, *Palaeontologia Bristolensis*, by William W. Stoddart (1824-1880). This has been considered the first published attempt in the United Kingdom, and with one exception the first attempt anywhere, to illustrate palaeontology by photographs (Tutcher, 1933, p. 339; Crane, 1985 MS.). However, these problems of producing finished prints cannot have been the issue for the Survey, who were seeking to mechanise the initial process of conversion of the specimen into an image, before that drawing was transferred by hand onto the printing plate. From the surviving (but one-sided) correspondence, the problem for the Survey might have been some legal or financial issue arising from Talbot's patent of the calotype process. Perhaps also there were seen to be practical problems such as the dependence on bright sunlight (Schaaf, 2003). Élie de Beaumont commented in his letter to Talbot that the French experiments at the *École des Mines* had failed because the resulting photographs were too small, and they needed to build a larger setup. However, there might have been more profound problems. When, in 1839, Talbot sent sample photographs of mosses to his fellow botanist William J. Hooker (1785-1865), to show their value in botanical research, Hooker's seemingly counterintuitive reaction was that photography was, on the contrary, much more useful for copying botanical *drawings* – which, of course, incorporated selective observation, as well as an effort to make the salient features in question particularly clear (Secord, 2013; CWHFTP 3895, letter of 21 June 1839). This was more useful for showing other botanists and for making the original author observe and analyse the plant. It was probably no coincidence that Talbot was particularly interested in mosses, which are relatively simple plants, or that the earliest botanical equivalent to Stoddart's book was Atkins (1843-1853) on seaweeds, also rather simple plants. For that matter, the type specimen of *Stagonolepis*, mentioned above, consists largely of flat, scaly armour. One of us (MAT, admittedly a vertebrate palaeontologist working on complex fossils) had a similar reaction to Hooker's: with some exceptions in the case of flattened or simple specimens, photographs of fossils are poor substitutes for the actual specimen when trying to create a publishable drawing of an unfamiliar object which is comprehensible to the viewer, especially if the engraver or lithographer does not have the actual specimen to hand. Even today, when the conversion of photograph to printing plate has long been extensively mechanised (partly thanks to Talbot himself), it is common to publish only drawings of fossils (though perhaps with the outline taken from a photograph), or a combination of photographs and what are effectively interpretive drawings. A further issue is that even orienting the photograph is itself a scientific decision: which way is up, down ...?

It remains possible that this meeting inspired Talbot to take the Chudleigh photographs; but there is no actual evidence for this. Despite some evidence that De la Beche showed interest in field photography in 1850 (Sharpe and McCartney, 1998, items 807 and 1196), the Geological Survey did not appoint its own photographer till 1891 (McIntosh, 2013). This is not surprising, as photography was a specialist art with expensive and cumbersome equipment, and geologists were already accustomed to use the more reliable and much more portable field sketchbook.

CONCLUSIONS: THE SIGNIFICANCE OF THE PHOTOGRAPH

To answer our first question, the woman in *The Geologists* is, fairly conclusively, not Anning – a useful if disappointing conclusion for historical work and public interpretation of this popular figure. We do not try to say whether the man is De la Beche, though note his apparently abortive links with Talbot. But we are unable to resolve the wider question of the subjects' significance, apart from demonstrating the uncertainty about

whether the subjects were practicing geologists at all; their fine dress is surprisingly unhelpful here. R. Taylor (2007, p. 14) cited *The Geologists* in a discussion of Talbot's belief that photography was a happy union of art and science. In an utilitarian sense, however, it seems a bad photograph of a rock; the figures get in the way, being too big to add scale to a primarily geological image. However, our identification of a sister image, of the rock face alone, raises the possibility that *The Geologists* was a primarily artistic composition – or perhaps a light-hearted joke – taken at the same time as a wider and more 'geological' shot, conceivably the main purpose of the visit.

Brusius and Ramalingam (2013, pp. 1-24) have recently argued that research on Talbot's work too often focuses on aesthetics alone, and that it should take a wider and more pragmatic approach in the context of a nuanced understanding of Talbot's interests. We hope that our analysis, with its eclectic range of evidence, satisfies this; and we now turn to the practical issue of *why* Talbot chose Chudleigh as a location.

Which geologists influenced him, if any did, and might they be in the photograph? We have not found much evidence for De la Beche; but there are other possibilities in Talbot's family. One was obviously Talbot's cousin Mary Talbot noted above (also suggested by S. Davies, S. Pilaar Birch pers. comm. 2014), and another was his uncle Sir Charles Lemon, F.R.S. (1784-1868), then President of the Royal Geological Society of Cornwall. Amongst Talbot's friends, an obvious suggestion comprises Walter Calverley Trevelyan, F.G.S. (1797-1879; from 1846 Sir Walter Trevelyan, Bt.), and his wife Pauline, later Lady Trevelyan (1816-1866) (e.g. CWHFTP 727). They are best known today for her patronage of the critic John Ruskin (1819-1900) and the Pre-Raphaelite artists. But Walter was a friend of Talbot's from their school days, and a keen geologist. He was interested, amongst other things, in Devon bone caves, including Chudleigh, where he was seemingly instrumental in obtaining permission from the landowner, Lord Clifford, for William Buckland to excavate the Pixie's Cave in 1825 (Pengelly, 1873, pp. 52-53; Sommer, 2007, p. 82). The Trevelyans were resident on a family estate not far from Chudleigh, at Nettlecombe in northwest Somerset, for part of early 1843 (Batchelor, 2006; Trevelyan, 2011). However, they should probably be ruled out. Walter's diary for this period shows visits to the Exeter area in March/April 1843, but not to Chudleigh (NUL). Also, and more importantly given the uncertainty of the 1843 date, Walter was much taller than the petite Pauline (Schaaf, 2010, fig. 3). Like him, the man in *The Geologists* is skinny, with straggly hair, but is obviously of only moderate height by comparison with the woman beside him, who seems too substantial to be Pauline. The Trevelyans' own interest in calotype photography raises the possibility that they took the image, though they started practising it only in 1844, too late for the nominal 1843 date of *The Geologists* (Schaaf, 2010).

So do the photographs record a joint outing by photographer and geologist (or geologists)? Chudleigh was a stop on the main post coach road from Exeter to Plymouth, a natural route for Talbot to visit his in-laws Lord and Lady Mount Edgcumbe at their Cornish seat. Indeed, in April 1843 Lady Caroline and her son were staying at Chudleigh en route from London, whence she wrote to Talbot (CWHFTP 28858; this obviously, but so far only very hypothetically, suggests another identity for the couple in the photograph, though in that case taken by someone other than Talbot). Talbot took photographs at the Edgcumbes' house and at nearby Carclew Park, seat of Sir Charles Lemon, during the period 1841-1845 (Schaaf, 2000, images 43-45, 98, pp. 118-123, 228-229), so he was plausibly passing through Chudleigh with his equipment. Given his cumbersome gear (though he did develop a lighter camera for travel in 1844, not far off the presumed date of this photograph), Talbot might have selected the rocks at Chudleigh simply because it was a conveniently accessible location just off the main road and along a quarry track.

However, the possibility that *The Geologists* weren't actually geologists raises the further question of whether the rock in the image was actually a geological site, so to speak. No doubt

because of that same accessibility which enabled Talbot to photograph it, Chudleigh was not just a geological locality but seemingly something of a visitor attraction. As Pengelly's review (1873) shows, the scenery around Chudleigh Rock and Black Rock, with its dell and Pixie's Hole cave, complete with fairy or rather pixie stories, was a picturesque attraction, evidently suiting Romantic tastes of the time, and highlighted in tourist guides (e.g. Brewer, 1820; Anon., 1843; Sommer, 2003) and local topographies (e.g. Blewett, 1832; Jones, 1852). Perhaps Talbot's selection had nothing to do with geology, and should, rather, be seen as fitting with his images of romantic spots such as Loch Katrine and Dryburgh Abbey (Schaaf, 2000, pls. 86-88, pp. 204-209). Certainly, as those two last selections hint, he was fond of the works of the novelist Walter Scott, buried at Dryburgh (Smith, 2013) – but in those days many a geologist also liked Romantic novels and poetry (Sommer, 2003). Of course, Chudleigh might have been chosen for both geology and Romantic sublimity.

The Geologists might not be geologists. The subjects have neither tools nor collecting baskets. The photograph might be a personal and even affectionate memoir of a joint outing, meaningful only to the participants; a tongue in cheek joke with two friends, its title typical early Victorian whimsy; or a serious composition without deceptive intent. None of this prevents Talbot's intention from having been to portray two geologists at a site of genuine interest, where he metaphorically focussed not so much on the participants' identity, but their interest in the rock face. The figures' dress and their recreational activity make their social position clear. But one is left to guess whether the man is expounding something to the woman, or whether he just happens to be the one with the walking stick conveniently to hand, and also about their relationship: mother and son, wife and husband, two friends, or a pair of Talbot's servants dressed up and posed? Be all that as it may, and bearing in mind that it is the viewer as much as the photographer who decides the answer to those questions, *The Geologists* remains an intriguing image, perhaps the earliest surviving photograph purportedly of Westcountry geological activity. It may also be the earliest photograph of a woman involved in geology – though it is not the earliest published *image* of a Westcountry geological female, being trumped by an 1825 lithograph set (inevitably) at Lyme Regis (Fowles, 1982, p. 40), while pictures of women engaged in geology, or at least viewing geological phenomena such as Vesuvius and the Giant's Causeway, date back to 18th Century images of aristocratic tourists (Rudwick, 2005, figs. 1.10 and 1.15). We hope that future research within the Talbot papers and photographs will throw light on this intriguing episode at Chudleigh.

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