On the Origins of Architectural Photography
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The refinement of photographic processes during the 1830s culminated in the announcement to the public in 1839 of two quite different techniques - originating in France and England - for producing a permanent positive image. Both involved the use of a homemade camera box with a lens.¹ That of Louis-Jacques-Mandé Daguerre, which captured the object on a silver-plated metal ground (the daguerreotype), achieved a significantly greater precision of detail but was limited to unique positive images. That of William Henry Fox Talbot, based on the production of a paper negative from which large numbers of positive prints could be made, was more effective in providing multiple copies and thus widespread access to visual information.²

In the early years of photography, when long exposures were required, architecture and landscape subjects were favoured partly because they did not move, but also because they satisfied a growing interest among the bourgeoisie in the world beyond everyday experience, manifested as well in an increase in travel - previously the prerogative of a privileged minority. Talbot capitalized on this feature of his work by publishing books of photographic prints (such as Sun Pictures of Scotland, 1845) that appealed to the current culture of romanticism and to the proponents of medieval revival: castles, ruined abbeys, ancient country houses, and the undisturbed moors and downs celebrated by Wordsworth and Sir Walter Scott, whose castle Abbotsford appears in three of Talbot's prints.

My interest in early architectural photography grew out of my studies on the beginnings of post-antique architectural drawing. I found that the basic conventions of architectural drawings were established already in the thirteenth century and that, in spite of the great diversity of architectural styles from that time to the present, there were, prior to the introduction of computer-aided design, no fundamental changes in the materials and conventions of drawing; the plan, the elevation, the transverse section, and the perspective, realized with a hand-held drafting instrument, constituted the basic vocabulary of the architectural image.³ This investigation prompted me to examine the origins of architectural photography, which likewise appeared at a particular date and likewise manifested fixed conventions that remained relatively stable in the course of over a century and a half, though the evolution of photographic technology permitted a periodic improvement in the potential of the craft.

A first topic of interest is how the first photographers, equipped with a new means of representation, decided how buildings ought to be depicted: they had to rely, of course, on the preexisting representation of buildings by graphic means. Then, because the function of most early architectural photographs was to document buildings, we need to examine when and how a photograph may be identified as a document, and when and if such a photograph may become also a work of art. We might further consider what determined the photographers' (or their employers') decision to record certain buildings and not others, at home and abroad - a search that leads to issues of nationalism, imperialism, and colonialism.

Talbot in 1877 wrote: "In the summer of 1835 I made in this way [i.e., with the use of small camere obscurae and short-focal-length lenses] a great number..."
of representations of my house in the country which is well suited to the purpose, from its ancient and remarkable architecture. And this building I believe to be the first that was ever yet known to have drawn its own picture. Like many early photographers, Talbot, a mathematician, physicist, and chemist who kept in close contact with the scientific community, was unaware of - or unwilling to admit - the extent to which photographic images cannot be defined simply as reflections of reality but must depend on various elements of choice (of subject, position, framing, lighting, focus, etc.) that reflect and address the ideology and taste of their time. He must, however, have appreciated the degree to which the techniques of photography themselves imposed certain expressive results (for example, the speed of exposure, the capacities of the lenses, the graininess resulting from the use of paper negatives, the tonal effects of coloured objects, which are altered as they are transferred to the black-and-white gradations of photographic emulsion, etc.). The photographs of 1835 have not survived; probably they preceded the discovery of the essential fixing chemical. But in 1844 Talbot included several images of Lacock Abbey (fig. 1) in a volume entitled *The of Nature*. They are casual in their choice of viewpoint and, as is emphasized in the accompanying text, were intended less as a record of an architectural subject than as an evocation of a romanticized medieval past. On the one hand, they are simply experiments with the medium and its materials; on the other, they are offered as evidence of the author's taste and status.

**Fig. 1** William Henry Fox Talbot, photographer: The Reverend Calvert R. Jones, in the Cloisters, Lacock Abbey, Wiltshire, England, probably 9 September 1845, salted paper print, 16.4 x 20.5 cm (composition), PH1981:0536, Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montréal

Books and paintings had nurtured interest in romantic and medieval subject matter since the early years of the nineteenth century. Large-scale, often multivolume publications on medieval architecture with engraved illustrations and extensive historical and descriptive texts were widely available in England and France. Augustus Charles Pugin, father of the influential spokesman for the Gothic revival Augustus Welby N. Pugin, devoted his career to making drawings for the cutting of engraved plates in such publications (fig. 2). Illustrations of this type established conventions of architectural representation that were adopted, no doubt unconsciously, by photographers: the positions from which to shoot the facades and apsidal ends of churches, the interiors, the choice of details.

**Fig. 2** Augustus Charles Pugin and G.B. Moore, delineators; J. Le Keux, engraver: perspective of western front, church of Saint-Étienne, Caen, from John Britton, *Historical and Descriptive Essays Accompanying a Series of Engraved Specimens of the Architectural Antiquities of Normandy* (London: J. Britton, 1828), fig. 8, Richardson Archives, GSD

Church interiors presented other challenges to early photographic representation; I offer an engraving from Henry Gally Knight's *Architectural Tour in Normandy* (fig. 3.), to be compared with Roger Fenton's photograph of the ruins of Tintern Abbey (fig. 4). Most churches with intact vaulting would have been too dark to photograph with the early lenses. The engravings were inevitably more interpretive than early photographs: the technique, requiring incising fine lines into metal plates, could not convey the nuanced effects of
light and shade available to the photographer, and the style and "hand" of the engraver usually exerted a greater influence on the way the object was interpreted than the disposition of the photographer. On the other hand, the camera had - and still has - limitations that did not affect the draftsman. For example, it frequently could not capture the whole of a large-scale church facade with its towers as seen from ground level - or an interior with its vaults - without distortion due to the nature of the lens, especially in sites cramped by surrounding buildings (the engraver could simply eliminate irrelevant obstructions at will). When possible, the photographer sought elevated positions on the upper floors of neighbouring buildings. He could not, prior to the invention of artificial illumination, capture ornamental and structural detail in poorly lit places. In the end, both techniques were profoundly affected by convention and manner; they involve misrepresentation as well as representation. The photograph prevailed over the engraving, however, because it could be produced and distributed more rapidly, and hence in greater quantity, more cheaply, and by practitioners less arduously trained.

This pair of images (figs. 3 and 4) sustains my conviction that the new has to be based on the old, that innovation is invariably tempered by convention. Another comparison (figs. 5 and 6) makes the point even more persuasively, because, while the options for finding a position suited to representing church exteriors and interiors are limited, the more panoramic type of presentation shown here (a view of the Acropolis in Athens from the area of the Agora) would permit the photographer a very wide range of positions both in lateral extension and forward-and-back. Yet the Greek photographer Dmitrios Constantinou in the 1860s hit upon almost exactly the same vantage point for his camera (fig. 5) as the draftsman responsible for the equivalent view in the widely acclaimed Antiquities of Athens, the first volume of which was published a century previous by two British architects, James Stuart and Nicholas Revett (fig. 6). Like other model books of the eighteenth century, this one was devoted entirely to carefully drawn details presented in elevation and intended primarily for use by architects designing in the classical style; this view was one of a small number in the third volume. The similarity is probably attributable not only to architectural conventions: both images reveal a debt to classical landscape painting in the tradition in which a distant view is framed on one or both sides by a temple in the foreground.
Indeed, the architectural photographers’ models are found not only in the work of architects. The long tradition of elegiac landscape painting incorporating architectural elements, with roots in the mid-seventeenth century in the work of artists such as Claude Lorrain, working in Italy, and Jacob van Ruisdael in Holland, had stimulated in the late eighteenth and early nineteenth century a taste for what theorists of architecture and landscape design called “picturesque.” And landscape and topographic subjects, a large portion of which involved the representation of notable buildings, especially medieval ones, became a major genre of British painters, particularly watercolourists, in the early years of the nineteenth century. Early British photographers, from Talbot on, echoed the paintings of J.M.W. Turner and John Constable, especially in their approach to ecclesiastical monuments. When Roger Fenton chose, in photographing the cathedral of Ely (fig. 7), to favour foliage over architecture in such a way that one can find out very little about the building, he must have had in mind John Constable’s views of Salisbury Cathedral rather than the interests of archivists or architectural historians.

It is impossible for these reasons to distinguish clearly a “documentary” style of early architectural photographs from an interpretive one. Many photographers practicing the medium in its first decade would have agreed with the statement by Talbot that photographs make themselves - that is, that they are transparent records of what is in the world, and that this is what gives them their special status among images. Indeed, the attempt, widespread after the mid-nineteenth century, to discuss and exhibit as works of art those photographs in which personal taste or style is found would, I believe, have struck the early practitioners as an attempt to deny them the uniqueness of their enterprise. In effect, from the early photographers’ point of view, photographs were, by virtue of the conditions of their making, all documentary. Today photography is universally included in the roster of the fine arts, and it is the concept of a class of images defined as “documentary” that remains unresolved. I suggest that, while some photographs may be used as documents, and while some photographers and those that commission their work may wish to produce documents, this intention does not suffice to differentiate their work from other photographic images; the documentary character is not intrinsic to the image. It is or is not in the eye of the beholder.
In the early years of the medium many photographers were engaged, particularly in France and England, to carry out programs documenting national monuments. In 1851, the French government launched the Missions Héliographiques, assigning each of five specified regions to one of the pioneer photographers chosen by the Historic Monuments Commission (Édouard Baldus, Henri Le Secq, Hippolyte Bayard, 0. Mestral, and Gustave Le Gray). This is an example of the production of photographs defined as documentary by the nature of a commission. Baldus also was employed in the 1860s to provide a survey of structures serving the national railway system; his image of the shed of the station at Toulon (fig. 8) is characteristic in its simplicity and clarity and in the photographer's capacity to see in industrial architecture a striking new category of building, comparable to the new category of image in which it was represented. Since the purpose of the documentation programs was to assemble archives of permanent relevance, the photographer was obliged to restrain as far as possible personal inclination and appeal to the taste of his time. This is implied by the statement issued in 1857 on the founding of the Architectural Photographic Association in England, on the model of the French Société Héliographique, calling for the "procuring and supplying to its members photographs of architectural works of all countries," with an eye to benefiting "the architectural profession by obtaining absolutely correct representations of these works, and ... the public, by diffusing a knowledge of the best examples of architecture and thereby promoting an increased interest and love of the art." 

A recent study has revealed one of the most intriguing instances of the ambiguity of the concept of documentation: the commission awarded by the French Ministry of Public Instruction to a painter and amateur photographer, Auguste Salzmann. Salzmann was engaged in 1854 to produce a set of calotype photographs of the architectural monuments of Jerusalem (fig. 9) intended to validate a hypothesis of his friend, the archaeologist Ferdinand de Sauley. De Sauley's argument rested on evidence of chronology provided by the coexistence in certain sites of Jewish, Roman, and Christian masonry and construction, and these were to be the object of the photographer's attention. Salzmann returned to France with 150 prints, which he gathered in a publication of 1856 accompanied by an explanatory text; it was his only substantial production as a photographer. Beginning shortly after this work appeared, and with increasing fervour in the course of the twentieth century, Salzmann's photographs were discussed by critics as works of art the quality of which was attributed to the author's exceptional sensitivity to form, texture, and composition. Yet to Salzmann the photographs were nothing more than evidence; he insisted that they were "not narratives but facts endowed with a conclusive brutality" Moreover, over a third of the plates were the work of his assistant; not only did Salzmann fail to distinguish these from his own, but subsequent connoisseurship, though fixed on the auteur interpretation, has failed to separate the two bodies of work.
The expositions of the mid-nineteenth century revealed the ambivalence about whether photographs were to be seen and exhibited as triumphs of technology or as a new category of the fine arts. Photographs were included in the great Exhibition of the World’s Industry in the Crystal Palace in London, 1851, the account of which by John Tallis tells of a “vast number of sun-drawn pictures, on various sorts of surfaces.” He mentions talbotype landscapes and daguerreotypes of the moon taken through a telescope by two different Boston exhibitors. The most extensive and admiring section of the review is the description of a medal-winning device for recording what he describes as the "horary and diurnal variations of the barometer, thermometer [or] hygrometer" by casting a pencil of light onto a roll of sensitive paper on a moving cylinder. Tallis concludes with an account of the first experiments in colour photography. The celebrated journalist and editor Horace Greeley wrote the equivalent commentary on the New York Exhibition of Art and Industry, also held in a "Crystal Palace" in 1853-1854. His chapter devoted to "Daguerreotypes" appears between those on artificial flowers and on hats. In addition to plates on allegorical and dramatic themes, he discusses images of the passions, the moon, Niagara Falls, and a panorama of Galena, Illinois.

The French photographic critic Ernest Lacan published a book in 1856, *Esquisses photographiques*, 103 pages of which are devoted to a review of photographs exhibited in the Exposition Universelle in Paris (1855), a celebration of scientific and technological progress modelled on the London Crystal Palace exposition. The curators included a vast array of photographs, the largest ever assembled, arranged according to subject, favouring themes such as plant and animal species, races of the world, types of mental and physical illness, current events, military campaigns, and disasters. The section assigned to landscape and monuments prompted Lacan to speculate on photography's claim to be defined as a fine art. While he concluded that it cannot be "placée au rang des arts d'inspiration," he wrote of the photographer that it is "absolument nécessaire qu'il ait le sentiment du beau, c'est à dire, qu'il soit artiste."

Also intended as "objective" images were many of the photographs of monuments and frequented sites made commercially for mass distribution by entrepreneurs like Louis Désiré Blanquart-Evrard, who established in 1851-1852 a printing and marketing establishment to produce books, albums, and individual prints that could be ordered from a catalogue, which tended to repress idiosyncratic approaches in order to attract a variety of buyers. Photographs were used also to document the building history of important structures. Baldus, for example, was employed to track the building process of the new wing of the Louvre in Paris, and left thousands of prints, including a number of impressive panoramic images, in the archives; the same occurred in the construction of a major Second Empire enterprise, the Paris Opera. Charles Marville was commissioned to record the huge demolition work carried out under Baron Haussmann in his urban renewal scheme for the city of Paris.

Those charged with refurbishing medieval buildings also recognized the value
of photography as a support for the restoration and conservation of historic monuments. When Eugene-Emmanuel Viollet-le-Duc was appointed in 1847 to restore Notre-Dame in Paris, he ordered large numbers of daguerreotypes to document the existing state of the building, because of the exceptional capacity of the process to record fine detail; for his purposes, the fact that the images could not be reproduced in multiples was no drawback.

Of course, many photographs - knowingly or not - exploited the aesthetic potential of the medium and portrayed architecture expressively. In contrast to Le Secq's relatively "straight" record of the Church of the Madeleine in Paris (fig. 10) stands Bayard's image of the aisle behind the facade (1846-1848, George Eastman House, GEH 14357). The graininess of Bayard's print is due to the author's use of the calotype, in which he had been an unrecognized pioneer, having invented a process for producing direct positive prints. The photograph would not have recalled the impression of most visitors to the building; it is the record of a personal response, and its subject is as much the play of light and shadow as it is the church. This does not imply that Le Secq's photograph is a definitive record of the church; like the majority of architectural photographers of his time, Le Secq chose an elevated viewpoint that would not have been available to the casual visitor, so as to avoid parallax. (I do not believe, as has been suggested, that this typical decision was influenced by the orthogonal elevation standard in architectural drafting.) The "documentary" and the expressive photograph, however, were not necessarily the work of different photographers. Charles Nègre claimed that when visiting an architectural site he would take three kinds of photographs: for the architect, a general view "with the aspect and precision of a geometric elevation"; for the sculptor, close-up views of the most interesting details; and for the painter, a picturesque view capturing the "imposing effect" and "poetic charm" of the monument.15

Photography was closely linked to the strengthening of European nationalism in the first half of the nineteenth century. The programs launched to document particular aspects of each country's architecture underscored the nationalistic tendencies of the time; subjects were chosen, perhaps subliminally, to reinforce a particular conception of the significance of certain periods of the past. In France and England, later medieval architecture was emphasized; British photographers did not show much interest in Anglo-Saxon buildings, although those would best have represented an indigenous achievement emphasizing architectural independence from France. This might be explained by the emphasis placed on late medieval sources by the contemporary promoters of the Gothic revival. Renaissance, baroque, and contemporary architecture attracted less attention in Britain and France, except for major public enterprises in the capital cities, though in Italy the Renaissance style, regarded as one of the major cultural achievements of the peninsula, accounted for a large proportion of the output. Italian photographers focused on urban architecture in major centres; few of the tourists who bought their prints ventured into the countryside looking for abbeys and villas.

Tourism, in fact, was a guiding force in the increasing demand for architectural photographs. The huge production of images, particularly of Greece and the Middle East, in the mid-nineteenth century was in part the result of a great growth in the culture and industry of tourism. During the
eighteenth century, most travellers, especially those of Great Britain, were persons of rank and wealth who frequently embarked on a *Wanderjahr*, a year spent, primarily by young noblemen, moving about the more familiar parts of the world to absorb foreign cultures and languages. Travel for pleasure and knowledge required both the economic and the cultural disposition to move beyond the borders of one's own homeland; it anticipated nineteenth-century imperialism and colonialism, an initial possession of other places and peoples. In the early years of the nineteenth century, the growth of industry and commerce attendant on the Industrial Revolution gave an expanding bourgeoisie a means of emulating on a more modest scale the predilections of the aristocracy - if not in the mould of the *Wanderjahr*, at least in vacation excursions.

Photographic studies of non-European lands, like those of national monuments, were anticipated in illustrated publications of the early years of the century, from the time of Napoleon's conquest of Egypt, reported in the *Description de l'Egypte, ou recueil des observations et des recherches qui ont été faites en Egypte pendant l'expédition de l'armée française* (Paris, 1809-1822). The favoured sites were Egypt, with a focus on ancient monuments (fig. 11), and the Middle East, with an emphasis on places in the Holy Land known from the Bible (fig. 9). Greece (principally Athens) and Rome (principally the city) were represented by a lesser volume of prints, and Turkey, despite its treasure of Byzantine monuments, was barely noticed. The photographers followed the trail of colonial conquest and the fashions of newly developed bourgeois travel and saw their subjects in the light of Orientalism, as strange and exotic echoes of a far-distant past now in the control of decadent and indolent peoples (many photographs of native costumes and customs were produced alongside those of architecture). Where human beings appear in the photographs they almost invariably seem to be labourers or vagrants (fig. 12), far removed from the self-presentation of enterprising western Europeans. Maxime Du Camp, who travelled to Egypt with his camera in the company of Gustave Flaubert in 1849, used figures to indicate the scale of the monuments (fig. 11). Not trusting the local inhabitants to hold still for long exposures, he regularly impressed a young Muslim sailor from his crew, for whom he provided suitably Oriental costumes.

Two functions of the architectural photograph particularly relevant to my purpose are its use by the historian of architecture and by the architect as a resource in designing new buildings employing reference to historical styles. For the architectural designer, photographs can provide a rich resource and stimulus. The fact that photography became available at the height of the
medieval revival and of the taste for the "picturesque" makes this especially evident. In contrast, architects working in the classical revival style (which continued to be practiced alongside the medieval revival) found measured plans, sections, and elevations in the tradition of Stuart and Revett's *Antiquities of Athens* (1762) and Charles-Louis Clérisseau's *Antiquités de la France* (1778; on the Roman remains at Nîmes) more useful than photographs, because the strict rules of classical composition and proportions could be conveyed more effectively in precisely measured architectural renderings. Publications addressed to the growing interest in the medieval revival and picturesque architecture emphasized pictorial effects of massing, contrasts of light and shadow, texture and colour, richness of ornament, all of which could be captured more effectively by the camera than by the draftsman and engraver. But possibilities for early architectural photography had already been suggested during the first three decades of the nineteenth century by new techniques of printing - the lithograph, the aquatint, and the mezzotint - which were employed increasingly to convey these aspects of architecture and were the principal vehicles for the diffusion of the picturesque; most of the villa and landscape publications employed these techniques (J.B. Papworth's *Rural Residences* of 1813 is an example).

Photographs provided a resource that not only expanded the designer's knowledge of familiar historical traditions but extended the scope of his knowledge to a wide spectrum of historical styles less accessible at first hand, especially those of Egypt, Byzantium, and the Middle East. In France, the influential Second Empire style promoted by the École des Beaux-Arts employed a rich amalgam of ancient, Renaissance, baroque, and rococo elements and ornamental motifs that made photographic archives a virtual necessity for practitioners.

In the second half of the nineteenth century, architects increasingly became the patrons of photographers, as it became evident that photographic portfolios could serve as a way of spreading awareness of their works and attracting clients. Shortly after the journal *American Architect* began to illustrate buildings with photographs in 1876, the architect Henry Hobson Richardson began to sponsor photographic campaigns surveying his major buildings. He was the first designer to be published in the Monographs of American Architecture, started in 1886; two years later, Mrs. Schuyler van Rensselaer published *Henry Hobson Richardson and His Works*, the first study of an architect illustrated with large-scale photographs (fig. 13), and at the same time the first scholarly historical-critical study of a contemporary architect.21

The photographs of the buildings of Richardson and his contemporaries lack the vividness and imagination of architectural images prior to mid-century. The excitement of the new technique had worn off, and almost all the painters and engaged amateurs of the first decades had gone on to other interests, leaving the field to commercial establishments devoted to recording buildings on the demand of architectural firms and trade publications.

Moreover, while propagandists had insisted on establishing photography as a fine art, it never was more than a complex of techniques, though one that a few practitioners could utilize for artistic purposes. The camera by itself, with
the aid of someone to place it and open its shutter, could record buildings, people, or scientific data effectively without expressive enrichment. Of course, a painter or sculptor can employ the tools of the artist without achieving expressive enrichment, but the result is just bad art and nothing else, while the commercial photographer employs the available technology to produce a useful record that need not be more than that. The photographic archive of Richardson, an impassioned collector - largely of medieval French architecture - was employed to stimulate and to give authenticity to his characteristic Romanesque revival style; the majority of prints were commissioned from local photographers, most of whom probably made a living from portraits and weddings. They are dull, but they served him well.

Toward the end of the century, innovative photographers (Frederick H. Evans, Edward Steichen, Alfred Stieglitz, Eugène Atget) turned away from a documentary approach and employed architectural subjects in the expression of a distinct personal style. For modernist architects, beginning in the second decade of the twentieth century, images of historical architecture were of less concern, but powerful photographs of contemporary work, particularly buildings by the most eminent architects (notably those of the Bauhaus at Dessau taken by Lucia Moholy), affected the spread of the style.

The modern history of architecture had its origins in western Europe at about the time when photographs of buildings became available to scholars. Photographs did not create the discipline, but without them opportunities for the development of sophisticated research methods would not have been available to scholars who previously had had access only to drawings and traditional prints. A method grounded on systems of classification could not be developed without the capacity to make comparisons between buildings and groups of buildings. Photographs are fundamental to the practice of historical research and interpretation because they give the scholar an almost infinitely expandable collection of visual records of buildings and details of buildings in his or her area of research. With the development after the mid-nineteenth century of fine long-focus lenses and increasingly sensitive negatives permitting rapid exposure, many aspects of buildings could be revealed in photographs that were not accessible to the naked eye, whether due to their distance from the ground or the obscurity of detail in dark interiors. On the other hand, photographs mislead in many ways, beginning with their incapacity to represent size objectively and the ease with which the lens may be moved laterally, raised or lowered, tilted and swung in relation to the sensitized plate. But, while there can be no effective substitute for experiencing buildings at first hand, our memory is incapable of storing all of the visible aspects of any one, much less the entire achievement of a particular body of work.

Perhaps under the influence of the taxonomic method in science (in the botany of Linnaeus and others, for example), photographs must have stimulated the classification of works of art according to style - the style of a historical period, a nation, an area, or an individual designer. This required a method based on comparison - establishing a class of production through the determination of common traits among different objects. Comparative judgments with respect to style were also necessary to support a narrative of evolutionary change that already had been a feature of literary and art criticism in antiquity and the Renaissance. To this end, photographs became indispensable in ways that drawings and engravings could not be; in consulting a graphic work we have no way of determining how accurate a record it is, while the photograph, though by no means a transparent reproduction, contains some clues as to its degree of documentary reliability.

It is difficult to define precisely the motivations underlying the early photographers' choice of architectural subject, because we cannot be sure
what portion of the photographic work of the period has been preserved. Moreover, we who are nonspecialists know of early photography primarily through publication, which has emphasized the achievement of only a few countries, and two of them, England and France, to a disproportionate degree. But, accepting these limitations, we can still see in the early history of architectural photography two basic principles. First, that modes of representation are not significantly altered when new techniques are discovered, but perpetuate preexisting conventions; and second, that representation itself is not a reflection of some "reality" in the world about us, but is a means of casting onto that world a concept - or subliminal sense - of what reality is.


[Notes]


2. Talbot's prints were originally called talbotypes but were soon renamed calotypes. At about the same time Hippolyte Bayard in Paris produced direct positive prints in the camera that could be reproduced in multiples only by photographing them again. But because Bayard, who was an exceptional photographer, lacked the ability or interest to promote his invention effectively, he was given less credit than the others. In the course of the 1840s rapid improvements in paper "film" techniques were developed, especially in France. See Claude Gautrand, Hippolyte Bayard, naissance de l'image photographique (Amiens, 1986).


5. Carol Armstrong devotes chapter 2 of her admirable book to a discussion of The Pencil of Nature, including the Lacock Abbey pictures, emphasizing the author's revelation of upper-class nationalism and pride in the ownership of property evocative of medieval history and myth.

6. See, for example, Bill Jay and Dana Allen, eds., Critics, 1840-1880 (Phoenix: Arizona Board of Regents, 1985), an anthology of early English criticism from the photographic journals. Almost all of the selections, driven by naive efforts to establish photography as a fine art, are unclear about what qualifies any production for that designation. John Ruskin, a more sophisticated critic, was enthusiastic about the use of daguerreotypes as an aid to his early researches in Venetian architecture and sculpture, but later

7. My thinking about the problem of "documentary" photography was clarified particularly by the study of Joel Snyder, "Documentary without Ontology," *Studies in Visual Communication* 10 (1984), 78-90.


Library, 277ff., indicates the need to interpret photographs in illustrated books (particularly Frith's volumes on the Middle East) as they interact with the text. Frith presented his text as illuminating his images, rather than the reverse.


22. The Richardson photographic archive of some 3,000 prints is preserved in the Loeb Library of the Graduate School of Design at Harvard University. The architect studied in the École des Beaux-Arts in Paris in the early 1860s, which did not encourage emulation of the Romanesque style. His interest in that period developed after his return to America, and he assembled his photographic archive by ordering from across the Atlantic; the major French photographers discussed above are not represented.

23. I am indebted to Ralph Lieberman for many insights into the role of photography in the history of art, the dangers of historians' overdependence upon it, and, in general, the limits of representation in architectural photography. See his essay "Thoughts of an Art Historian / Photographer on the Relationship of His Two Disciplines," in *Art History through the Camera's Lens*, ed. Helene Roberts and Mary Bergstein (Langhorne, Pa.: Gordon and Breach, 1995), 217-246.
Last week I spent a frigid couple of days in the far northern part of Wisconsin with Poul Ober, an architectural photographer, so that we could get professional images captured of the modern cabin I wrapped up in this area earlier this year. This is Poul Ober, an architectural photographer who also happens to be my next-door neighbor. He is Danish and I am Norwegian and neither one of us let’s the other forget it. Poul and I have known each other just about two years and we get along pretty well, share similar interests, and tend to make the same sort of jokes. The original Löwenmensch fragments—some 200 of them—were discovered in 1939, on the eve of World War II, by Robert Wetzel, a professor of anatomy at Tübingen University, and a geologist named Otto Völzing. Wetzel had hoped to work on the pieces of mammoth tusk when the war ended, but they sat untouched in a box for 30 years. Then, in 1969, archaeologist Joachim Hahn pulled them out and began to piece them together like a three-dimensional puzzle.