II. History and influence.

In the 20th century images produced with the camera, conveyed in both printed and electronic form, became a ubiquitous means of communicating information and arousing emotions. The photograph first appeared towards the middle of the 19th century. Initially it answered the need of members of the rising middle class for easily produced pictures of themselves and their possessions, and its earliest subject-matter included portraits, topographical views and renditions of architectural structures. At the same time the photographic image satisfied the taste for accurate representation, which had been gaining strength in secular societies since the Renaissance. As such, it can be seen as the culmination of a long interest in optical phenomena. The optical characteristics of the CAMERA OBSCURA, for instance, had been noted in China and the Western world since Antiquity and used by artists since the 16th century. The understanding of the solar spectrum and its effects on chemical substances was more recent, but knowledge that the darkening of silver halides was caused by exposure to light became available in the early part of the 18th century. Increased efforts in the early 19th century to make use of such knowledge in order to find a process whereby light could render images suggests that the time had come for the separate pieces of this knowledge to be united for practicable purposes. This need resulted in the nearly simultaneous announcements c. 1839 of discoveries in England and France, which evoked immediate interest in the rest of Europe and in the USA.

1. Early trends.

The two main systems initially invented for making pictures using the reaction of chemicals to light were the daguerreotype and the calotype (see §I). The daguerreotype, named after LOUIS DAGUERRE and originally discovered by his compatriot and partner NICÉPHORE NIÉPCE, produced a picture on a silver-coated copper plate. Despite being reversed, the image visible on the polished metal surface—both a negative and a positive depending on how the light falls on it—appeared to be a highly defined authentic representation of the subject. The daguerreotype image itself was unique, and the image surface was easily destroyed unless encased in glass and frame. The calotype, a product of experimentation by the Englishman William Henry Fox Talbot, used paper as the basis for producing first a reversed negative image and then a positive that returned the objects to their proper tonal character and position. The inexact chemical knowledge of the time affected the stability of the calotype so that it had a tendency to fade, while the irregular paper grain produced a less finely detailed representation of visible reality.

Initially the daguerreotype process received greater public attention and backing than did the calotype. The French government indemnified the inventors in order to make the process available to all except British users, who had to purchase a franchise; this requirement no doubt reflected the competitive character of Franco-British relations. Within three months of the announcement over 9000 instruction manuals (in various languages) were sold, as information about the new picture-making process appeared in journals in Prussia, the Austro-Hungarian Empire, Russia, the USA and
elsewhere. The process, with its unique product, was particularly enthusiastically accepted in the USA, partly because it accorded with prevailing utilitarian notions about pictorial images and partly because it was seen, especially by one of its earliest supporters, Samuel F. B. Morse, as a way to improve the visual arts in a nation without strong artistic traditions.

When the daguerreotype process was first announced, only non-moving objects could be captured on the plate; the lengthy exposure time of half an hour required for images such as Daguerre’s Boulevard du Temple (c. 1838; Munich, Bayer. Nmus.) made portraiture impossible. Efforts to shorten exposure time and improve the definition and visibility of the image by using more efficacious chemicals and better optical elements began immediately and bore fruit; by 1851 daguerreotypists in Europe and the USA were turning out accomplished portraits, landscapes and urban views, including panoramic scenes. The latter might be produced with specialized cameras and plates, such as that designed by Friedrich von Martens in 1845 and used for daguerreotype panoramas of Paris, or by making contiguous plates of an area, as in the daguerreotype panorama of Rome by Lorenzo Suscipi (1841; London, Sci. Mus.).

Despite its capacity to provide more than one positive from a negative, the calotype was not as readily accepted as the daguerreotype, especially for portraiture. Furthermore, by patenting the process, Talbot initiated ten years of litigation, which restricted rather than promoted its commercial exploitation. In the late 1840s, however, the calotype began to interest a number of French practitioners, among them Louis-Désiré Blanquart-Evrard and Gustave Le Gray; both worked on improvements to give the image more stability and definition. In brief, Blanquart-Evrard changed the chemical substances to deter fading and improve tonal range, while Le Gray waxed the paper negative before sensitizing to achieve greater sharpness (see §I).

The inventions of Daguerre and Talbot were not the only such processes to be devised; interest in light-related pictorial phenomena during the early 19th century spurred others to experiment along similar lines. Hercules Florence (1804–79), a French artist, travelled to the Brazilian interior in 1833 and there worked out a process he actually called photography; his invention was not rediscovered until 1973. Experimentation early in 1839 by another Frenchman, Hippolyte Bayard, resulted in a direct-positive process, achieved by chemically darkening a sheet of paper and allowing light coming through the camera to act as a bleach. Ignored by government officials who were supporting Daguerre, Bayard eventually switched first to the calotype and then to wet collodion.

The wet collodion process (see §I), introduced by Frederick Scott Archer in 1851, resulted in a well-defined image that had pronounced commercial possibilities, despite the fact that in order to make exposures outside the studio the photographer needed a portable darkroom. However, the problems of fading in the print, which now used silver salts in an albumen emulsion, had not disappeared, and efforts to make positives using other light-sensitive chemicals occupied a number of practitioners. Carbon prints (see §I above) were one result of this line of experimentation. Carbon sheets became commercially available in 1866 and for a short period appealed to photographic entrepreneurs, among them Adolphe Braun (see fig.) in France and Franz Hanfstaengl in Munich, whose enterprises required large numbers of permanent prints. Eventually, because of its malleability and permanence, the carbon process along with others using potassium bichromates became a favourite of those involved in photography as art. The Woodburytype process (see §I), introduced in the 1860s, produced a grainless print more quickly than the carbon process, but it had to be trimmed before insertion into an album, a book, or on to a mount, which added time and expense. As a consequence, the search for a method of producing photographs quickly, inexpensively and with permanence continued. Throughout the
history of photography the technological advances had a delimiting effect on the character of the image.

2. Portraiture.

As these processes were appearing, photographic images were assuming an important place in society. Their first major inroad was in portraiture. Traditionally, painted portraits were expensive objects, commissioned by the wealthy as testaments to their elevated position in life. With the emergence of a middle class of merchants, factory owners and bureaucrats, the need for less expensive methods arose. At first it was met by various traditional methods and devices. Both silhouettes and painted miniatures reduced the cost to the sitter, while the camera lucida and the physionotrace (a stylus attached to a series of levers that enabled the user to trace the sitter’s profile on to another surface) were aids to exactitude. Because these techniques still necessitated either time-consuming manual work or produced only profile views, photography (the daguerreotype in particular) was welcomed as a solution to the problem of inexpensive portraiture.

Nevertheless, at the moment of the daguerreotype’s invention, the required exposure time was too long for making portraits comfortably and successfully. Efforts to circumvent this situation led to the use of smaller plates (which, requiring less light from the aperture, were exposed in shorter time), to the improvement in lens manufacture, especially in the work of Josef Maximilian Petzval (1807–91) and Peter Wilhelm Friedrich Voigtländer (1812–78) in Vienna, and to cameras with built-in mirrors to focus light on the plate. In conjunction with the changes in the sensitization of the plates suggested by John Frederick Goddard (1795–1866) in England, by late 1840 the time necessary for exposure had been shortened to between five and eight seconds. Finer buffing of the silver surface before exposure and gilding in gold chloride afterwards made the fine tones of the daguerreotype image more visible, but despite these advances the absence of liveliness was noticeable, leading the better portraitists to enhance the image with coloured pigments.

The stunning exactitude of the daguerreotype portrait attracted large numbers both as practitioners and sitters, setting the stage for the commercialization of portraiture. Miniature painters, draughtsmen, engravers and artisans, including some women but mainly men, set themselves up in the portrait business, either in more or less permanent premises or as itinerants who took their equipment and darkroom from town to town. Some became entrepreneurs, taking accessible rooms in fashionable parts of the city, furnishing their salons richly and even hiring operators to expose and process the plates. ANTOINE CLAUDET and Richard Beard (1802–85) in London, the Bisson brothers in Paris, HERMANN BIOW and CARL FERDINAND STELZNER in Hamburg, and MATHEW B. BRADY and the Meade Brothers in New York, were among those who recognized the financial potential of a business that might appeal to the highest and lowest strata of the bourgeoisie.

The best of the daguerreotypists sought to turn out technically and artistically creditable products by paying attention to pose, expression and lighting as the means of revealing more than superficial appearances. The desire to probe the inner person, which derived from the ideas of the 18th-century physiognomist Johann Kasper Lavater, was basic to all early portraiture; it can be seen in the elegant work produced by the firm of SOUTHWORTH & HAWES in Boston between 1843 and 1861, as in the undated portrait of an Unknown Lady (Boston, MA, Mus. F.A.) and that of Henry Wadsworth Longfellow (c. 1850; New York. Met.).

Because the calotype rendered form with less sharpness and detail than the daguerreotype, it
proved less attractive for commercial exploitation. Its chiaroscuro style, however, was felt more appropriate to photography as art. For instance, the simple poses and dramatic lighting in the calotype portraits produced in Scotland during the mid-1840s by the team of HILL AND ADAMSON were admired by a wide range of artists and literati who likened the calotype's 'painterly' effects to the work of Rembrandt or Joshua Reynolds (see fig.).

When the wet collodion process appeared in 1851, it was welcomed as the solution to a host of problems. It produced a sharp negative capable of duplication, and the final print (on albumen coated paper) was less fragile and less costly than the daguerreotype and more permanent than the calotype. Two interim processes, one on glass (the ambrotype or collodion positive) and the other on metal (the ferrotype or tintype; see §I) produced unique images less expensively than was possible with a silver-plated base. Packaged in a case or enclosed in a cardboard mat, such images were especially popular in the USA during the Civil War (1861–5) because they were inexpensive and easy to send by post.

The substitution of the collodion negative and albumen print for both the daguerreotype and the calotype enabled an unprecedented expansion of portraiture on all levels. Fashionable studios, notably those of Brady, Hanfstaengl, Antoine-Samuel Adam Salomon, André Adolphe Eugène Disdéri and Camille Silvy invested in increasingly elegant furnishings and posed sitters to underscore their position in the community. As portraitists in nearly every major city took over the painter's task of representing society to itself, they embraced the painter's aesthetic concepts as well, as is evident in numerous images that rely on painting for ideas about costume, setting and pose. In fact photography and painting were often conjoined, as many studios produced camera portraits that were then painted over, at times obliterating the photographic base entirely.

Commercial expansion brought in its wake greater flexibility in terms of size, pose and presentation. One significant development was the carte-de-visite (see §I), a small-format portrait patented in France by Disdéri in 1854 and soon emulated everywhere. A number of different poses, full, half-size or bust only were printed on a single sheet and then cut apart and mounted individually. This procedure allowed greater naturalism and variety at lower cost, which accounted for its remarkable popularity, and it enabled those on the lower end of the economic scale to sit for their own portraits and to own photographic portraits of friends or relatives. More affluent individuals, among them Queen Victoria, indulged a fancy for collecting such images and brought the carte added cachet. In that they could be duplicated almost endlessly (by newly invented photographic printing machines) and sold or distributed widely, carte images greatly enhanced the taste for celebrity portraiture in all formats. This too became a substantial business, exemplified at its best by the work done between 1860 and 1885 in the studio of Nadar in Paris.

With the invention of the carbon and Woodburytype processes (see §I), periodicals and books began to feature the likenesses of artists, musicians, literary figures, statesmen and scientists. The best-known compendium of this nature is the French Galerie contemporaine, published by Goupil & Cie between 1876 and 1884; the portraits were made by a number of photographers, the most notable being Nadar, Etienne Carjat and Pierre Petit, all of whom sought to evoke character mainly through expression, pose and lighting rather than costume and décor, as in Carjat's portrait of Gustave Courbet (1877–78). Besides publishers, individuals such as Hanfstaengl in Germany and portrait firms such as Elliot & Fry (active 1863–1963) in England produced images and biographies of renowned national figures. In the USA, where Brady had published A Gallery of Illustrious Photography, §II: History and influence in Oxford Art Online http://www.oxfordartonline.com/subscriber/article/grove/art/T0...
Americans (12 portraits reproduced as lithographs by François D'Avignon, New York, 1850), carte images of celebrities were most popular; President Lincoln attributed his electoral success to a Brady carte portrait.

Besides its commercial and political role, photographic portraiture also served as a means by which individuals might express emotions and beliefs, or simply indulge in a pleasant pastime, although this usage was still limited to the comparatively wealthy. Among this group of amateurs, JULIA MARGARET CAMERON is most renowned for the single-mindedness and intensity with which she pursued sitters, who ranged from her own domestic staff and members of her family to the most illustrious literary and scientific figures of the era. Considered eccentric by her contemporaries, both as regards her person and her photographic ideas, she produced portraits that are commanding for psychological insight as well as aesthetic appeal.

Essentially, portraits have continued to fill similar public and private needs, but whether reproduced in book, periodical or poster format, and in film or video, the style in which the image is conceived developed along with the arts as a whole. Towards the end of the 19th century commercial portraiture was influenced by two main factors: the Aesthetic Movement in the visual arts and the greater numbers of women photographers (mainly in the USA) who were involved, initially with a clientele composed largely of women and children. Another change resulted from the introduction of the snapshot (see §I and §6), which furthered the democratization of the process and created the opportunity for less formal portraiture.

3. 19th-century landscape, architecture and travel documentation.

In 1859 the American philosopher, inventor and writer on photography Oliver Wendell Holmes (1808–94) forecast that through photography 'every conceivable object of Nature and Art will soon scale off its surface to us'. From the first, nature and the built environment proved ready subjects for both the daguerreotype and the calotype, but within about 15 years albumen prints from collodion negatives became the primary means for recording the actual. Despite the cumbersome nature of a process that required the photographer to carry a darkroom to the site in order to process plates before and after exposure, such photographs soon found many uses: as records of terrain just discovered or about to be exploited; as a means to study the architectural patrimony; as information about archaeological sites; as views of exotic locations; as subtle propaganda for colonialism; as book illustration; and as individual keepsakes for people just beginning to travel or for those unable to do so. Rarely were these motives singular; rather, consciously or otherwise, photographic documentation in the 19th century embodied several intentions at the same time.

These objectives took form over a period of about 20 years. One of the first projects to use the camera in this fashion involved the documentation of a national architectural heritage. The Mission Héliographique, sponsored by the French government in 1851, employed five photographers to record churches, fortresses, bridges and castles in need of restoration. These images (by Edouard-Denis Baldus, Hippolyte Bayard, Gustave Le Gray, Henri Le Secq and O. Mestral) were not published at the time as supporters of the medium had hoped, but individual images proved serviceable for architects working on the extensive restorations then underway in France. The French government turned to photography again some ten years later when Charles Marville was asked to record the extensive reconstruction of Paris being carried out under the aegis of Baron Haussmann (e.g. Tearing down the Avenue de l'Opéra, Paris, Mus. Carnavalet). Employing the collodion negative and albumen print process, Marville’s work satisfied the need for detailed information; at the same time it embodied concepts about the relationship of architectural monuments to the government's desire for more manageable urban arrangements.
Photographs by French nationals working outside France, mainly in the Near East, filled similar needs, in that they were meant both to satisfy mounting curiosity about archaeological matters and to establish national hegemonies. Working with the calotype, Auguste Salzmann in Jerusalem and Maxime Du Camp in Egypt set out to bring back proof of building methods and inscriptions, but beyond the informative value of these works, viewers were also accorded unusual visual experiences that stemmed from the photographer’s acute sensitivity to the play of light on three-dimensional objects, as can be seen in Du Camp’s Colossus of Abu Simbel (c. 1850; London, V&A).

Large numbers of landscape images, usually though not invariably of natural wonders such as the Alpine peaks or the wilderness of the Pyrenees, appeared in France, England and Germany during the 1850s and 1860s. Among those considered especially notable in their time were Camille Silvy’s Vallée de l’Huisne (1858; London, V&A), a serenely bucolic river landscape, and a series by Le Gray of sea and sky (e.g. Brig upon the Water, 1856; London, V&A), in which contemporaries marvelled at the photographer’s ability to capture the movement of the water and the tonalities of the sky and clouds. Many viewers were not aware that these were among the many landscape photographs produced by double printing—a technique made necessary by the fact that the collodion and silver emulsion was unequally sensitive to the various parts of the spectrum. The solution was to make two different exposures consecutively, one for ground and one for sky, and combine the two negatives in the printing process. These exposure problems were finally solved by the introduction of orthochromatic plates and in the early 1900s by panchromatic film (see §I, 1).

Representations of landscape and buildings were often made as illustrations for publishing houses, which used them in books, arranged for their distribution as individual prints or sold them in the form of stereograph cards. The latter made use of two separate images (usually but not necessarily paper prints) mounted side by side on a stiff backing and inserted in a viewing device called a stereoscope (see §I). With a slight effort the individual viewer was able to fuse the two separate images into a single representation that appeared three-dimensional. Produced in large editions by steam-driven machinery and assembly line operations, these inexpensive images included landscape and architectural views as well as depictions of contemporary events such as wars and fires, and even fictional scenes reflecting everyday domestic life. Stereographs enjoyed enormous popularity during the second half of the 19th century and were still considered of educational value during the opening decades of the 20th.

Landscape views also served ideological ends by reinforcing nationalist objectives. For instance, Alsace and the Savoie, lying between Germany and France and Italy and France respectively, were photographed in the course of political campaigns to establish the sovereignty of the French over the regions. The Alsatian photographer and publisher Adolphe Braun issued hundreds of views designed to make his compatriots aware of their French heritage, while the Bisson brothers accompanied the French royal family in the ascent of Mont Blanc after Sardinia had ceded the Savoie to France. Similar motives impelled the German photographer Hermann Krone to record the beauties of the area around Dresden for an anniversary album for the rulers of Saxony, Koenigs-Album der Städte Sachsens (1872).

Other uses for images of landscape and the built environment reflected the higher standard of living for the middle class made possible by industrialization and the spread of railway and steamship travel. With larger numbers of people wanting souvenirs of memorable places, photographers found a growing audience for a wide range of material, including views of the stately homes and picturesque ruins of England, as photographed by Francis Bedford, Roger Fenton and James Valentine (1815–80), and the wonders of Classical and Renaissance Italy and Moorish Spain, the specialities of Robert Macpherson, Carlo Ponti, and Charles Clifford. Such imagery, whatever its purpose, often mirrored the aesthetic ideas that prevailed in the fine arts; thus the mist-shrouded mountains and tortuous rock formations visible in the work of the Norwegian photographer Knud Knudsen (1832–1915), for example, suggest the influence of German Romantic painting.
In an age in which major European nations were expanding their colonial holdings, European photographers continued their activities in northern Africa, Asia Minor, the Indian subcontinent and the Far East. Along with a small number of indigenous photographers, these intrepid individuals travelled with tent darkrooms in order to supply views that the occupying forces might use as a semi-scientific catalogue of exotic wonders with which to beguile those in the mother country. The photographers Felice Beato and Samuel Bourne of Bourne and Shepherd, along with the Indian photographer Lala Deen Dayal (fl. 1860s–70s), were active in India from the late 1850s on, while Antonio Beato, Francis Bedford and Francis Frith were among the 40 or so foreign photographers, male and female, who are known to have photographed in Egypt and the Near East before 1880. China and Japan were less accessible to Europeans during this period, but Felice Beato followed the intermittent wars waged by Europeans for control of the port cities, while the Scottish photographer John Thomson included in his Illustrations of China and its People (4 vols, London, 1873) many views of landscapes and monuments. The pre-eminent Chinese photographer of the period, with a studio in Hong Kong, was Afong Lai (fl. 1860s–80s); the serenity and timelessness of both his and Thomson's landscapes suggest the influence of traditional Chinese landscape painting.

Views of landscape and monuments made in both North and South America share many of the characteristics of tourist views made elsewhere; for example, those by Désiré Charnay in Mexico fulfilled scientific curiosity, while Marc Ferrez, a noted photographer working in Brazil, balanced description with the desire to enhance native wonders, as in his photograph of the Bay at Rio de Janeiro with Corcovado and Sugar Loaf Mountains (c. 1875; Rio de Janeiro, Col. Ferrez). Landscapes, especially views of the western wilderness produced in the USA during and immediately after the Civil War (1851–5), added to these attributes ideological concepts about the relationship between the natural world and the national purpose, which involved expansion and settlement. Produced by individuals accompanying teams of surveyors and geologists, in particular William Henry Jackson, Eadweard Muybridge, Timothy O'Sullivan and Carleton E. Watkins (see fig.), these images provided details about geological formations as well as suggesting the vast stillness of the wilderness. Some display a quality that seems to embody the transcendental view of nature as tangible evidence of the Supreme Deity. Views of nature made in the eastern USA or by Canadian photographers in the north-west were often as concerned with evoking feelings about the supernatural as with depicting the actual character of the terrain. Considering the difficulties of photographing outside using the wet collodion process, the fine quality of much of the imagery made in the inaccessible reaches of the Alps, the Himalayas and the Rockies, or on the Ganges, the Nile and the Yangtze, testifies to the photographers' passion and resolve.

4. Recording social life and current events.

In the 19th century photographs of natural and man-made objects were considered truthful revelations of the real, merely rendered in two-dimensional form through the action of light and chemicals. When the technology was perfected enough for photographs to be made of events, this view was carried over to such images as well. Thus early photographs of wars, battlefields, uprisings, revolutions and natural disasters were considered to be surrogates of reality, a point of view that persisted. In part this particular aspect of photography developed because of the growth in literacy that accompanied urbanization and industrialization. To attract readers, inexpensive popular periodicals, which made their appearance in the 1830s even before the invention of photography, sought illustrative material; more and more frequently this came to be supplied by images made with the camera. During the 1850s such images were copied by graphic artists on to woodblocks, which were engraved and printed with the text until a method was found of printing from the negative.
directly on to the block for the engravers (see §I, 1).

Such illustrations in periodicals covered a gamut of themes, among which industrial progress was prominent. Major projects in construction, along with the ceremonies marking their completion, were documented using series of photographs. P. H. Delamotte, for example, photographed the construction and opening of the Crystal Palace, London, in 1853–4, and Andrew J. Russell (1830–1902) photographed the joining of the eastern and western sections of the transcontinental railroad in the USA in *Meeting of the Rails, Promontory Point, Utah* (1869; Omaha, NE, Un. Pacific Hist. Mus.). More difficult photographic problems were presented by unplanned occurrences, but the daguerreotype process was used to record such events as *Factories on Fire at Oswego, NY, 5 July 1853* (Rochester, NY, Int. Mus. Phot.) by George N. Barnard, or the *Great Chartist Meeting on Kennington Common, 10 April 1848* (Brit. Royal Col.) by William E. Kilburn (fl 1846–62). At times the daguerreotype’s limitations required scenes such as that by Southworth & Hawes of the *Operating Room, Massachusetts General Hospital, Woman Patient* (1846–8; Boston, MA Gen. Hosp.) with the patient lying ready for surgery, to be staged especially for the photographer. After the adoption of collodion, however, images of such events became more common, despite the fact that plates had to be processed on the spot.

People of non-European ethnic origin and their lifestyles were also subjects of considerable interest both to readers of popular periodicals and to travellers. From the far corners of the world photographers supplied images of daily life and customs; John Thomson’s photographs of daily life in China constitute but one example of many such efforts. Foreign and indigenous photographers working in Japan, notably Baron Retiniz von Stillfried and Kinbei Kusakabe, made such images both in the street and in the studio. In the USA Native Americans were of particular interest, especially in the period directly following their final subjugation in 1890. Adam Clark Vroman and Edward S. Curtis were two figures prominently involved in the exploration of Native American life, with both supplying textual as well as visual information; for its time Curtis’s study *The North American Indian* (20 vols, Norwood, 1907–30) was a pioneering, if somewhat romanticized, effort to make these disappearing cultures understandable.

Although wars and revolutions occurred during the earliest years of photography’s existence, with the exception of an occasional shot of barricades or generals, documentation of these events did not become feasible until the invention of the collodion process; even then there was still great difficulty involved in preparing and processing plates under battle conditions. Nevertheless, the desire for accurate visual reportage acted as a spur to the first such documentation. Underwritten by a British publisher and with the approval of the British Crown, Roger Fenton was sent to the Crimea in 1854 to cover the Crimean War in the face of devastating criticism of its conduct by *The Times* of London. The resulting 360 or so images, some published in portfolio, are far removed from later ideas of war documentation in that they are artfully posed, deal mainly with the officer rank, and show little of the actual battles, as in his view of the *Cattle Wharf, Balaklava* (1855; London, Sci. Mus.).

The most photographed 19th-century conflict, the American Civil War, proved to be a watershed in such documentation. The teams organized by Mathew B. Brady and George N. Barnard, including photographers of the calibre of Timothy O’Sullivan, Alexander Gardner and Andrew J. Russell, produced 7000 to 8000 images that made apparent the extent of the personal and national tragedy to those who purchased the photographs or saw illustrations based on them in magazines. As the *New York Times* noted at the time, the camera made visible ‘a terrible reality’, exemplified by O’Sullivan and Gardner’s picture *A Harvest of Death, Gettysburg* (1863; New York, Pub. Lib.), although such imagery was less frequently published than other war views. Both graphic artists and photographers depicted the events of the Civil War, but it can truthfully be claimed that the spontaneity of the photograph influenced the work of several of the non-photographic artists involved and set the stage for all future visual depictions of such events. Henceforth paintings of
contemporary events, such as Edouard Manet’s *Execution of the Emperor Maximilian* (1867; Mannheim, Ksthalle) reflected photography’s capacity to extract a moment from the flow of time.

5. Photography and fine art.

The acceptance of photography as documentation was fairly smooth, but its role as an expressive medium was (and remained) a subject of contention, especially in the decades immediately following its invention. Yet in an age that prized verisimilitude, many artists, critics, business people and government functionaries realized immediately that both fine and applied art might benefit directly from the use of photographs, and in this role photography was less controversial. Soon photographers were supplying artists with figure studies, both clothed and nude, and studies of nature to be used in the decoration of useful and luxurious consumer goods. Even such antagonists of photography as the French writer Charles Baudelaire agreed that the medium fulfilled itself in the role of ‘handmaiden to the arts’. In many cases photography was used by artists in ways that transcended the utilitarian. Notable among the first to use photography constructively, if clandestinely, was Jean-August-Dominique Ingres, who probably made use of the daguerreotype for commissioned portraits as early as 1841. Apart from an aid to verisimilitude, the daguerreotype, coloured or not, may have had an effect on his use of colour, his precise rendering of textures and the pose of the sitter, who often steadies the head with the hand. The daguerreotype was used by a number of other portrait painters and caricaturists for its rendering of a close and detailed likeness and because it reduced the need for a number of sittings.

The use of photographs as aids to painting can be said to have had a number of further effects on pictorial content. The early black-and-white photograph’s transformation of colour into tone and its uneven sensitivity to the full spectrum, along with its exaggerated chiaroscuro, especially when taken in artificial light, may account for aspects of the style of Honoré Daumier, Henri Fantin-Latour and Edouard Manet. Photographic landscapes may also have exerted an influence on painting. They were used in particular by Orientalists concerned with meticulous and accurate detail, and they were used for accuracy, too, in history painting; for example, some of Augustus Egg’s paintings were based on Fenton’s photographs of the Crimea. Moreover, the softer effects of chiaroscuro, the loss of definition in the depiction of moving subjects (e.g. foliage) and the presence of the effect of halation (the encroachment of light into adjacent darker areas) in the calotype image probably had an effect on the work of Jean-Baptiste-Camille Corot and Jean-François Millet.

Other aspects of the photographic rendering of the subject had a notable effect on the work of Thomas Eakins, Eugène Delacroix and Gustave Courbet, who all made extensive use of photographs of the nude model, in which the photographic pose and gesture offered a radical alternative to academic tradition. Courbet also used photographs of landscapes, and it is possible that Impressionist painters, who shared photographers’ concerns with ‘objective’ viewpoint and the characteristics of natural light, did too. Aside from snapshots he made of family and friends, Edgar Degas’s use of the photograph can be detected in his innovative perspectives, compositions and poses, and in his use of successive phases of movement. While for many artists the influence of photography was deep and acknowledged, the general view still stated that a ‘photographic’ depiction (a criticism levelled in particular at the Pre-Raphaelites) was undesirable.

Photography was more accepted, however, as a means by which public taste could be improved, leading to a significant commerce in the 1860s in reproductions of works of art and architecture; the firms of Alinari in Florence and Braun in Alsace were foremost in this area, with photographers in Europe, Asia and, less commonly, the USA, supplying an eager market with images of the great works of art. Technical improvements, which involved introducing colour into carbon prints and eventually developing colour printing methods (see §I, 1) were significant factors in transforming the
study of art history into a serious academic discipline.

Artists responded in various ways in the 19th century to photographic processes. Some became adept at using them, claiming at the same time that because they were produced by a mechanical device they were incapable of making spiritual statements. Around the middle of the century a number of French artists including Corot incorporated the medium into their artistic strategies by using the technique of *cliché-verre*, which entailed drawing directly on a collodion- or smoke-covered glass plate and printing the plate by exposing it to light against sensitized paper. With inventions in both the United States and Europe in the late 1850s of a solar enlarger, less capable artists were able to project an image on to specially prepared canvas or paper as a form of ‘underpainting’ over which they could apply paint directly.

A number of photographers, especially in Europe, had trained as painters, and from the medium’s inception some had considered it a means by which they might express deep-seated convictions about human character or represent intellectual and spiritual concepts in an aesthetically controlled manner. A few photographers, notably Fenton in England and Le Secq in France, were drawn to the still-life, a traditional academic theme, even though it could sometimes be treated unconventionally, as in Hermann Krone’s *Still-life of the Washerwoman* (1853; Munich, Dt. Mus.). Others, among them William L. Price (1810–96) and Julia Margaret Cameron, favoured themes from literature and mythology (e.g. *Zoe, Maid of Athens*, ?1866). A number of photographers, such as the French painter and photographer Charles Nègre, took their subjects from everyday life, emulating genre painting in their attention to composition and the massing of form as well as in their choice of theme.

A distinctive approach to photography as an art emerged in England during the late 1850s under the impetus of O. G. Rejlander and Henry Peach Robinson and their combination prints, which involved photographing models and backgrounds separately, and either pasting sections of the prints together or making one print from a number of separate negatives to form a fictional composition. Rejlander’s use of superimposition can be seen in *Hard Times* (1860; Rochester, NY, Int. Mus. Phot.). The best known and at the time one of the largest of these ‘composite’ works was Rejlander’s *Two Ways of Life* (1857; Bath, Royal Phot. Soc.), created from about 30 negatives, but ultimately it was Robinson’s book, *Pictorial Effect in Photography* (London, 1869) that spread the gospel of ‘artistic’ genre photography and of Pictorialism throughout Europe and the USA. The Canadian photographer William Notman, who had studios in Albany and Boston as well as in Canada, was also a noted maker of combination prints. The manipulation that made fictional compositions possible also served photographers working for the expanding stereograph publishing business in the creation of ‘spirit’ images that dealt with the supernatural.

Genre themes maintained their popularity throughout the century, but by the late 1880s such imagery had become more idealized and bucolic, in part through the work and aesthetic theories of Peter Henry Emerson, whose dislike of manipulation and contrivance in photographs led him to espouse the theory of Naturalism in opposition to Robinson’s Pictorialism. Emerson’s approach, the subject of his book *Naturalistic Photography for Students of the Art* (London, 1889), in particular promoted differential focusing, which derived from his belief that the human eye sees only a small portion of the visual field in sharp detail, in contrast to the Pictorialists’ use of overall even focus. The rural themes chosen by Emerson and his followers, such as Frank Meadow Sutcliffe, were conceived not as narratives but as evocations of a valued way of life that Emerson, for his part, recognized as disappearing under the advance of industrialization. In keeping with the idea that Naturalistic photography was a means of aesthetic expression rather than of documentation, Emerson prescribed printing on platinum paper or by photogravure.

During the last quarter of the 19th century advances in materials and apparatus and experimentation with techniques of lighting made possible the depiction of movement, of colour and of forms inaccessible to the unaided eye because of size or position in space. Photography became a sophisticated tool, of use in science, journalism and advertising. At the same time the simplification of the process made taking pictures possible on a wider scale than ever before. Along with the growth of photography as an art that occurred in the 1890s, these developments initiated a period of uncommon richness.

Efforts in the 1860s to expand the boundaries of what could be photographed involved the depiction of the earth from the air in images made by Nadar and James Wallace Black (1825–96) from free-floating and tethered balloons respectively. While these early enthusiasts trained their cameras on earthly objects from above, others, among them the American John Adams Whipple (1823–91), were aiming their apparatus at the celestial field using observatory facilities; by 1877 the photographic mapping of all planetary bodies could be contemplated. Photographing objects hidden from the human eye by intervening substances also became possible with the invention of the X-Ray by Conrad Wilhelm Roentgen (1843–1925) in 1899. Such endeavours expanded the possibilities of photographic vision.

The portrayal of objects in very low levels of light, as in the photographs of the catacombs of Paris in 1861 by Nadar or of cave interiors in the USA in 1866 by Charles Waldaack also presented challenges that were solved at the time with the use of electric bunsen batteries and magnesium wire. Starting in the mid-1860s and continuing at least until the electrification of major cities was completed, magnesium wire was used also in early experiments in indoor studio illumination. In fact, as a lighting substance either on its own or, as was more likely, as a booster for the light available from other sources, magnesium powder remained in use until 1925, when it was incorporated in another form into flash bulbs. The use of these and of electric arc lighting, as used in the studio of Sergey Levitsky in St Petersburg as early as 1881, enabled the photographer to reduce his or her dependence on available light and to control light levels further.

The most spectacular technological advances involved efforts to capture on the photographic plate action that was too swift for the eye to comprehend. Scientists, photographers, painters and entrepreneurs were absorbed by these experiments, which were initiated in the early 1870s and continued for the next two decades. These efforts were undertaken mainly by Eadweard Muybridge in the USA, Etienne-Jules Marey in France, and Ottomar Anschütz (1846–1907) in Prussia. They not only resulted in still images that detailed specific sequential patterns in, for example, the flight of birds or the canter of horses (see fig.) or human movement, but also intimated the possibility of motion pictures. Such images had an immediate effect on the graphic representation of movement. Studies produced in the 1880s, which could stop motion at 1/1000 of a second, involved considerable financial resources for the construction of special equipment and foreshadowed further investigations in the 20th century.

Eventually Harold E. Edgerton was able in 1964 to photograph a bullet travelling at 900 m per second as it pierced an apple, with an exposure of 1/3 of a microsecond.

All these advances were accompanied by changes in the materials used for negatives. Despite the high calibre of work possible in the wet collodion process, its inconvenience led to continued researches into other materials and methods of processing. In the late 1870s experiments in England made possible the manufacture of dry film, first as glass plates and eventually in celluloid...
sheets and rolls. Along with the greater convenience afforded by these materials came standardization; now that negative materials were factory-made rather than individually produced, sensitizing dyes could be introduced into the silver emulsions, their sensitivity to light could be measured and standard exposure times could be established. Printing papers also underwent changes, allowing positives to be made more quickly in both natural and artificial light and to be printed by machine (see §I). All such advances contributed to the ease of photographic image-making.

Even greater precision resulted from changes in the design of apparatus, which made cameras more appropriate to the jobs they were meant to do. Large field cameras for architecture and landscape were equipped with features that allowed front, back, and bellows to be adjusted more minutely. In the late 1880s one might add simple focal plane and diaphragm shutters, but only in the early 20th century was it possible to control both the size of the aperture and the length of time it remained open in a single shutter mechanism built into the camera. Lenses also underwent improvement; in the early 1890s the Goerz and Zeiss companies in Germany introduced anastigmatic optical elements that reduced distortion in both horizontal and vertical planes.

Tiny cameras appeared, shaped like revolvers, wine glasses and so on; some of these ‘detective’ cameras were novelties producing negatives too small to be of use before the invention of good enlargers, while others, such as the Stirn Secret Camera (1886), enabled recreational users to make printable negatives without the subjects’ knowledge. The subject-matter of photographic images became more intimate and less posed. Spontaneity and informality, along with lack of pose, was further increased by the development of the Kodak camera which satisfied the desire for an easily operated camera for recreational use. First marketed by George Eastman in 1888 as the simplest and most convenient of all camera mechanisms, the Kodak had the added advantage of separating the taking of pictures from the job of processing film and prints.

The lack of natural colour in early photographs had been so keenly felt that experimentation to find ways of making the silver salts sensitive to the colours of the spectrum occupied scientists from the 1840s (see §I, 1). In the first decade of the 20th century a practicable colour product was marketed by the Lumière brothers as Autochrome; it appealed to both artistic and commercial photographers even though the result was a positive transparency of small size rather than a print in colour. Nevertheless, it achieved effects that had profound implications for photography’s development and its relation to the fine arts.

Another development that affected photography profoundly was the invention in the late 19th century of a method of printing photographs and type together. Early mechanical printing methods, among them photogravure, photolithography and Woodburytype (see §I) might produce excellent reproductions, but were expensive and inconvenient, requiring much manual work. In 1881 the American Frederick Ives patented a relief printing method by which a screen was used to break up the half-tones on a plate, which could be locked into a press and printed at the same time as the text; over the years Ives and others perfected this method of half-tone photoengraving which revolutionized reportage and ushered in photojournalism.

All these technological advances paved the way for a remarkable expansion in photographic activity. Many more people, including unusually large numbers of women, became involved in commercial, journalistic, recreational and art photography. With the capacity to reproduce camera pictures less expensively there emerged a greater demand for photographs as illustrations in periodicals, in books, and in advertising posters and circulars. Because such images could be produced on a freelance basis and did not command high prices, women in the USA especially found illustrative photography a congenial and convenient activity that might be fitted around domestic duties, or if desired, turned into a full-time profession, as was the case with Frances Benjamin Johnston, who began by making photographs for magazines, expanded into portraiture and documentation before
settling into a career as a photographer of homes and gardens. Portraiture was another era in which women became prominent and, possibly as a result, commercial portraiture during the 1890s became less concerned with external appearance and more with the expression of emotion and mood, as in Gertrude Käsebier’s *The Picture Book* (1899/1902; Washington, DC, Lib. Congr.).

As a result of the simplification introduced by the Kodak, many more women took up photography as a recreational activity, often graduating to more complex equipment and a greater commitment to the medium, either as a means of artistic expression or as a way of interacting with the world around them. Men were also attracted to photography because of the simplification of the process, including the artists Thomas Eakins and Degas (see fig.), as well as Louis Comfort Tiffany and Heinrich Zille; writers such as Emile Zola; and gentlemen of leisure, such as Count Giuseppe Primoli. Indeed, cameras had become easy enough for children to use: Jacques Henri Lartigue began to photograph in 1901 at the age of seven and shortly became an accomplished recorder of the lifestyle of his upper middle-class circle of friends and relatives in France (e.g. *Avenue du Bois de Boulogne, Paris*, 1911).

The simplification of the process also reduced the cost of equipment and supplies, so that individuals who might previously have been unable to afford to photograph either as an avocation or a business were now able to do so; the working printer PAUL MARTIN in England and the African American photographer JAMES VAN DER ZEE in the USA were among those who took advantage of the medium’s cheapness and accessibility. Some who began careers in photography as a business at this time became so consumed by the medium’s possibilities for expressing their own particular vision that the work they produced transcended its immediate commercial purpose. In 1898 EUGÈNE ATGET, for instance, set out to make photographic documentations for artists and antiquarians; within this context he was also committed to preserving the Paris of the past—the monuments, buildings, foliage, neighbourhoods, shop-fronts and traditional street sellers—that he felt would disappear with modernization. While the photographs served a utilitarian purpose, the special character of Atget’s vision of Paris transcended the level of most such documentation (see fig.).

7. Social documentation.

Progress in the mass reproduction of photographs in printer’s ink encouraged some photographers to concentrate on depicting social conditions, in particular those relating to the urban working class in industrial society and, in the USA, to the influx of immigrants. This subject-matter had emerged in British mid-19th-century photography as a means of bringing the existence of such groups to the notice of the middle class. Daguerreotypes by Richard Beard, or an assistant, of poor London street types provided the basis for many of the engravings in Henry Mayhew’s *London Labour and the London Poor* (London, 1851); in 1877 JOHN THOMSON supplied photographs of similar subject-matter for *Street Life in London* in which they were reproduced by Woodburytype. In 1868 the authorities in Glasgow commissioned THOMAS ANNAN to photograph slum areas prior to their destruction; this project was undertaken for both nostalgic and sociological reasons. Also in the 19th century, photographs of working people in various industries in Europe and the United States were produced as commercial portraits commissioned by individual workers or for factory owners, as items for sale to travellers and tourists and as illustrations for periodicals and books. One notable early
documentary project, WILLIAM CARRICK’s photographs of street types in St Petersburg in the 1860s and of the people and landscape of the Simbirsk region in Russia in 1871 and 1875, grew from a restlessness resulting from the lack of clients in the portrait studio.

Towards the end of the century photographically illustrated books—part sociological tract and part reportage—were emulated in the USA by a series of publications, the most significant of which was How the Other Half Lives (New York, 1890) by JACOB A. RIIS. The author, a newspaper journalist, was one of the first to realize the power of photographic imagery to publicize perceived social problems, while at the same time arousing people to action to avoid unrest among the working class (see fig.). His work is paralleled by that of MAKSYM DMITRIYEV in Russia, who documented the effects of drought, famine and cholera in the Volga region in 1891–2. But whereas Dmitriyev was forced by political censorship to limit publication of his photographs, Riis used the images, such as Home of the Italian Rag Picker, Jersey Street (1889) reproduced both as line engravings and as photographs by the newly invented half-tone engraving system, not only in periodicals and books, but also in lantern slide lectures to middle-class audiences. Not all social documentations were as emotionally cadenced, however; Frances Benjamin Johnston’s portrayal in 1900 of educational facilities and programmes for African Americans at Hampton Institute in Virginia sought rather to project a sense of rational concern in the face of human problems, while photographs of German factory workers by Waldemar Titzenthaler (1869–1937) taken around the same time presented them as proud craftsmen, as Carrick’s portraits had done earlier.

The significance of photography as a sociological tool with the power to evoke action was advanced further in the West by LEWIS HINE, the first American to set himself up as a ‘social photographer’. Hine worked from 1904 to 1940 and supplied organizations such as the National Child Labor Committee and journals such as The Survey with images of poor working and living conditions; later, during the 1920s and early 1930s, he concentrated on skilled industrial workers. During much of the same period the German photographer AUGUST SANDER undertook a visual study of all sectors of German society, Menschen des 20. Jahrhunderts, a project that was interrupted first by World War I and then by the prescriptions of the Nazi regime, but with which he was involved until the 1950s (see fig.).

The category of social documentation thus came into being. Intent on providing ‘truthful’ depictions of circumstances, social photographers were nevertheless conscious of the role played by aesthetic factors in determining the affective power of the image. Attention to social subject-matter, form and feeling has been central to many of the significant documentary projects of the 20th century, of which one of the best known was undertaken in the mid-1930s by the Farm Security Administration in the USA. Under the directorship of Roy Stryker (1893–1976), 11 photographers, among them WALKER EVANS, DOROTHEA LANGE (see fig.), RUSSELL LEE, MARION POST WOLCOTT (see fig.) and Arthur Rothstein, provided images of the effects of drought and displacement on rural populations in order to make known the extent of the social crisis and thus justify the expenditure of federal funds on relief programmes. The pictures were used in periodicals and books, the resources available before the advent of television,
and were sent around the nation on exhibition.

Other documentations of social circumstances concentrated on urban themes. In Europe, with the possible exception of England, interest in urban documentation took the form either of photojournalism (see §9) or of politically engaged projects that sought to present working-class culture from the point of view of its members. These politically motivated projects operated concurrently with the growth of workers' photography movements (especially in Germany) and the documentation of the post-Revolutionary urban renewal in the Soviet Union. As an exception the English Mass-Observation project was conceived as an absolutely 'objective' documentation of life in a mill town in northern England.

Urban projects in the United States were sponsored by a variety of official and non-official bodies and sometimes initiated by individuals. BERENICE ABBOTT, returning from France, where Atget's Parisian documentation had inspired her respect, started a portrayal of New York in 1936 that became an exhibition and publication under the auspices of the Works Progress Administration, with the title Changing New York (see fig.). Other photographers in New York looked to the PHOTO LEAGUE for stimulation; this organization, which had its genesis in the European Workers' Photography Movements, was strongly committed to urban street documentation at a time when most camera clubs and pictorial organizations in the United States were involved in portraying still-lifes, nudes and bucolic landscapes.

Much social documentation sought to clarify some aspect of social circumstances or promote a point of view through a conjunction of word and image rather than just by images alone; therefore writers as well as photographers frequently were involved in the endeavours. However, individual photographers, among them BILL BRANDT in England and Roman Vishniac (b 1897) in Poland, were also concerned with people and their lives and produced bodies of work on this theme during the 1930s and early 1940s. Similar documentary interests were at work in Japan where those at the bottom of the social pyramid, ordinarily considered too insignificant for visual depiction, now assumed importance to a group of photographers including Horino Masao, who had become aware of social concepts emanating from Europe and the United States.

8. The re-emergence of photography as art.

The enlarged scope of the medium as a result of changes in materials and processes was indirectly responsible for reinvigorating photography as art in the 1890s. A small group of non-commercial photographers who were bent on expressing personal ideas and emotions felt it necessary to differentiate their work from commercial portraits and documents on the one hand and snapshots on the other. These individuals formed new societies devoted to photography as fine art, the most prestigious being the LINKED RING in England (founded in 1891–2), the Photo-Club de Paris (1894), the Trifolium in Vienna (1897), and, in 1902, the PHOTO-SECESSION in the USA. Similar ideas spread through eastern Europe, Russia, and the Scandinavian countries (see PICTORIAL PHOTOGRAPHY).

Photographic artists had several goals. One was to make images that in style and expressive power equalled those produced by artists in other media. To avoid the mechanical appearance of much commercial photography these individuals selected subject-matter consistent with 'high' art—portraits, figure studies, landscapes and nudes—often employing symbols—among which spheres and bubbles featured strongly. However, the distinguishing factor in their work was the treatment. For the most part they achieved soft effects with special lenses, and by printing images
either on platinum paper, by photogravure or by one of the more ‘artistic’ manual processes such as carbon, gum bichromate or bromoil (see §I). Frequently they autographed their work with decorative monograms and presented the images in artistic mounts and frames.

In establishing their artistry, many photographers showed themselves to be aware of prevailing styles in other arts, particularly painting. The influence of the Barbizon painters (although already outdated) can be seen in the numerous images of peasants in the fields, a theme especially favoured by photographers active in Germany and Austria, among them Oskar and Theodor Hofmeister and Nicola Perscheid (1864–1930). Impressionism, Tonalism and Symbolism all exerted a strong influence on photographic artists in England and France, in particular on JAMES CRAIG ANNAN (who was also influenced by 17th-century Dutch painting) and FREDERICK H. EVANS of the Linked Ring, and ROBERT DEMACHY of the Photo-Club de Paris. Some photographers actually arranged compositions in the manner of painters such as Vermeer, while others, among them the American photographers Alice Boughton and F. HOLLAND DAY, and the English Mrs G. Barton worked out original compositions based on themes from Renaissance painting.

Those who selected contemporary themes such as cityscapes nevertheless treated this subject-matter in a distinctly ‘artistic’ manner, obscuring detail in an effort to suggest by overall tonality and indistinctness the experience rather than the appearance of an actual place. Examples are EDWARD J. STEICHEN’s image of the Flatiron building in New York, The Flatiron—Evening (Platinum and ferroprussiate print, 1905) and ALVIN LANGDON COBURN’s Williamsburg Bridge (photogravure, 1909).

An equally important goal was that of exhibiting photographs in a manner commensurate with their status as art; to this end such organizations set up exhibiting salons where photographs were hung in aesthetic fashion rather than being jumbled together as had been common. Judging was by peers—photographic and occasionally other artists—and groups of such photographs were circulated and entered in salons and in the art sections of various international exhibitions. In addition, efforts were made to encourage museums to show ‘artistic’ photographs; while not hugely successful—neither the Metropolitan Museum of Art, New York, the Musée du Louvre, Paris, nor the Tate Gallery, London, could be persuaded at that time to exhibit photographs—museums in Germany and elsewhere in the USA did open their doors to photography as art.

The influence of the fine art movement in photography, and in particular of ALFRED STIEGLITZ, its central figure in the USA, was later the subject of much study, but there can be little question that it promoted the acceptance of photography as a viable means of artistic expression as well as a utilitarian procedure (see fig.). More and more museums began to accept photographs as gifts and to make purchases; some eventually devoted special departments to the medium. In time the images collected by museums transcended the strict parameters advocated by the art movement and included a wide range of ‘utilitarian’ works such as those by Eugène Atget and Lewis Hine and by the social documentary photographers of the 1930s. Stieglitz, who promoted photography in the several galleries he owned in the 1920s and 1930s, had his own work acquired by art museums in Boston and New York. His images, in particular those he called Equivalents (Washington, DC, N.G.A.), reflected his conviction that the expressive value of photographs rested in their handling and treatment and not in their ostensible subject-matter.

The Aesthetic Movement in photography fell victim to the cultural and social transformations engendered by World War I. As Europe recovered from devastation and the USA embarked on a period of rampant industrial production, the refined subject-matter and nuanced treatment of pre-war
expression in all the arts came to seem increasingly irrelevant. This highly aestheticized approach also seemed alien to new concepts concerning the interrelationship between art and industrialism and between personal and public expression, particularly promoted by the Constructivist movement in the Soviet Union, in Germany by the Bauhaus and in France by Le Corbusier.

During the second and third decades of the 20th century, photography entered an especially fertile period in both its utilitarian and private aspects. A wide variety of techniques, styles and approaches characterized work in the medium, partly as a result of new apparatus and greater commercial opportunities and partly in response to the ferment taking place in all the visual arts. Cubism, Constructivism, Dadaism and Surrealism inspired interest among photographers in collage, montage, images produced on photographic paper without using the camera, abstract form, extreme close-up, unusual angles and so on. Such experimentation was especially prevalent in France, where the American expatriate artist MAN RAY may be taken as its exemplification (see Untitled, 1922), in Germany, where LUCIA MOHOLY and LÁSZLÓ MOHOLY-NAGY promoted it at the Bauhaus, and in the Soviet Union, where the Constructivist ALEKSANDR RODCHENKO used experimental form to express the new vision of Soviet society.

Not all significant European work of the period was involved with such experimental interventions, however. Sharply defined ‘straight’ images, which in theory revealed through the close-up view correspondence between manufactured and organic forms, were thought by some practitioners, notably ALBERT RENGER-PATZSCH (e.g. Sempervivium percamenum, c. 1922), to be more appropriate to the era’s concentration on industrial production. Others favoured the close-up as a new way of looking (e.g. Rodchenko’s Portrait of my Mother, 1924), and still others, exemplified by ANDRÉ KERTÉSZ in France, Jan Lauschmann (b 1901) in Czechoslovakia, Rodchenko in the USSR, HANS FINSLER in Switzerland and AENNE BIERMANN in Germany, found in the simple use of unusual camera angles a means to invest commonplace scenes with uncommon vigour. In Mexico, MANUEL ALVAREZ BRAVO’s ‘straight’ photography allied a powerful symbolism with folk cultural reference, as in The Daydream (1931).

Modernist photographers in the USA were less concerned with probing the limits of photographic expression; indeed, after experimenting briefly in 1916 with Cubist ideas, Paul Strand evolved a style that emphasized the tactile reality of industrial and natural forms rather than their hidden psychological or symbolic qualities. This style, which avoided hand manipulation of any kind, reflected a general commitment on the part of American artists to ‘photographic objectivity’. It was favoured by PAUL OUTERBRIDGE and CHARLES SHEELER in their advertising work and by Edward J. Steichen in his fashion photography as well as by those whose photographs were more concerned with personal expression, among them IMOGEN CUNNINGHAM (see fig.), Strand and EDWARD WESTON (as in his Pepper No. 30). However, the influence of design concepts deriving in part from Cubism is evident in the work of the major American photographers of the 1920s and 1930s and is especially visible in the landscapes of LAURA GILPIN and in the industrial images of MARGARET BOURKE-WHITE, for instance Worker in a Steel Liner of a Diversion Tunnel, Fort Peck Dam (1936). The concerns of the era were summed up in 1929 in the exhibition Film und Foto, organized by the Deutscher Werkbund, Stuttgart, which travelled throughout Europe and in which significant figures in photography from
Europe and the USA participated. The work in this exhibition suggested that a fresh vision of reality could improve the quality of ordinary life and make possible the control of technology for creative ends.

9. Photojournalism and commercial photography.

A development of even greater significance in terms of its effect on photographic style and usage also occurred during the 1920s. This was the emergence of a new kind of photographic reportage, or photojournalism. The print media at the turn of the century had made use of photographs as illustrations for the printed word; in fact, some individuals had already begun to specialize in certain kinds of journalistic imagery, as in the concentration by James H. [Jimmy] Hare (1856–1946) on the armed conflicts that took place between 1898 and 1918. The new photojournalism differed, however, in that it told stories and evoked reactions mainly through a sequential arrangement of images, with captions adding incidental information, and often accompanied by an essay.

The development of the ‘picture story’ was made possible by the invention of small fast-acting cameras, of which one of the earliest was the Ermanox plate-camera, used by the German photographer ERICH SALOMON in the late 1920s to penetrate official barriers and capture spontaneous expressions and events among political figures. This capability was further advanced with the appearance of the Leica, first marketed in 1925 for use with 35 mm film that could be advanced rapidly to obtain a series of images of a particular event, even under low levels of illumination. It enabled professionals to concern themselves with vision rather than with processing, much of which could now be done by laboratories. It also made the role of the picture editor more prominent, in that the choice of pictures and captions for a particular story was no longer handled by the individual photographer. Naturally not all pictures for use in periodicals were produced with 35 mm cameras; from 1910 on, large format plate-cameras such as the Linhof and the Speed Graphic were also used by professional photojournalists, who after 1925 had the added advantage of synchronized flash.

The use of the 35 mm camera not only changed the character of photojournalism, it introduced a new style that was taken up by many who used other apparatus and who did not rely for a living on selling work to picture magazines. Originating in France in the work of HENRI CARTIER-BRESSON, who called his first major publication of such images Images à la sauvette (Paris, 1952; Eng. trans. as The Decisive Moment, New York, 1952) and in that of the émigré Hungarians Brassai and André Kertész, this style called into play the intuitive integration of eye, hand and mind. The images that resulted were recognitions of the psychological and aesthetic impact generated by forms in space at a given moment in time. Those working in this way were able to capture ‘privileged moments’ and make them available, through exhibition and publication, to an extensive public, thus removing the barriers between public and private acts of exhibition and viewing.

Photojournalism maintained its vigour throughout the 1940s and 1950s. German publications of the 1920s, followed by French and British periodicals of the 1930s, provided the models for the picture magazines that made their appearance in the USA in the late 1930s. At the same time the practice of photojournalism was being consolidated in the Soviet Union, where magazines such as USSR in Construction and Ogonyok offered numerous photographers the opportunity to develop the photographic essay. The most successful American picture magazine, Life, gave American photojournalism its special character, in that it was dedicated, in the words of publisher Henry R. Luce (1898–1967), to proclaiming ‘the American century’. The nation’s entry in 1941 into World War II provided Life with an opportunity to extend its view of ordinary American life.

During the 1940s photojournalism became internationalized as magazines in the USA provided

Photography, §II: History and influence in Oxford Art Online

http://www.oxfordartonline.com/subscriber/article/grove/art/T0...
photographers from around the world, among them WERNER BISCHOF, MARGARET BOURKE-WHITE, Cornell Capa (b 1918), ROBERT CAPA, ALFRED EISENSTAEDT, LEONARD FREED and GORDON PARKS, with unparalleled opportunities to photograph, in exchange for which the photographer ordinarily had little say about the use of the images. In this regard W. EUGENE SMITH was noted for his battles with publishers over the selection, sequencing and captions of his photographs; his work also stands out for its empathy, its lack of national chauvinism and above all its sense of the tragic (e.g. The Threadmaker, 1950).

From the 1930s onwards 35 mm cameras remained favourite tools for photojournalism and personal expression. The attitudes fostered by fast-acting apparatus and by the news media’s constant need for pictures brought images of distant events into homes throughout the industrialized world. The small camera also allowed the extraordinary to be seen in the commonplace; the work of ROBERT DOISNEAU and HELEN LEVITT, for example, provides witty and delightful insights into the everyday world, while that of ROBERT FRANK and WILLIAM KLEIN often presents a mordantly satirical vision of people and their relationships (as in, for example, Frank’s Political Rally, Chicago, 1956). Small cameras enabled street photographers such as Garry Winogrand to make literally thousands of exposures, from which those of visual or psychological interest might be culled and the rest discarded (or given to museum archives, as in this case). Along with the use of television and video, which eventually put many of the major picture news magazines out of business, the image made possible by the small camera transformed the way those in modern societies receive information and react to world events. The image itself was further transformed by developments in colour photography (see §1), initially adopted by the advertising and film industries to gain consumer interest during the Depression, later extended throughout photographic practice and, especially with the rise of colour magazines, to photojournalism.

Similarly, during the same period, photographs used for advertising, publicity and in fashion promotion changed the nature of these activities. In order to give their subject-matter status or special cachet, fashion and advertising photographers were especially open to ideas emanating from the wider field of the visual arts in general; thus both Neue Sachlichkeit and Surrealism provided inspiration for the fashion images of Man Ray, Steichen and ERWIN BLUMENFELD, to name just a few of the many engaged in this area from the 1930s on. Eventually, as attention focused on the images themselves rather than on the products they depicted, photographers in these fields were driven either to find completely new ways of portraying products or to emulate successful older styles; advertising and fashion photography continued to be replete with examples of both approaches.

10. Trends after World War II.

After World War II photography was stylistically influenced by two distinctive approaches: one was the experimentation that had been initiated by Constructivists and the Bauhaus and that was promoted in the USA by the Institute of Design, where AARON SISKIND and HARRY CALLAHAN (among others) presided over a curriculum that encouraged interventions of all kinds in format and process; the other continued the use of ‘straight’ photography, with less intervention in the process as a whole. The Czech photographer JOSEF SUDEK, for example, continued to concentrate on lyrical inanimate forms, as in the series The Window of my Studio (1940–54). In the USA the use of ‘straight’ photography also embraced the transcendental theories of MINOR WHITE (see for instance his image Moencopi Strata, Capitol Reef, Utah, 1962). As photographers sought to extend the boundaries of the medium, they were given unprecedented opportunities, both in the USA and in Europe, for exhibition, publication and sales. In the 1950s museums, galleries and individuals became interested in collecting photographs for their aesthetic as well as historic value;
accompanying this came the development of a market for photography, along with the emergence of a large literature about photography and photographers, providing the medium with both a more detailed history than at any time previously and with a structure for critical evaluation.

The period after World War II was one of enormous expansion in the use of photographic techniques in the making of unique personal and aesthetic statements, in part because photography was accepted as a valid means of artistic expression. Courses in photography were set up in Europe and in the USA, in particular. Photographers continued to take advantage of strategies such as manipulated printing methods and montage, but were able to extend their experimentation as a result of new materials, such as large sheets of photographic paper, and new processes, such as Polaroid instant imaging systems (see §I) and electronic image-making capabilities. Much photographic art after World War II concentrated on exploring the technical possibilities themselves, as in, for example, the photochemical experiments of Henry Holmes Smith (1909–1986).

While many photographers explored photography’s aesthetic capacity or its ability to express private sensations, others continued to exploit its more traditional documentary role, in particular its ability to capture essential aspects of contemporary social life. This direction is exemplified by images such as Robert Frank’s The Americans, a series on life in the USA in the mid-1950s, which seems to reveal the unease of a society devoted to consumerism and confused about its essential goals. It has been continued in particular in eastern Europe in the photographs of a number of Lithuanian photographers, who documented traditional social activities in the face of relentless industrial advance. As photographers of this persuasion sought subject-matter in the streets of towns and cities throughout the United States and Europe, they often looked to the spontaneity and candour of the snapshot for inspiration. In common with this lowly form, but with far greater awareness of their objectives, images might be humorous or ironic, as in the work of Elliot Erwitt and TONY RAY-JONES; they might concentrate on subjects considered to be at the fringes of ordinary society, as in the work of DIANE ARBUS and Lylalya Kuznetsova; or they might reveal aspects of both the tragic and the inspiring in modern life, as in Pepsi, New York (1964) and other works by Roy DeCarava (1919–2009) and Japanese photographer SHÔMEI TOMATSU.

During this period photography for the first time became accepted as a more expressive medium in cultures that had tended to see it as utilitarian. Throughout Latin America individuals began to find in the camera the means to make vivid statements about their traditions, the nature of their peoples and economic and political matters; one can cite the work of PEDRO MEYER of Mexico and SEBASTIÃO SALGADO of Brazil in this context. In South Africa numbers of photographers, including PETER MAGUBANE, portrayed the social consequences of Apartheid with feeling, while in Japan the medium has served to highlight the changes that modernization has brought to a nation that is a stronghold of traditional behaviour.

In common with the earlier period, but to a much greater extent from the 1960s on, fine artists incorporated photography into their work, utilizing it in collage and as the basis for painted images. Colour photographs in particular provided painters with representations that could be cut up, painted over and reassembled to express a personal reality. Photographic imagery has itself been recycled and reused (as, for example, in Pop art), transferred by silkscreen, DYE TRANSFER and other techniques that show the barriers between photographic and artistic practice to have broken down. At the same time photography extended its more traditional role, in that such developments as performance art, land art, art with an ephemeral basis and conceptual art made the possibility of photographic documentation essential. All such strategies acknowledge the importance of contemporary imaging technology while still maintaining the primacy for the artist of the individual idea.

Along with technical developments there was an extension of image content in photography within...
an art context, together with a tendency to re-examine the influence of technical possibilities on this content. In this respect the use of flash and the re-emergence of colour photography in the 1980s are significant. The latter is especially important in the use of constructed tableaux, as in the work of the French photographer Bernard Façon (b 1950), where colour highlights the undisguised fabrication of the image and lends a sense of unease. The idea of fabrication itself pinpoints a tendency from the 1970s to re-examine the photograph as a means of communication of the real; thus there was a move towards self-analytical photography, or photography that reveals the elements of its own construction. This analytical approach incorporated a concern with photography’s political role in society and its underlying ideological position as a system of communication often allied with the written word. Works by Barbara Kasten and Victor Burgin, among them What Does Possession Mean to You? (1976), which appeared in advertising contexts and was distributed as a poster, is an example of these tendencies as well as the tendency to incorporate the written word and break down the boundaries between ‘art’ and ‘non-art’ practices.

The latent potentials of photography, all of which made tentative appearances soon after the invention of the medium, have been expanded to the point where there is no necessary distinction between photographic and artistic practices, but an enormous number of different contexts of use. Given that the photographic image has become central to most major systems of public and personal expression and communication, it has become a determining factor in modern existence.

See also: Ethnographic Photography; Photomontage.

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