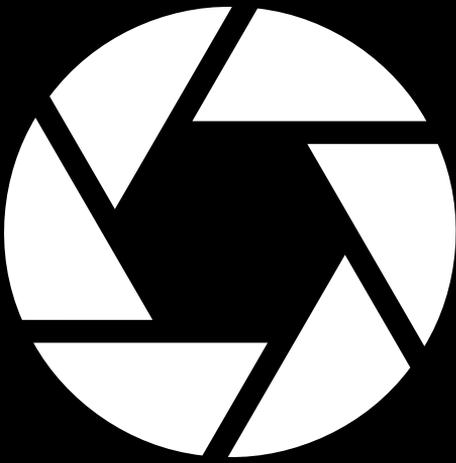# 400 PHOTO GRAPHS

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200 PHOTO GRAPHERS

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3 CENTURIES

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The State Library's exhibitions onsite, online and on tour connect audiences across NSW and beyond to our collections and the stories they tell.

sl.nsw.gov.au/galleries

ACKNOWLEDGMENT OF COUNTRY

The Library acknowledges the Gadigal people, the traditional custodians of the land on which this Library stands. We pay respect to Aboriginal Elders both past and present, and extend that respect to other First Nations visitors. We celebrate the diversity of Aboriginal cultures and languages across NSW.

CULTURAL SENSITIVITY NOTICE

It is customary for some Indigenous communities not to mention names or reproduce images associated with the recently deceased. Members of these communities are respectfully advised that a number of people depicted in the photographs in this exhibition, or mentioned in writing, have passed away. The language used in the period in which a photograph was taken may also be inappropriate or insensitive today.

FOREWORD

The opening of the inaugural photographic exhibition *Shot* marks the final stage of a project which began in 2018 with the salon hang of oil paintings in the Western Galleries. Visitors seeking the range and depth of the State Library's collections now have dedicated areas where they can explore all the formats we hold — pictures, drawings and watercolours, manuscripts and rare books, maps and plans, physical objects — and photographs.

This series of galleries can be thought of as 'walk through catalogues'. Specialists and researchers on a mission have always understood the significance of the Library's collections. For the person with a more general interest in the documentary evidence for our past and present, the scale and range of what we hold has presented a barrier difficult to climb. Not now. These galleries are part of a general desire to improve access to collections, fundamentally changing the way in which the Library can be appreciated by the community at large.

You will see from the images in this new gallery, expertly chosen and presented by my colleagues, that people from New South Wales have been involved with image retention and preservation right from the very start. The Library has been collecting photographs since the middle of the nineteenth century. Every significant photographic process is represented here, from the earliest daguerreotypes, ambrotypes and carbon prints through to born digital images which are part of our everyday life. Few, if any, photographic collections in Australia can present such depth, diversity and scale.

We are all in debt to the Library's expert exhibition and curatorial staff who began work on this project just as we were emerging from COVID. Transforming an area of the Library previously used for the storage of empty filing cabinets and the like, architects Andrew Andersons and Jon Cullen have worked to complete an undertaking which has proved complex and demanding. Excavation underneath the Mitchell Reading Room to create space for the associated auditorium was only a part of it.

The Library Foundation and its generous supporters have championed the construction of this gallery. We thank all our donors, and the NSW Government for its continued commitment to one of our most valuable cultural assets.

Special thanks, though, go to a former member of the Library staff who defined our modern approach to the collection of photography, worked to encourage the careers of countless photographers, and demonstrated the importance of the medium in the documentation of the mundane just as much as the extraordinary. The spirit of Alan Davies is very much alive here.

Dr John Vallance FAHA
State Librarian

INTRODUCTION

It is a surprise to most people that the State Library of NSW is a repository for up to two million photographs. The Library's photographic archives — one of the largest, most diverse and significant in Australia — illustrate tens of thousands of Australian stories, and collectively form a unique pictorial history of the past 180 years. *Shot* includes at least one photograph to represent nearly every year between 1845 and 2022. It also includes the work of over 200 professional, commercial, studio, press and amateur photographers, and works by some of Australia's most acclaimed photographers.

Shot takes an expansive, fascinating excursion across the history of the photographic image and its technology in Australia. On display are examples of nearly every format used since the inception of photography in 1839, from the earliest surviving photograph in Australia, a daguerreotype taken in 1845, through to ambrotypes, calotypes, autotypes, glass-plate negatives, Paget plates, albumen prints, autochromes and digital photographs.

This exhibition is only a thin slice of the collection, but these 400 works convey some of the rich rewards to be gained by examining the archive as a whole. It provides visitors with an insight into how institutional collections are formed. Libraries collect photographs and images for the documentary information they contain about life and society, rather than their aesthetic qualities. When trying to interpret photographs, libraries ask questions like why was an image created? Was it for artistic, personal or documentary reasons? Was it an official record, or part of a personal or family collection, or was it taken to promote a product or service? How has the particular technology of the photograph impacted its stability or reproducibility? What subjects are not captured by photographers?

The sweep of the exhibition's timeline also illuminates changing stories. By the twentieth century, with new technologies making photography more affordable, came an explosive growth in its popularity. Cameras moved into the hands of First Nations peoples, and others, who had previously been seen purely as subjects. Through the exhibition we see changes in agency and control of the medium, as First Nation photographers use the camera to make their own work and tell their own stories.

Geoffrey Barker
Senior Curator, Collection Acquisition and Curation

OPPOSITE: **Shadow portrait, c 1950**
by Rob Hillier
from gelatin silver print
presented 1992
PXE 649 v.5a

EXHIBITING PHOTOGRAPHY

Whether photography is an art form or a documentary technology has been a debate occupying the genre since the mid-nineteenth century. While the vast bulk of photographs have remained largely unseen in family homes, commercial studios, historical societies and archives, during the twentieth century the 'art-hang' was a popular method for exhibiting the work of artist-photographers. Photography exhibitions accentuated the idea that a fundamental difference existed between 'art' and 'documentary' photography. By the late twentieth century this difference was largely accepted by institutional collections where the focus seemed split between the art gallery on one hand, and the library and archive on the other.

For the first 50 years of the twentieth century the *Australasian Photo-Review* was one of the most successful local journals to highlight and expand the range of significant Australian photographs beyond the world of art. Running from 1894–1956, it held amateur photo competitions, hosted exhibitions and published articles on Australian photographers. Even so, it was not until 1955 that the first comprehensive history of photography in Australia was published: *The Story of the Camera in Australia* by Jack Cato. This brought attention to lesser-known figures (mostly male) and established a canon of significant photographers for periods of Australian history.

In 1967, the National Gallery of Victoria (NGV) established the first photographic department in a cultural institution. Its 1969 exhibition *The Perceptive Eye* has been credited as being a turning point in creating greater acceptance of photography in Australia's art galleries. The NGV also appointed the first full-time photography curator in an Australian cultural institution in 1972. The State Library's first photographic curatorial role was created in 1989.

Face for Luna Park, Sydney, 1991
by Douglas Holleley
hand-coloured gelatin silver print
purchased 2016
PXD 1429/no. 29

The Sisters (Emily and Anne Gibson with her son, Julius), 1988
by Anne Zahalka
from Cibachrome print
purchased 1991
ML 1048

BUILDING THE COLLECTION

Some of the very first photographs collected by the Library were acquired in the 1860s, not as photographs, but as books. Today we take photographs in books and magazines for granted but up until the 1890s there was no cheap way to reproduce photographs in books. Instead, real photographic prints were hand-pasted onto the pages of each book after the text was printed. The cost of this process is one reason why these photographs are mainly found in expensive limited-edition books. *The People of India*, for example, was published in eight volumes between 1868 and 1875, and was illustrated with 480 original albumen portraits from every part of India.

Later photomechanical processes brought costs down somewhat, but until the 1890s it remained expensive to combine photographs with text.

ABOVE: **The People of India, 1868–75**
by J Forbes Watson and John William Kaye
from albumen prints, ink and paper
purchased 1885
RB/DQ572.954/1-8

OPPOSITE: **Macarthur Onslow album, 1857–79**
by various
from albumen prints
presented by Lady Stanham, 1957
PXA 4358/Vol.1

Native Woman King George Sound 1858


Albany K.G. Sound 1858

Another major pathway for photographs entering the collection is through acquisition as parts of larger manuscript collections. One of our most significant photographic albums came to the Library with the Macarthur family papers. Presented to the Library in 1957, the papers included a scrapbook containing some of the earliest photographic views of the Pacific and Australia. Many were taken by a Macarthur family member, Arthur Onslow, during his time as an officer with the Royal Navy — others are rare original prints by amateur photographers he met in Sydney and exchanged photos with between 1857 and 1863.

On the other hand, Frank Fahy's scrapbook was compiled by a Sydney undercover police officer, who was nicknamed 'The Shadow' for his work infiltrating some of Sydney's worst criminal gangs from the 1920s through to the 1940s. The scrapbook, filled with photographs and news cuttings about the city's criminal underworld, was presented to the Library by his daughter.
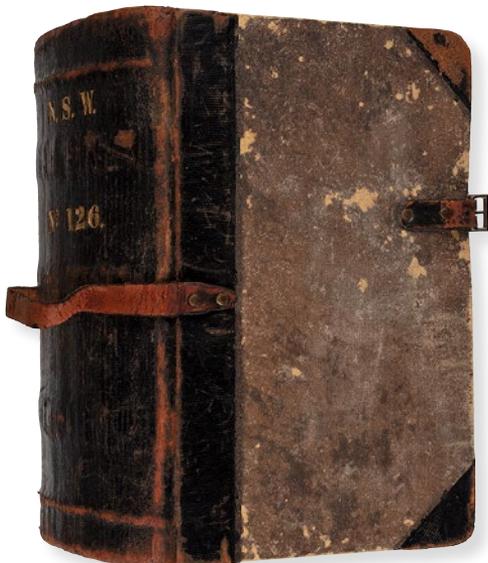
The Shadow, 1924–51
by unknown photographers
from gelatin silver prints
presented by Joyce Cardinaels, 2001
MLMSS 7198
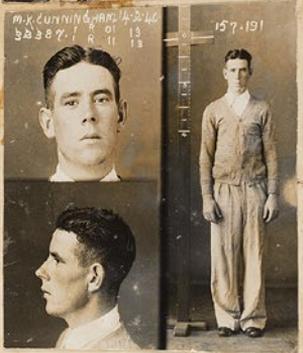
By the early twentieth century the Library was more purposefully acquiring photographs it considered historically significant or of documentary value. A series of Frank Hurley's exhibition prints, which celebrated the experiences of Australian soldiers in the First World War, was purchased in 1919. In the same year the Library purchased Hurley's personal album of vintage photos documenting the Shackleton expedition. By the end of the twentieth century Antarctic photography had become one of the Library's key strengths.

TOP: **Battle of Zonnebeke, 1917**
by Frank Hurley
from gelatin silver print
purchased 1919
XV*/Wor W 1/7

OPPOSITE: **Shackleton's ship, 1915**
by Frank Hurley
from gelatin silver print
purchased from Frank Hurley, 1919
PXA 715

Midwinter the Ship encased in ice. 191[?]

Marcia AM Clark, 1939
by Marcia AM Clark
gelatin silver prints
donated by Christopher Clark, 2019
PXD 1595/Box 6

FINDING A HOME IN THE LIBRARY

The vast bulk of photographs in the Library's collection have been sourced from official documents; shoeboxes in the bottom of cupboards; side tables and mantelpieces in family homes; or accumulated as part of the huge negative archives of newspapers, magazines or photographic studios. Once the Library catalogues and describes them, then a whole new set of relationships between these photographs and the new audiences that discover them unfolds.

THE SUNBAKER

In the vast Max Dupain and Associates archive of some 280,000 negatives is the original 1937 negative of the iconic *Sunbaker* image, taken by Dupain of his friend, English builder Harold Salvage, on a camping trip at Culburra Beach, New South Wales. Decades later, in 1975, Dupain returned to the darkroom to crop, touch-up and enlarge the negative as part of a series of exhibition prints for his first retrospective exhibition, held at the Australian Centre for Photography that same year. He chose the *Sunbaker* as the poster image for the show and it became the definitive Dupain image. The prints sold at the exhibition have since entered the art market where they have been bought and sold at ever increasing prices. The Library purchased the negative as part of Dupain's commercial archive in 2015. Interestingly Dupain used this negative only after he was unable to locate his preferred negative, which showed the sunbaker's fingers clasped.

On display is a contact print from the negative, with its envelope, including Dupain's handwritten instructions on how to print the negative in the darkroom. Also on view is the 1937 print, from the preferred but now lost negative, contained in an album of photos belonging to Dupain's friend Chris Vandyke. Later in the exhibition there's also, a signed, limited-edition copy of the *Sunbaker,* published to raise money for the Royal Blind Society in 1989.

The Sunbaker, Culburra Beach, NSW, 1937
by Max Dupain
film negative
purchased from Jill White, 2015
ON 609/Box 27/no. 382

OPPOSITE: **Sunbaker, Culburra Beach, NSW, 1937**
by Max Dupain
gelatin silver print in album
donated by Anthony C Vandyke and John A Vandyke, 2012
SAFE/PXA 1951

Still life, 1912–20
by unknown photographer
collected by Florence Taylor
autochrome
presented by Miss Jane March, 1961
ON 136

Dr William Bland, Sydney, 1845
by George Barron Goodman
daguerreotype
presented under Taxation Incentives for the Arts Scheme, 1993
SAFE/MIN 350

AUSTRALIA'S OLDEST SURVIVING PHOTOGRAPH

It seems nothing short of a miracle to have this fragile and very rare object in the exhibition. The image of the ex-convict, politician and philanthropist Dr William Bland — made in late 1844 or early 1845 by Australia's first commercial photographer, George Barron Goodman — is tiny (6.3 x 5 cm). This daguerreotype has also been sealed behind glass to mitigate the risk of damage to the delicate particles, which lie directly on the surface of the silver plate and form its image. Remarkably, it was in almost pristine condition when acquired by the Library — unidentified and unattributed — in 1993 as part of a collection from a family archive.

In Goodman's time, daguerreotypes of up to 21.6 x 16.5 cm were possible, but the polished silver plates were expensive and, once a photographer had used up their stock, it was not easy to get more shipped from the other side of the world. No surprise then that Richard Beard, the Englishman who sold Goodman the rights to use the process in Australia, supplied him with the smallest-sized plates. As a result, almost all of Australia's earliest photos were tiny.

NEGATIVES, DUPLICATES, PRINTS & MODIFICATIONS

The first form of commercial photographs were daguerreotypes. These were created by a one-off process which meant the image could be presented to the owner immediately after it was taken. The same was true for the ambrotype portraits, which replaced daguerreotypes in the 1850s.

However, from the late 1850s through to the 1990s almost all photographic prints were produced from a negative, which facilitates potentially infinite copies of the same image. As a result, the same image can be held by multiple institutions but depending on how they have been preserved, the condition, or format, may be different.

Opium field, Armidale, 1943
by *Pix* magazine photographer
film negative
presented by ACP Magazines Ltd, 2008
ON 388/Box 018/Item 121

Negatives are often celebrated as the original source of photographic prints. But sometimes negatives themselves were copied and modified as a part of the darkroom process. Three of Harold Cazneaux's original negatives illustrate just this point. One, taken by Cazneaux, is a copy of a famous photo of the ballerina Anna Pavlova taken in 1924 by the American photojournalist James Abbe. Cazneaux has pinned the original print to a board and rephotographed it to create this negative. The other two are copies of the same image of Dame Nellie Melba and have been physically altered by Cazneaux in preparation for darkroom printing.

Nellie Melba, 1921
by Harold Cazneaux
glass plate negative
presented by Mrs H Cazneaux, 1960
ON 39/Item 242, ON 39/Item 243

OPPOSITE: **Anna Pavlova, 1924**
by James Abbe, copied by Harold Cazneaux
glass plate negative
presented by Mrs H Cazneaux,1960
ON 39/Item 271

Photograph by Abbe, Paris

DISPLAYING NEGATIVES

Although most photographic formats can be easily displayed, negatives present unique challenges. Aside from being the inverse of how we normally view a photo, negatives need to be illuminated to a greater or lesser degree depending on their density. The digitisation of hundreds of thousands of the Library's negatives over the past 10 years has made these previously obscure collections visible, and contact or digital prints of many of these are being seen in this exhibition for the first time.

The 25 glass plate negatives which make up the 1875 panorama of Sydney by Charles Bayliss and Bernhardt Holtermann are an exception to this approach. The Library acquired the panorama, along with 3,500 other glass negatives, after they were discovered in a garden shed in Chatswood in 1951. Prints from the plates were displayed in the New South Wales Court at the Centennial Exposition held in Philadelphia in 1876 and the 1878 Exposition Universelle in Paris and were seen by millions at the time. But this exhibition is the first time the original negatives have been exhibited together. The 558 x 457 mm negatives have been mounted next to each other to collectively create the 9-metre-long panorama.

Postage-stamp sized prints, 1930–40
prints stored in boxes with the original negatives
by Valmond Kinley
gelatin silver prints and 35mm film
presented by Andrew Vincent, 2016
ON 679 & PXB 1751

CHANGING TECHNOLOGIES

In the 1890s three major changes completely reshaped photography. The first major development was the invention of the 'half-tone process', a commercially viable means for printing photographs and text together. This meant that photographs could be cheaply reproduced in books, magazines, journals and newspapers, illustrating everything from anthropological journals to newspapers and magazines. Second, the widespread adoption of George Eastman's Kodak cameras meant photographers no longer had to develop and print their own pictures. One result was an explosion in the numbers of amateur photographers. Similarly Kodak's development of film as an alternative to glass plate negatives meant cameras became lighter, smaller, more portable, and film could be easily loaded in situ unlike cumbersome glass-plate negatives. Third, in the late 1890s albumen prints had given way to gelatin silver bromide and other papers which were easier to print onto and enlarge. Photography was now more accessible to a broader section of society than ever before, and these changes can be seen reflected in the expansion of content held by institutional collections and the diversity of subjects represented.

TOP: **Duke and Duchess of York, 1901**
by Hughes & Mullins
photogravure by Rembrandt Intaglio Printing Company
no acquisition details
F394/3

RIGHT: **Picturesque peeps in New South Wales, 1890**
by Gibbs Shallard & Co
half-tone print
TN 115
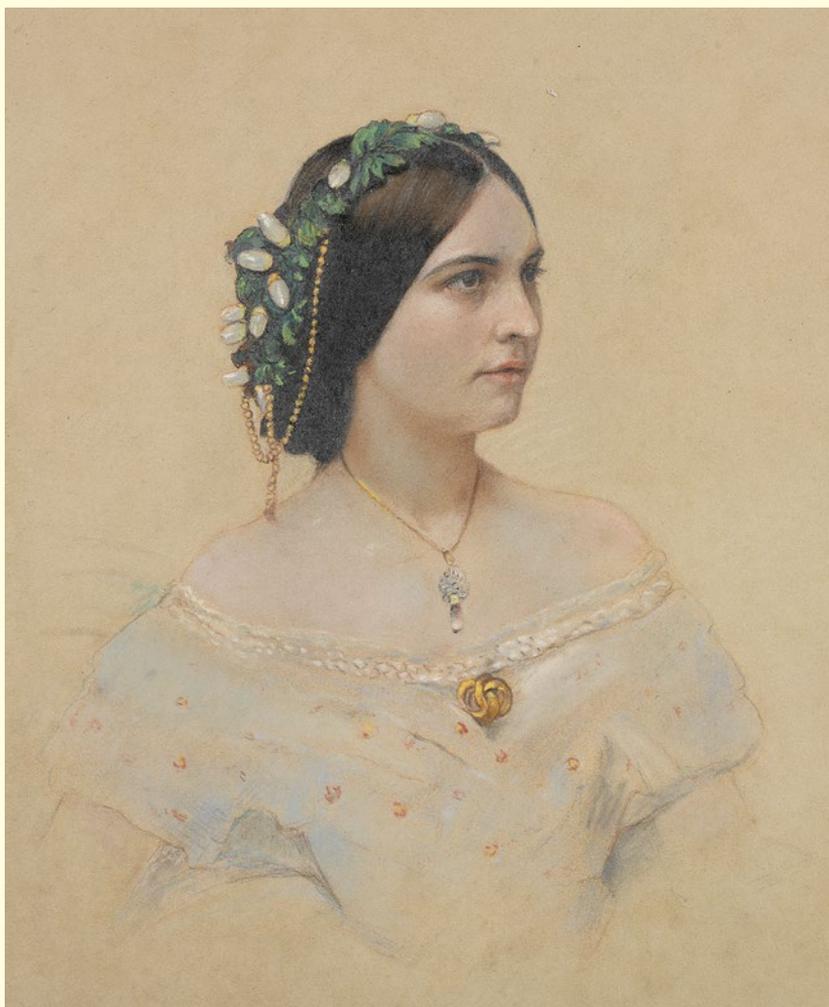
Frances Jones, 1859
by Edwin Dalton
photo-crayotype
presented May 1949
ML 1344

OPPOSITE: **Soldier and mother, 1971**
by David Hickson
film negative
presented 1988
Australian Photographic
Agency – 35508

DALTON'S CRAYOTYPE

In the nineteenth and twentieth centuries critics and collectors have debated whether photographs were either scientific/documentary records, faithfully recording the scene in front of the lens, or an artistic construction composed in the mind of the photographer. In reality, these two types of photographic work often converged. This image of Frances Jones, taken by Edwin Dalton in 1859 is an excellent example of the blending of artistic and photographic skills. In the 1840s Dalton, and his wife Magdalena, worked as miniature portrait painters who enjoyed the patronage of Queen Victoria and Prince Albert. After moving to Australia in 1853, Edwin and presumably Magdalena (although she remains uncredited), painted portraits in crayons. Edwin appears to have taken up the camera around 1855, by which time he was running a commercial photographic studio in Sydney. From here he produced landscapes, portraits, stereo-views as well as crayon portraits. His portraits, which appear to be more painting than photograph, were created by painting in crayons over a projected photograph or an original salt paper print. Dalton patented the process which he called a 'photo-crayotype'.

PHOTOJOURNALISM

Photography lends itself to news and reporting. Throughout the twentieth century photographs have told stories, changed governments and scandalised society. They have also sold products and people. Some of the Library's negative collections from this period are massive, particularly those from press and commercial studios who made their living from photography. The archive of commercial photographer Sam Hood holds 45,000 negatives, with most taken between 1916 to 1953. The Australian Consolidated Press collection (1935–85), which includes the archive of *Pix* magazine, contains around 235,000 negatives. There are 53,000 negatives in the Australian Photographic Agency (1953–87) archive and around 62,000 in the *Tribune* Communist Party of Australia Archive (1964–99).

Uncle Max Eulo, Yabun Festival, Victoria Park, Sydney, 2012
by Jamie James
born digital Tiff
purchased 2017
YEGqrOrn

OPPOSITE: **Divinyls, Redfern, Sydney, 1989**
by Tony Mott
digital Tiff
purchased 2016
9PQWy2Nn

PIX MAGAZINE

Photographers who worked for newspapers and magazines often worked for them for many years and specialised in particular areas like fashion shoots or studio effects. Of special note are the *Pix* magazine photographers, Ivan Ive, Norman Herfort, Ray Olson and Vic Johnson. *Pix* was first published on 29 January 1938 and was an immediate success. Australia was emerging from the depression years and *Pix* reflected the more optimistic and liberal mood of the nation. Editor Lionel B Foster created a new kind of weekly, with a focus on telling stories using photographs that would challenge and confront as much as comfort the reader.

TOP: **Linda Malden, 1944**
by Norman Herfort
film negative
presented by ACP Magazines Ltd, 2008
ON 388/Box 018/Item 121

RIGHT: **Tattooed Venus, 1938**
by Ray Olson
film negative
presented by ACP Magazines Ltd, 2008
ON 388/Box 033/Item 171

Foster's approach seems to have given *Pix*'s photographers a great deal of latitude in both the subjects they photographed and the way in which they composed their pictures. The *Pix* archive contains not just the final images used in magazine stories but all photos taken for each shoot. The archive is a unique insight into Australia's past — the inside of a drunk's cell at Sydney police station, painters on the Harbour Bridge, sideshow performers at the Easter Show and opium fields in Armidale. As part of the State Library's Digital Excellence Program, supported by the NSW Government, over 9,000 of these have been digitised and are available online through the Library's online catalogue.

Painting the bridge, 1945
by Alec Iverson
film negative
presented by ACP Magazines Ltd, 2008
ON 388/Box 017/Item 009

CONTEMPORARY COLLECTING

Photographic archives are often collected retrospectively, either through purchase or donation. But the Library also actively collects contemporary works from living photographers. At times the Library seeks out photographers to document activities and events around New South Wales. As we continue to build on our existing collections the proliferation of digitally generated images has thrown up interesting new challenges. In 2022 alone, an estimated 1.72 trillion images were taken around the globe. Questions of digital storage, and digital permanence, are becoming increasingly pressing.

*When I approached Conjola,
I saw unmatched mayhem.
I drove towards where they were
fleeing. On the first road I came
across, every house was burning.
Further down the hill a little after
1 pm, I saw a group of kangaroos
coming up the middle of the road,
obviously running from another
fire. One kangaroo ran right
between myself and the burning
house. I was able to make several
frames of the frightened animal
as it dashed past and then
hopped away, safe at least
for the moment.*

Bushfires, Lake Conjola, 2019
by Matthew Abbott
born digital giff
purchased 2020
9WZAayOY

Nevertheless, the Library continues to expand its collections and collaborate with numerous contemporary photographers. For this exhibition we asked, where possible, for photographers to provide captions for their works. Their captions, perhaps more than any others in the exhibition, provide the viewer with a wonderful insight into the many ways photographers find meaning in their work. One of these is Matthew Abbott's photo of the 2019 bushfires at Lake Conjola. Seen by millions after it was published in newspapers around the world, Matthew's description adds another powerful narrative layer to the image.

GLOSSARY OF PHOTOGRAPHIC TERMS

Albumen prints — commercially introduced in 1851 by Louis Désiré Blanquat-Evrard, these were the most common format for photographic prints between 1860 and 1885, before being superseded in the 1890s. Albumen (egg white) was used to bind photographic chemicals to very thin paper (usually a thicker card or paper was used as a mount after printing). Prints have a shiny surface and in original condition are usually warm brown, purplish-brown, purple or purplish black. Most albumen prints are now faded and yellowed, particularly in the highlights.

Ambrotypes — a one-off process, meaning only one copy of each photo was ever made. They were most popular between 1855 and 1865, when they were considered a cheaper alternative to the daguerreotype process which used silver plates. They have a less-reflective surface than daguerreotypes because they are glass plates rather than silver. The negative was bleached white, and when bound against a black mount appeared as positive.

Autochromes — one of the earliest commercial 'full-colour' photographic processes, introduced in 1907 by the brothers Auguste and Louis Lumière. The colour is created with dyed orange-red, green and violet-blue potato starch grains, roughly 1.6 million grains to a square centimetre. These were embedded in gelatin silver emulsion and, when exposed in the camera, they acted as filters allowing light to pass to the emulsion base. The autochrome was then processed as a one-off positive transparency. When held to the light the original scene was recreated in colour as light passed through the coloured starch grains.

Born-digital — images that are created in their original form using digital technologies. They are distinct from digital prints and files which have used digital technologies to copy from other sources like a photographic print or picture in a magazine.

Carbon prints — introduced in 1864 by Englishman Joseph W Swan, this expensive and complicated process used a paper support, coated with a pigmented gelatin (carbon powder mixed with gelatin and potassium dichromate), known as carbon tissue. After exposure, this was placed on a temporary support for development, then dried and transferred to the final support. Carbon prints are highly detailed and because they are made from inert carbon pigments, they are more resistant to light fading than silver-based photographs. In 1868, Swan sold his patent to John Robert Johnson and Ernest Edwards, who formed the Autotype Printing and Publishing Company (hence they are sometimes called autotypes). Carbon prints were most common from 1868 through to the first half of the twentieth century and were used extensively for both photogravure and rotogravure photomechanical processes.

Chromatypes (also chromotypes) — patented in 1855 by Frederick Frith and John Sharp in Hobart, these are similar to other hand-coloured photographs, using a salt paper print as the base layer, over-painted with watercolours and oils.

Cibachrome (officially known as Ilfochrome) — a positive-to-positive photographic process used to reproduce film transparencies on specially dyed photographic paper. The dyes are sealed in a polyester base which protects them against fading and discolouration. In the 1960s, the Cibachrome process was produced by the Ciba Geigy Corporation and in 1992 was renamed 'Ilfochrome'. Many artists favoured the process, which was used extensively in the 1980s and 1990s before it was discontinued in 2011.

Collotype (Albertype) prints — a process invented by Alphonse Poitevin in 1855, able to reproduce a wide variety of tones. Most collotypes were made between the 1870s and 1920s. Based on traditional lithographic methods, collotypes were initially made by exposing a light sensitised dichromate-gelatin mixture on lithographic stones. In 1868, Joseph Albert and Jakub Husník applied the method to glass and invented a collotype printing press which allowed print runs of up to 1,000. This modification is why they are also referred to as Albertypes. Many old postcards are collotypes.

Collodion negatives — the wet collodion process is usually credited to William Scott Archer who published a treatise in 1851. It allowed the photographic emulsion to be coated onto glass, vastly improving negative detail. Between 1851 and 1885 the wet and dry collodion processes dominated the negative market. Collodion is cotton soaked in acid and then dissolved in alcohol and ether, creating a syrupy, viscous fluid. This was sensitised with iodide (later replaced by bromide) and poured onto the surface of a glass plate, which was then inserted into the camera.

Cyanotypes — made using an insoluble iron compound, used in dye-making, known as Prussian blue. The process was simple, cheap and permanent — easy to use in the field or for amateurs with a limited budget. In the twentieth century cyanotypes were used to replicate engineering and architectural plans, commonly referred to as blueprints.

Daguerreotypes — one of the two earliest photographic processes, it was revealed to the public in 1839 by French inventor Louis Daguerre. In a one-off process. a positive image is produced on a polished silver plate. The highlight areas are silver mercury, while dark areas remain silver metal. The highly reflective and mirror-like surface of the daguerreotype is very delicate, and this is why almost all daguerreotypes are in miniature cases behind glass. Their popularity waned in the

late 1850s when the ambrotype, a faster and less expensive process, became available. However, in Australia and the United States, many continued to be made in the first half of the 1860s.

Dufaycolor — an early twentieth century colour process developed by French painter and inventor Louis Dufay. It was the first successful colour film system to be used for motion pictures and was popular in Europe during the 1920s and 1930s. It used a special colour filter, consisting of three layers of dyed gelatin, (one each for red, green and blue light) in front of a monochrome photographic plate. The plate was exposed three times, once through each layer of the filter, using a special camera with a rotating colour filter wheel. After processing, the resulting images were transferred onto a special two-colour film, which was dyed orange and blue. The orange layer absorbs blue light and the blue layer absorbs orange light, resulting in a full-colour image. It was relatively expensive and complicated, and it was overtaken by other, simpler colour film methods.

Film negatives — the earliest photographic negatives were introduced by William Henry Fox Talbot in 1839. Made of paper, they were known as calotypes or Talbotypes. In the 1850s they were replaced by glass plates, and in the late 1880s George Eastman introduced commercially viable film negatives. Initially these were made in a variety of sizes but by the 1930s, with the introduction of 35mm roll film for cameras, this size established itself as the preferred medium for many photographers. Manufacturers continued to produce larger film for professionals throughout the 1900s, as prints from these provided greater detail. These included 101 x 129 mm, 127 x 178 mm, 152 x 203 mm, and 203 x 254 mm film. Film negatives were replaced by digital-born technologies at the end of the twentieth century.

Gelatin dry plates — replaced the wet collodion negative process in the 1880s. Rather than being applied wet, these plates were mass produced and could be stored for months before they were used to take a photo. Introduced by Dr Richard L Maddox in 1871, the plates were coated with an emulsion based in gelatin that bound light-sensitive silver salts to glass plates. For decades this process was the standard for almost all genres of photography. In the early 1900s it was challenged by the introduction of cellulose acetate film, but gelatin silver and collodion dry plates continued to be used for process work until the 1950s.

Gelatin silver develop-out paper (DOP) prints — Joseph Swan patented silver bromide printing paper in 1879 and it became a popular develop-out paper in the 1890s. In the twentieth century it was the most common paper used for making black and white photographic prints. The 1960s saw more colour prints produced, but photographers making

black and white images still favoured this process until it was replaced by digital printing technologies at the end of the twentieth century. DOP photographs were made by exposing light-sensitive paper coated with silver bromide either by contact or projection, and then placing the paper containing the invisible 'latent' image into developing and fixing solutions in a darkroom. Bromide prints are known for their rich, deep blacks and tonal range.

Gelatin silver print-out paper (POP) prints — a light-sensitive photographic paper used in the late 1800s and early 1900s. The paper consists of two basic layers: a base layer, usually paper, and an emulsion layer containing light-sensitive salts such as silver bromide or silver chloride, which react with light to produce an image. Uniquely, it was able to be developed under gaslight rather than direct sunlight, making it easier for photographers to develop their images in indoor studios. The colour of POP silver chloride photographs usually ranges from light yellow-brown to red and darker brown. Silver bromide POP images are usually cooler and greyer. Collodion and shellac-based varnishes and coatings were sometimes applied to the surface of the print.

Half-tone printing — a method of creating an image in print that uses dots of varying sizes and densities. This process is used to reproduce photographic images and other continuous-tone artwork, such as paintings or drawings, as prints. To do this, continuous-tone photos are converted into a series of dots by photographing them though a halftone screen onto a film negative, which captures the dots as varying levels of density. When the resulting film negative is used to create a printing plate, the dots are transferred to the plate in varying sizes and densities. From the 1890s through to the end of the twentieth century half-tone printing was commonly used in printing photographs, newspapers, and books.

Lantern slides — these positive images on glass, 8.2 x 10 cm, were viewed by illumination through a projector. They were replaced by 35mm slides in the twentieth century, and then digital projection software like PowerPoint. They were usually made from copy negatives taken from original photos, prints and drawings. Generally, they were low quality as they were copied from other sources and the tonal range tended to be light to help with projection.

Paget plate — a screen-plate process where minute dots of pure pigment, added side-by-side, produce the overall effect of a given colour, when viewed from a distance. Originally the idea of Ducos du Hauron in 1867, it was picked up in 1892 by J Joly of Dublin, and JW McDonough of Chicago, who both came up with the idea of using glass plates etched with fine red, green and blue lines, about 100 to a centimetre. When this screen

was placed in contact with a sensitised photographic plate and then exposed, the developed negative contained, in black and white, the gradients of colour that passed from the lens through the screen and onto the photographic plate. To convert them to colour, a positive made from the plate was then bound in register with a similarly ruled screen to create a positive transparency. This transparency, viewed through the screen, recreated the gradients of colours from the original scene to create a colour photograph.

Photo-crayotypes (crayon collotypes) — referred to a process used for the hand-colouring of photographs by the application of crayons and pigments over a photographic impression. By the 1850s two well-established processes were in use. One involved printing a light photographic positive on salted paper using a toned or bleached negative to lower the contrast. The other used a magic lantern to project the photograph onto the rear of drawing paper or a canvas. Both formed the base from which to colour in the features using crayons, oils or watercolours. In Australia in the late 1850s William Hetzer, Edwin Dalton, the Freeman Brothers, Douglas Kilburn and others were all using variations of this process.

Photogravure — in common use between 1879 and 1950, this photomechanical process is widely found in printed book illustrations as well as photo and art journals. Initially developed by English inventor William Henry Fox Talbot in the 1850s, the process involved depositing a resinous powder on the surface of a sensitised, gelatin-coated copper plate. When heated, a delicate grain pattern was created which could be etched with ferric chloride. Czech artist Karel Klíč improved the process in 1879, using dichromate-sensitised carbon tissue. The final photogravure plates were printed using flatbed graphic presses. In 2009 MacDermid Autotype, the main supplier of carbon tissue, announced the discontinuation of photogravure carbon tissue production.

Photomechanical prints — this is not a photo-chemical process; rather the images are printed in ink, often using a printing press. They differ from other traditional printing processes where the printing surface was hand etched or engraved, as they are created from a photographic source. Because they use inks their surface is not as light-sensitive as photographs printed on albumen, bromide, chloride or collodion papers.

Platinotypes — in 1873 William Willis patented a printing process using platinum, a very stable metal, so that platinotype prints were less prone to fading and deterioration. The first commercial platinotype papers went on sale in 1880 and were widely used up until the beginning of World War One, particularly by the pictorialist movement and for high-end commercial portraiture.

Polaroids — developed by Edwin H Land in the 1940s, this 'instant' photography enables the photographer to develop film on the spot and produce a print within minutes. They required a special type of film consisting of several layers of chemicals. The film is placed inside a camera and when exposed a chemical reaction occurs. The film is then passed through a series of rollers inside the camera which contain a chemical fluid that reacts with the film, producing a visible image. The image becomes visible within a minute or two and the result is a one-of-a-kind, high-quality, colour print.

Stereographs — Charles Wheatstone recognised that our ability to recognise depth, walk through corridors and pick up objects was due to the way our brains combine the slightly different images of the world imprinted on our left and right eyes. He came up with the idea of creating a three-dimensional image from two separate two-dimensional ones. In 1838 Wheatstone presented stereoscopic images to the Royal Society for the first time. With that advent of photography, in 1839 he experimented with two separate photographs taken slightly apart which, when placed in a viewer become three-dimensional. These were called stereo photographs, or stereographs, and were hugely popular from the late 1850s right through to the 1870s. During the 1890s and early twentieth century there was a resurgence of interest in the format mainly created by large American publishing companies like the Keystone View Company and Underwood and Underwood. Some headsets currently used for virtual reality displays are based around Wheatstone's theory.

Tintypes (also known as melainotypes or ferrotypes) — similar to an ambrotype, this was a direct positive one-off process with a collodion binder layer and silver image layer. Rather than being on glass, the tintype emulsion is spread onto a lacquered iron support. Like the ambrotype the tintype is basically an underexposed image set against a dark background which brings out the silver highlights to create a positive image. Most common during the 1860s and 1870s, they were popular with street and travelling photographers who could develop them on the spot.

Woodburytype — patented by Walter Bentley Woodbury and Joseph Wilson Swan in 1864, it was one of the earliest photomechanical processes able to reproduce the delicate halftones of photographs at a commercial scale. An ink-based process, it was not subject to fading and is still regarded by many as being one of the most successful photomechanical processes. Woodburytype prints are predominantly found in books and magazines produced between 1864 and 1910. The process was almost completely replaced by collotype and half-tone photomechanical processes.

Shot includes works by James Abbe, Matthew Abbott, Margaret Allen, Geoff Ambler, Michael Amendolia, American & Australasian Photographic Co, Emmanuel Angelicas, Ben Apfelbaum, Australian Broadcasting Corporation, Charles Bayliss, David Beal, William (Harry) Beanham, Raymond de Berquelle, Nic Bezzina, Brian Bird, Mervyn Bishop, Frederic Bonney, Cecil W Bostock, Francis Patrick (Pat) Burgess, Henry William Burgin II, Walter Burke, Frederick Spencer Burnell, Stanley Charles Calderwood, Jeff Carter, Frank Cash, Harold Cazneaux, CBC, Herbert Chargois, Charles Chauvel, James Allan Chauvel, Rodney Cherry, Cinecraft, Cinesound Productions, Darren Clark, Marcia AM Clark, William Colbeck, Ellen Comiskey, Olive Cotton, Brenda L Croft, Edwin Dalton, Patrick Dawson, John Degotardi Jr, Ian Dodd, Robert Donaldson, Max Dupain, Stephen Dupont, Augustine Dyer, Edward B Eastwick, Rennie Ellis, John Ellison, Everingham Photo Company, S Farrell, Noel Fisher, Gerrit Fokkema, Helena Forde, Arthur Ernest Foster, Josephine Ethel Foster, Claus Franzen, Harry Freeman, Freeman Brothers & Prout, Frederick Frith, Lawrence Frost, Hudson Fysh, Gibbs Shallard & Co, Thomas Glaister, George Barron Goodman, Gove & Allen, Leon Gregory, Ian Grimes, Hall & Co, Liz Ham, Geoffrey Hawkins, Rex Hazlewood, Noel Hazzard, Norman Herfort, William Hetzer, David Hickson, Jack Hickson, Rob Hillier, Charles Archibald Hoadley, Douglas Holleley, Patricia Holmes, Bernhardt Otto Holtermann, Sam Hood, Ted Hood, Hughes & Mullins, Frank Hurley, Marjorie Hystek, Ivan Ive, Alec Iverson, Jamie James, John Janson-Moore, FR Johnson, Ellen José, Arthur Robert Henry Joyner, Ichiro Kagiyama, John William Kaye, Milton Kent, Valmond Kinley, Luke Kyniston, Joy Lai, Charles Francis Laseron, V Laviosa, *Le Courrier Australien*, Jon Lewis, John William Lindt, Peter Luck, Monte Luke, Wendy McDougall, William Henry Macguire, Sally McInerney, Douglas McNaughton, Don McPhedran, Ruth Maddison, Roger Marchant, Douglas Mawson, Beaufoy Merlin, Methodist Church of Australia, Tracey Moffatt, David Moore, May Moore, Mina Moore, Cyrus Saul Moss, Tony Mott, Peter Darren Moyle, Baden Herbertson Mullaney, Charles Nettleton, John Hubert Newman, NSW Government Printer, NSW Police Department, John Ogden, Ray Olson, Arthur Onslow, Lloyd Osbourne, Damien Parer, *Pix* magazine, Herbert Ponting, Una J Riall, Robert Rice, Michael Riley, Anne Roberts, Edward (Ted) Alexander Roberts, Francis Whitfield Robinson, John Ruffels, Dean Saffron, Albert William Savage, James H Shaw, George Silk, Athol Shmith, JF Smith, DW Stevenson, *Sun* newspaper, Therese Sweeney, Kozaburo Tamamura, Mark Tedeschi, Wendell Levi Teodoro, Douglas Thompson, *Tribune*, August Tronier, JL (Jack) Turner, Melvin Vaniman, Jozef Vissel, Walkabout, Robert James Wallace, Charles Walter, Edward W Ward, J Forbes Watson, Greg Weight, Louise Whelan, Maslyn Williams, Thomas Richard Williams, Thomas Wingate, Fiona Wolf, Ray Wolfe, Samuel Wood, Walter Woodbury, Charles Woolley, William Yang, Anne Zahalka.