

Rapid Digitisation Project

Australian Museum

A Guide to Handling and Digitising Archival Material - Registers

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A Guide to Handling and Digitising Archival Material - Registers

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The Atlas of Living Australia (ALA) is building a better picture of Australia's animals, plants, fungi and micro-organisms for research, taxonomy, management, education and other uses.

It aims to enable anyone to locate, access and combine information on all aspects of Australian biodiversity, online.

The ALA website already holds over 23 million records on the distribution of Australia's fauna and flora, as well as maps, images and literature.

Anyone using the ALA site can create lists and maps of the species around a location and access species pages, distribution maps, photos and other multimedia.

The ALA site also provides access to reference lists of species' names and classifications, databases on specimens held in natural history collections, databases of field observations, published literature, identification keys and a wide range of other databases and web sites.

The ALA needs more information about all Australian species to help protect and manage Australia's biodiversity. Members of the public can help by contributing photos and information to the Atlas site (www.ala.org.au).

Key outcomes will deliver more integrated data, new tools and services which will provide further possibilities for research and management.

This document has been written by the following staff in the Australian Museum's Collection Informatics Unit: Paul Flemons (Manager), Leonie Prater (Digitisation Officer), Rhiannon Stephens (Digitisation Officer), Michael Elliot (Senior Technical Officer). Special thanks to Vanessa Finney (Archives and Records Manager) for her valuable contribution.

1. Introduction

1.1 The Australian Museum Archives

The Australian Museum Archives holds records created by the Museum which are preserved permanently because of their enduring value for legal, administrative or historical research purposes.

The earliest records include the Minutes of the Committee of Superintendence from June 1836 and Outward Letters books from 1837.

Other unique records held include manuscript and printed material, letters, minute books, financial ledgers, field diaries, research notes, administrative and exhibition files, photographs, maps, plans, drawings and illustrations, news cuttings, audio-visual material and historical museum artefacts.

In addition to the Museum's own institutional records, Archives also holds some acquired papers and photographic collections from people who have been associated with the Museum or who have worked in closely related fields.

The Archives' collection of historical objects, memorabilia and artefacts complements our paper and photographic records in telling the story of the history and development of the Australian Museum.

The collection comprises material generated within the Museum as well as donations from scientists with a strong connection to the Australian Museum and includes:

- objects used by scientific staff in their research, including scientific instruments and field equipment
- a selection of items from exhibitions that shows how displays have changed over the years

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- objects representative of the fabric and infrastructure of the Museum. Most of our heritage furniture collection is still in use today and is part of the NSW S170 Heritage & Conservation Register.
- a selection of items representing how the Museum has been advertised and promoted.

1.2 Registers

Until the 1870s, the specimens in the Museum's collection were individually labelled and most were on public display in the 'cabinets of curiosities'. In 1877, Edward Palmer was employed to compile the first compilation Register of the existing collections. The Palmer Register was followed by 'A' and 'B' Registers, where all acquisitions were collectively catalogued. From 1886, separate specialist registers have been maintained, reflecting the major organism or object groups collected by the Museum.

1.3 Why digitise Registers?

Registers are important to the Museum's collections as they contain information relating to the specimens held in these collections.

The importance of this Digitisation Project is to allow Register information to be accessed by anyone without further handling or removal of the Registers from the Archives. The archival images will be available to the Australian Museum staff with the possibility of it being extended to the research communities and the public.

The Museum has developed good practices and processes for digitising Museum Registers using volunteers. This guide describes these and should be used in conjunction with the available video that describes the same practices and processes.

2. Process and procedures

2.1 Health and safety preparation

Before handling a register or any other archival material clean hands thoroughly and remove all jewellery. Oils and acids from skin can be transferred to the paper and are potentially harmful to archival material. Some of the older archival material may have red rot. Red rot is a type of deterioration of the surface of tanned leather occurring when certain tannins degrade to a fine red powder. With some people, the powdery dust may cause mild to moderate skin irritation or minor localised rashes, itching eyes or an allergic reaction similar to hay fever (i.e. sneezing, coughing or runny nose).

In order to minimise any contact with red rot, supplied latex gloves are to be used when handling a Register with red rot present.



It is a requirement to wear covered shoes in the laboratory to avoid personal injury from a falling item or trolley.

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2.2 Handling Registers

In order to avoid damage to a heavy register, always use two hands whenever handling a Register and to avoid pulling the Register by the spine. Register handling will involve removing the Register from the shelves in archives to the trolley which will be used to transport the registers to the laboratory for imaging. At no time, should there be more than two registers placed on top of each other on the trolley

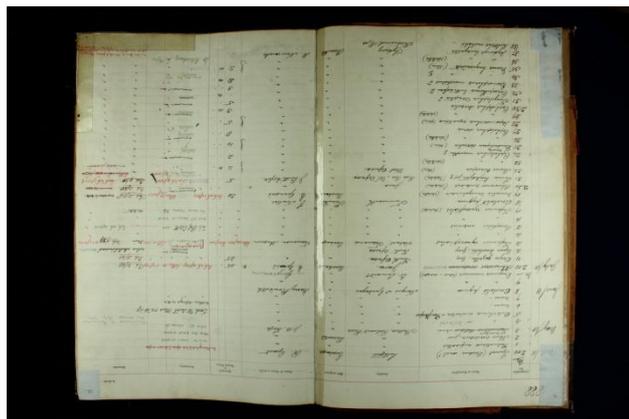


2.3 Assessing Registers for imaging

In the laboratory, prior to removal of the Register from the archive box, assess if red rot is present and whether gloves are necessary for safe handling. With both hands, remove the Register to the cradle and make an assessment of the register with the supervisor to determine the following:

- whether a Register is fragile and requires extra support to avoid damaging the spine.
- whether a Register is numbered.
- whether there are inserts which need to be digitised

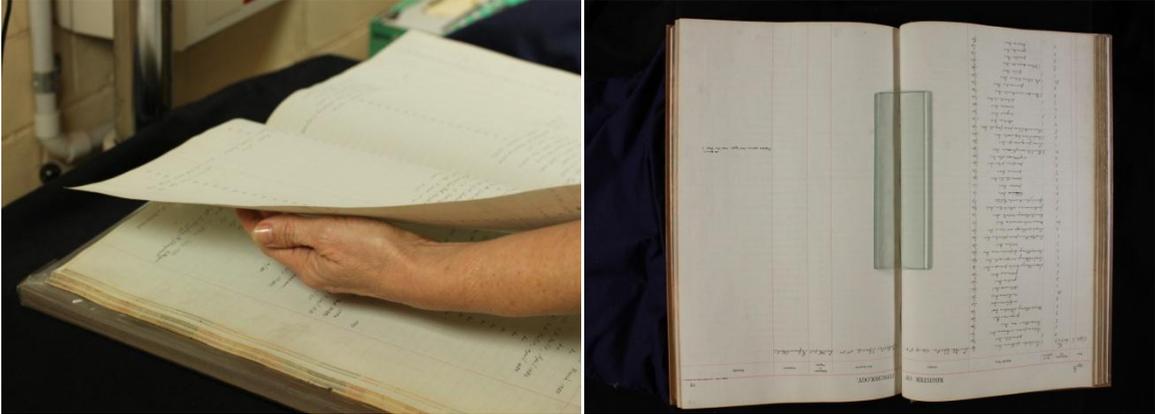
Remove gloves after opening the register cover.



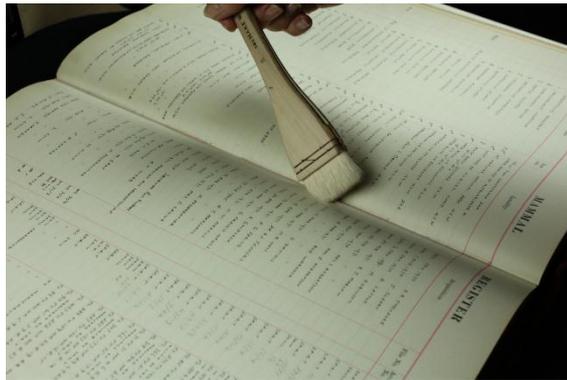
Place the Register upside down and square on the black cloth which covers the cradle and surrounding workstation area. The image of the black cloth fills the camera frame providing a clearer image by showing a contrast between the edges of a Register and the background. A Register needs to be lying flat in order to take a good image of both pages and avoid shadows which may cause a blurred image. In order to achieve this, assess whether the Register's binding is adequately supported and lying flat on the cradle or whether it will require a cushion to provide extra support to achieve a good image.

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When opening the Register or turning a page to be imaged, it is best to support each page by using the flat of your whole hand to turn it from the top left hand corner. As you proceed to turn pages in a Register, the pages may no longer be flat so it will be necessary to place glass weights on the pages to hold them down and in some situations, using finger tips, being careful not to cover any writing.



Use the supplied brush to gently brush any dirt from each page along the inside of the spine joint and away from yourself.



3. Workstation setup

The workstation is set up with a camera on a copy stand, the Register placed on a cradle and a computer with dual screens.

It is a three step process to capture the image of the Register:

1. The Register Handler prepares the Register for imaging.
2. Imaging the Register and data entry.
3. Preparing the next page for imaging.

At each workstation there will be two volunteers. One of whom will handle and turn the pages of the Register (the Register Handler) and the other volunteer will image and database the pages (the Digitiser).

The following steps will guide you in the systematic usage of the equipment (i.e. computer, camera and database) for digitising archival material.

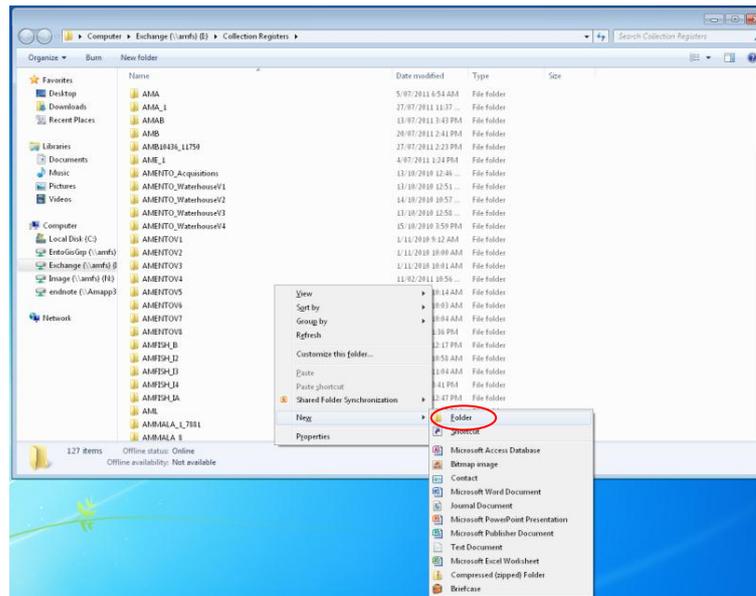
- Use the generic login to log onto the computer.
- Turn the lights on.
- Turn the camera on and remove the lens cap, place the lens cap in the equipment box.

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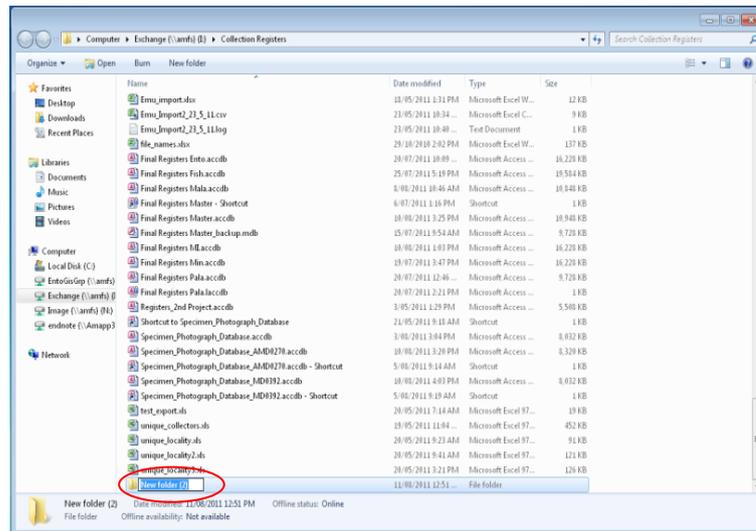
3.1 Creating a folder

Before starting each new Register, a new folder must be created.

Create a new folder in I:/Collection Registers. To do this go to Windows Explorer, open Collection Registers on the left hand side. Click on the right hand side with the right mouse button to get a new folder as shown below.



Type in the name of the folder. When deciding new Register names follow the example: AMMALA_1_7881 (Australian Museum Malacology Register number 1 to Register number 7881)

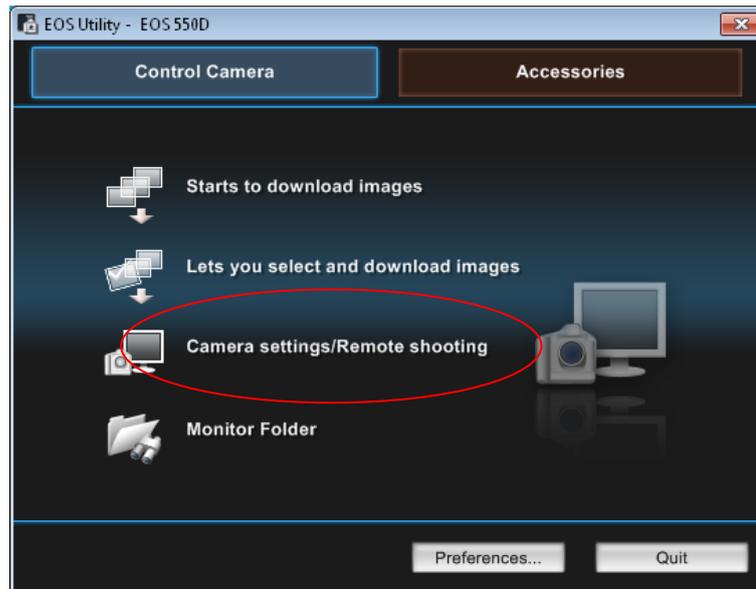


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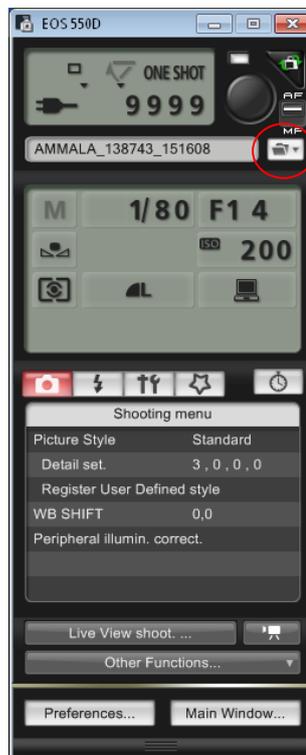
3.2 Applications to open on the desktop

3.2.1 EOS utility

Double click on the EOS Utility icon on the desktop (unless it opened automatically when the camera was turned on), this will open up the below window. Click on Camera settings/Remote shooting.

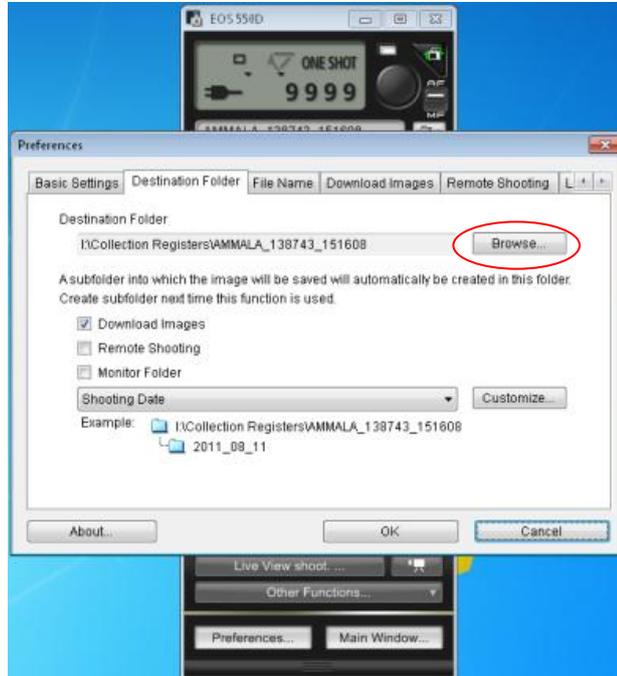


By clicking on Camera settings/Remote shooting, the EOS 550D window will open to the camera's remote shutter control. Click on the folder icon to change the folder that the images are being saved, if needed.

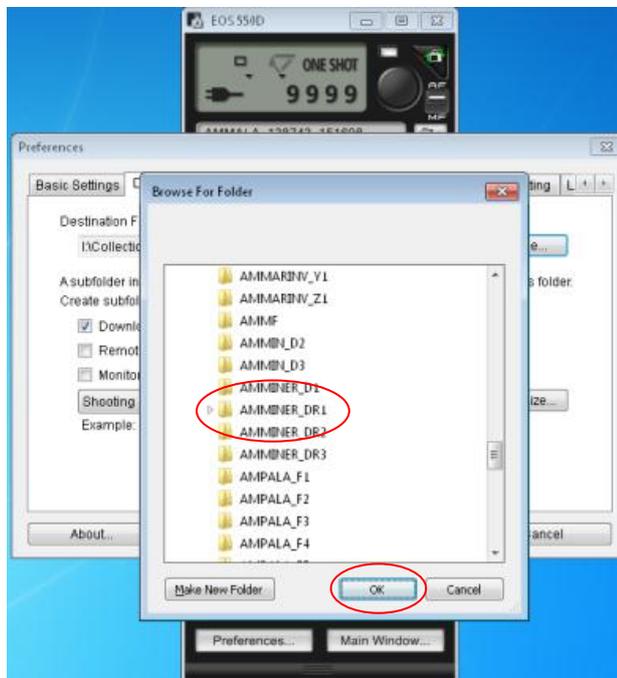


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Click on Browse in the Preferences box.



Navigate to and select the folder where the images for the Register will be saved and press OK



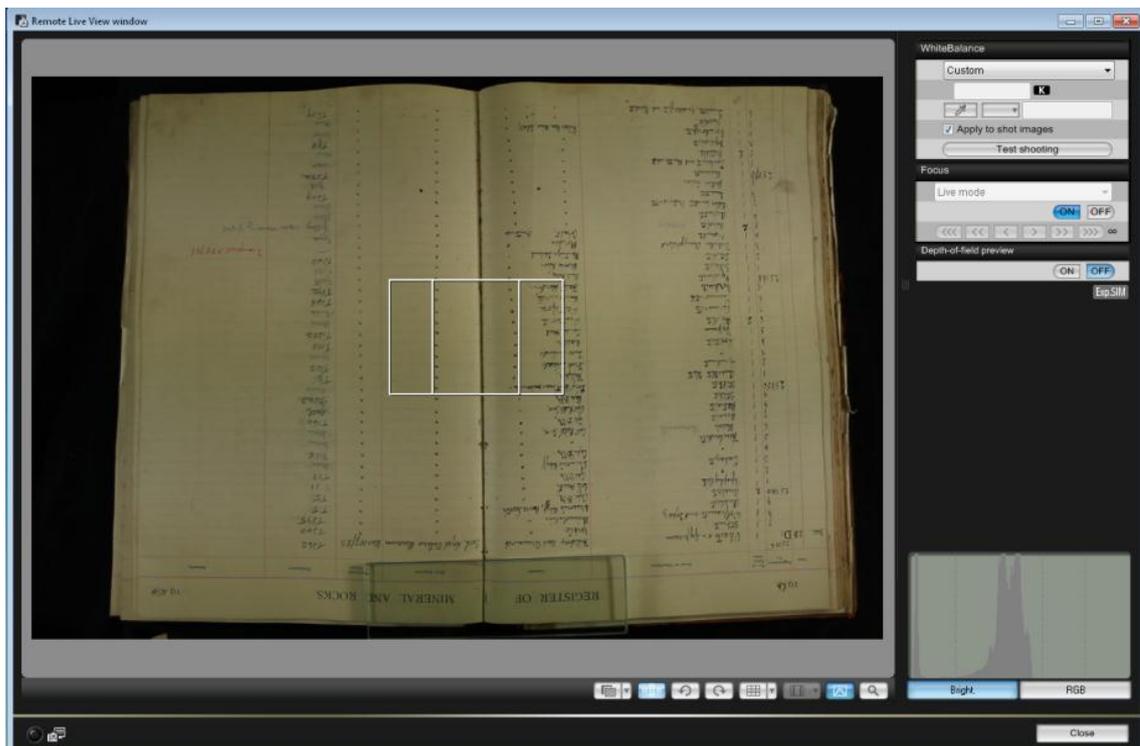
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3.2.2 Remote Live View Window

Click on Live View Shoot on EOS utility.



This will open the Remote Live View window.



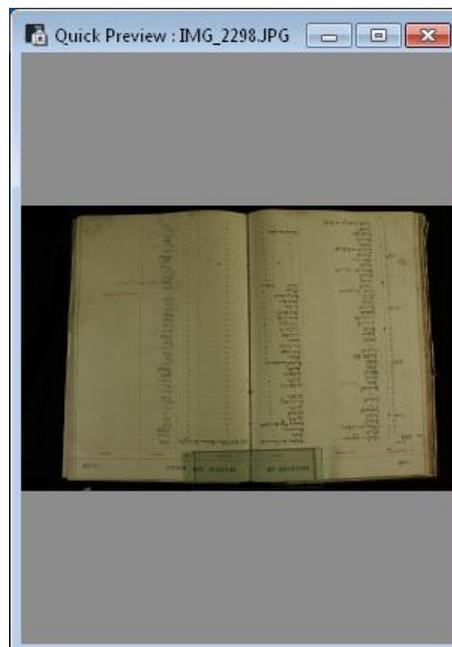
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3.2.3 Quick Preview

Click on Other Functions on EOS utility and then on Quick Preview.



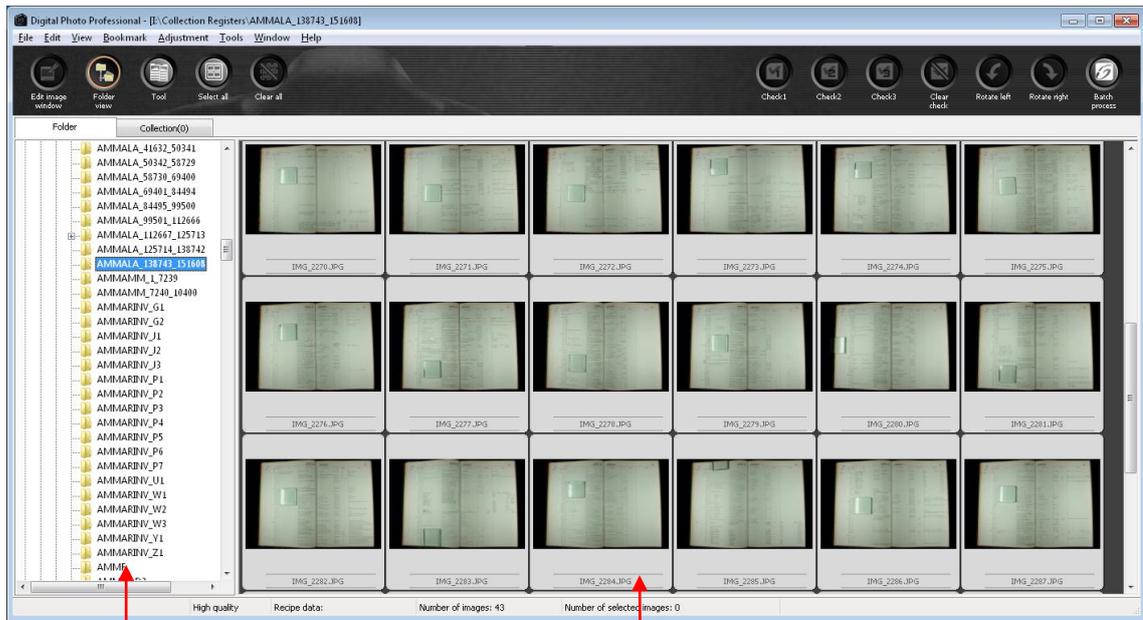
This will open the Quick Preview window.



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3.2.4 Digital Photo Professional

Double click on the Digital Photo Professional icon on the desktop. On the far left hand side go to: My Computer/I:/Collection Register/(Register Name).

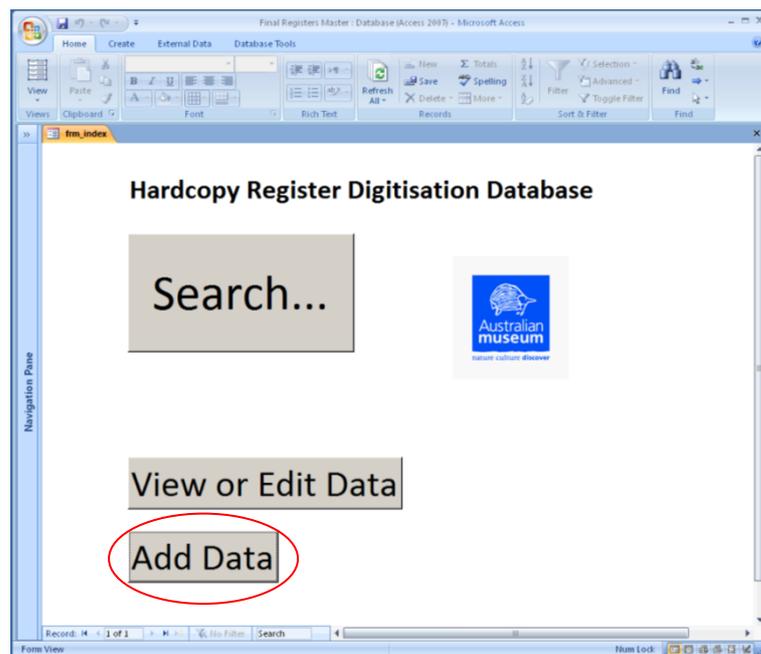


Folder where the image is saved

Image library

3.2.5 Database

Open Final Register Database which can be found on the computer desktop. Click on Add Data.



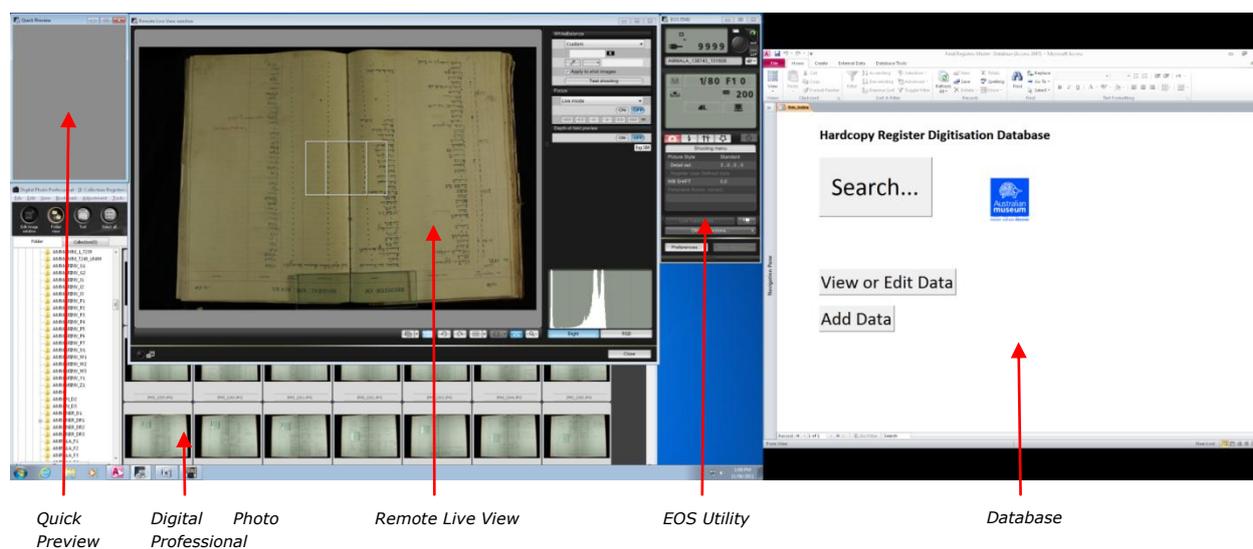
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3.2.6 Position of open windows

The positioning of the open window applications on the dual monitors is a personal preference however guidelines are outlined below.

Monitor 1 (left)

Monitor 2 (right)



4. Imaging the Register

The Register Handler prepares the Register for imaging making sure that it is 'upside down', centred and flat in the camera view. The first image to be taken will be the register cover, if it has writing and secondly, an image of the spine's title. The inside pages, preceding the written recorded pages may have writing which needs to be imaged. A microfilmed insert, if included does not need to be imaged. The last page of a register should have the 'Last Page' insert imaged if the register does not have its own recorded last page notation.

Use the camera's remote live view finder, to ensure that the Register is aligned and in the camera frame and that the black cloth is covering the cradle and the background.

The camera that we are using in the workstation is a Canon EOS 550D mounted to a copy stand with free standing cold fluorescent lights.

The usual settings for the camera are shutter speed 1/80, aperture F14, ISO200 and custom lighting.

A basic explanation of the camera settings is as follows:

Shutter speed. The time that the shutter is open. These settings are usually measured in seconds or fractions of a second e.g. 1/30, 1/60 and so on. The smaller the fraction the faster the speed (e.g. 1/1000 is much faster than 1/30). The greater the seconds or fraction of a second setting the longer the shutter is open. This can create problems with camera shake due to movement of the copy stand for long exposure times.

Aperture. The aperture is the size of the iris in the lens that also controls the amount of light that the lens lets into the camera and the depth of field (i.e. how much of the image is in focus). The settings for aperture are called f-stops and are usually a standard set of numbers f/2.8, f/5.6, f/8, f/11, f/16, f/22, f/32. These numbers are actually fractions (where the number 1 has been replaced by the letter f), but are usually expressed as full numbers (e.g. f 1/16 is usually expressed as "f sixteen").

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Each step up in aperture value halves the amount of light reaching the sensor. Each step down in aperture value doubles it.

Larger apertures (where lots of light gets through) are given smaller f-stop numbers and have shallower depth of field. Smaller apertures (where less light gets through) have larger f-stop numbers and a greater depth of field.

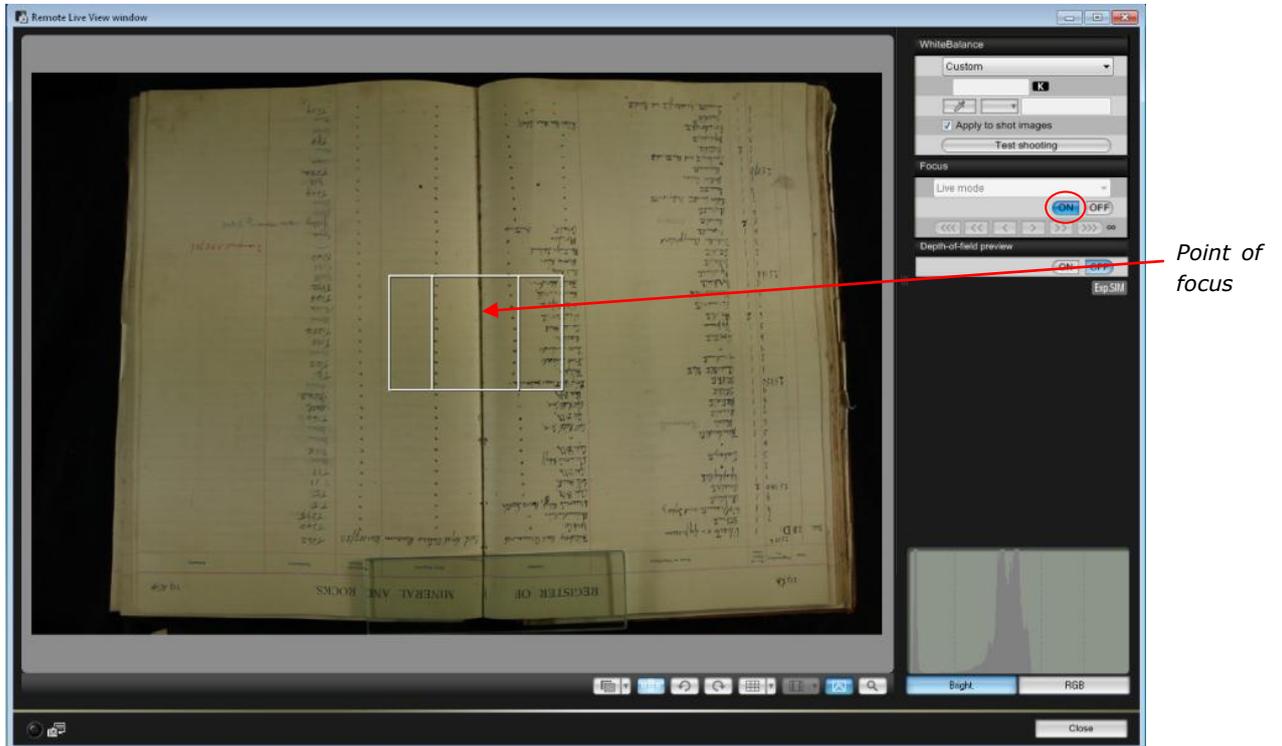
ISO Settings. ISO is the sensitivity to light of the imaging chip in the camera. The lower the number the less sensitive the camera is to light, and the lower the electronic noise.. Higher ISO are generally used in darker situations to allow for a faster shutter speed (like in the Dinosaur exhibition). However, the cost is noisier shots. ISO 200 is sufficient for adequate image quality for specimen data capture.

These parameters can be changed in the EOS 550D window.



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In Remote Live View window the point of focus is used to ensure that the Register pages are sharp. Click on Focus>Live Mode>On to focus the image.



The computer operated shutter control on EOS Utility is used to take the final image.



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Take the photo and maximise the Quick Preview window to check the positioning of the Register and to make sure the background is covered by the black cloth. Double clicking on the image in Digital Photo Professional can also be used to zoom in on an image to check the focus and clarity.

If the image is not satisfactory, go into Digital Photo Professional and click on the image so that a yellow outline appears, press the delete button and yes to delete the image. Care must be taken that only one image is selected for deletion and that the image number correlates in the database.

The Digitiser images each page of the Register and checks for a good quality image and writing image clarity.

If a whole register has not been imaged during the day, then place the 'To be Imaged' insert on the page to be imaged next time. Ensure that all inserts, if any have been placed in the Register prior to replacing the Register into the archive box and returning to the supervisor. Put gloves back on if there is red rot and place on the trolley for transport to archives.

5. Database steps

The Digitiser will enter the Register page information into the database for each image and the Register Handler will provide a quality check on data entered. Check the data in each field on the database matches those on the Register image screen. If you find it difficult to read the information on the Register, you can use the zoom tools in Digital Photo Professional by double clicking on the image. If the information is correct the next page is ready to be imaged, click the 'Add Another' button on the database. If any information is incorrect, then overwrite it with the correct information and prepare the next page for imaging. Once the Digitiser is satisfied with the final image the Register Handler can prepare the next page for imaging.

The fields of the database need to be filled to correspond with that on the Register.

Register Name:

Image File Name:

Page Number:

Year:

Reg Number From: to **Reg Number to:**

Photographer:

DataEntryBy:

Register name: Name of the folder on I: where the images are stored

Image File Name: Camera file name of image i.e. IMG and number in the next field. This can be found below the image in Digital Photo Professional.

Page Number: Page number of the Register (written in pencil at the top of the page).

Year: Register year (if there are multiples on the same page – always use the oldest date e.g. 1977, 1978 – use 1977).

Reg Number From: Prefix in drop down box from the List of Museum Registers and 1st register number at the top of page.

Reg Number to: Prefix in drop down box and last Register number.

Photographer: Digitiser's name

DataEntry By: Digitiser's name

Add Another: to save and go to the next record

Close: Save and close at the end of the day.

6. Points to consider

When assessing and imaging Registers consider the following:

- Assess the Register to see whether it has been numbered. If not, use the provided pencil to lightly number, in small print, the top right hand pages starting with number 1, 3, 5 etc. Every 15 pages check for numbering accuracy.
- Proceed to take an image of the cover if it has writing on it and take an image of the writing on the spine.
- Take an image of the inside of the front cover if it has writing on it. Fill the database in to be page 0, the 2nd page inside the front cover would be page 0.1 and so on.
- If there is no writing inside the front cover, go to page 1.
- At the end of the Register take a photo of the inside back cover with the insert 'Last page of register' and the register number in the database will be Reg number from 0 to Reg number to 0.
- If there is an extra piece of paper stuck to a page then 2 images need to be taken to capture the information underneath. In the database the actual page will be the page number and the extra information on that page will be the same number plus 0.1 e.g. page 23, page 23.1

At the end of the day, close everything on the computer desktop and shut the computer down. Turn off the camera, put the lens cap on and turn off the flash. Make sure the workstation is neat.

7. Damaged archival material

If any part of the archival material is broken or torn when imaging, immediately consult your supervisor. Any pieces must be preserved and appropriately handled.