Development of the Elgin Museum Recognised Collection for public and scientific use

The Grade 1-listed Elgin Museum

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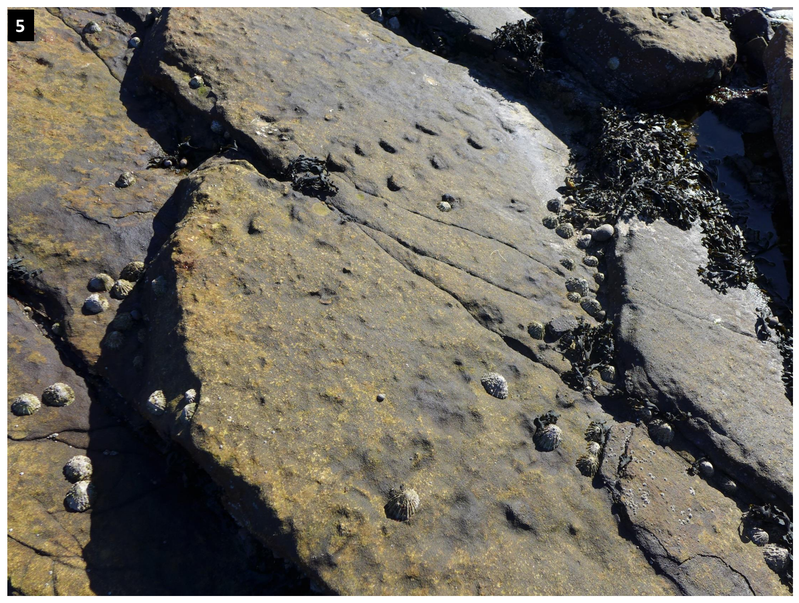
Model of the Permian pareiasaur *Elginia mirabilis*, the 'Elgin miracle'

Introduction

The Elgin Museum, located in the northeast of Scotland, offers a range of exhibitions on Moray geology, archaeology, local history and art, is a focal point for learning and activities within the community and a tourist information access point. The primary reason for the commission of the building was the acquisition of local fossils by the Museum's founders. Construction took place under the guidance of the Elgin and Morayshire Literary and Scientific Association (now the Moray Society) from 1836, using the locally-sourced sandstones from which the fossils came to create an impressive Italianate-style building. The same stone has since been used for the facade of the National Museum of Scotland, Edinburgh. The doors finally opened in 1843 and have remained so ever since.

Past

Elgin Museum, Scotland's oldest independent museum, is of particular importance for its Scottish Government Recognised Collection of Devonian fish, Permian and Triassic terrestrial reptile, and trackway fossils that are well-known in scientific circles and originate only in Moray. These were collected from river-side, small-scale quarry and shoreline localities in the early-mid 19th Century and promoted by local figures, such as Rev Dr George Gordon, Dr John Grant Malcolmson and Lady Eliza Gordon Cumming of Altyre; their work in turn attracted the far-reaching interest of eminent geologists and palaeontologists of the time, such as Murchison, Sedgewick, Miller, Buckland, Agassiz, Lyell and Huxley among many others. Descriptions of the fossils made at that time are now considered key pieces of literature that are still relevant today (for example, '*Recherches sur les Poissons Fossiles*' by Agassiz (1833-44)). The fossils have contributed to important discussions, such as those regarding the distinguishing of Devonian- and Permian-aged rocks, early tetrapod evolution, dicynodont phylogeny and the relationship of the earliest dinosaurs following excavation of *Saltopus*; this list is by no means exhaustive. The Elgin reptiles are also the stereotypical case study for the Permo-Triassic of the United Kingdom, with reconstructions of the animals and their surrounding desert environment reproduced widely in palaeontology texts and popular science.



Figures: 1, one of only three *Glytopomus* fish fossils (1978.311.2); 2, the only specimen of the lungfish *Phaneropleuron* (1978.349.1); 3, the lungfish *Rhynchodipterus* (1898.2); 4, Permian footprints from the Clashach Quarry (1978.883.3); 5, an *in situ* trackway on the Hopeman shoreline; 6, an overview of Cove Bay near Hopeman showing a fault and adjacent cave.

Present

The majority of quarries that have sourced these unique and diverse fossils have now closed or are inaccessible, meaning new specimens are not likely to be recovered. This fact has further increased the importance of the Recognised Collection. Re-examination of the fish in particular has found that many are complete and at least partly articulated, with several preserved in 3D.

Elgin Museum offers an introduction to the fossils and their origin as a permanent display (Figures 1-3, 7), which emphasizes the environmental transition in Moray from an ancient lake in the Devonian to a desert in the Permo-Triassic, and the associated change from fish to reptile fossils.

The Museum, as a central point within Moray, is also a source of location and interpretive information for find sites. For example, evidence of the ancient reptiles whose remains lie in the Museum can still be found as trackways on the Moray Coast (Figures 5-6), and Quarrywood hides long-closed, small-scale excavations where clues to the past environment can still be seen.

Improvements to the care and display of the geology collection:

Collections - Re-examination of all fossil, mineral and rock specimens on site to determine condition; loss of several non-Recognised fossils to pyrite decay
Compilation and updating of specimen information for each accessioned specimen (MDA cards, object entry forms)
Documentation of current location of specimens within and, where applicable, outside Museum building
Photographs of each specimen to complement a new catalogue that includes weight and dimension information
Systematic re-organisation of specimens within and among boxes in the West (geology) Store, by stratigraphic level and find site (Figure 8)

Education and scientific resources - Scottish Recognised Collection of fossils for use as an education and scientific resource (Figures 1-4, 9-13)
A 'Sandstone Collection' providing reference specimens for the Devonian, Permian and Triassic quarries in the area that have sourced fossils
A range of sedimentary, igneous and metamorphic hand specimens from a broad area of Scotland as a further reference collection
Fossil and mineral handling boxes to be used in local activities and outreach visits

Museum Building - Simple addition of new lighting in offices and stores to improve working conditions

Problems arising - Access to the West Store restricted by several large stone statues, collected over 100 years ago in Asia, now moved to another store
Store access still limited by 'Cathedral stones' to be re-located in Museum cellar
Pre-occupation of some accession numbers leading to discussion of specimen value and point at which disposal is the best option

Future

Initiate new research – A number of reptile fossils from the Recognised collection have been moulded and cast for scientific study, notably the 'Clashach skull' (Figure 10) used to demonstrate advances in CT and MRI scanning technology on the BBC programme 'Tomorrow's World'. A life-size model skull from this data is on display, highlighting the importance of modern review of old specimens, of which Elgin Museum has many!

Continuation of educational activities - The Museum has an active outreach and school visit programme to ensure the next generation has the opportunity to see and learn in their local museum; a revamped website provides an up to date list of activities. The Museum also provides an easy way to contact staff and experts in several academic subjects across Scotland, notably for identification of objects.

Revision of displays – We are continually looking for new and interesting ways of displaying specimens and, in the short-term, have been correcting and updating signs and explanatory cards associated with objects.

The long-term plan – Re-organisation of the Recognised Collection, due for completion in February 2015, will be followed by the same process in the other (North and East) stores. The West Store will be fitted with suitable drawers and stacks to more permanently house the Recognised Collection and improve access further still. Weight and dimension data for every geology specimen is being used to plan any necessary strengthening of the floor and walls.

Acknowledgments

We thank the staff and volunteers for their dedication to the running and upkeep of the Elgin Museum, and Dr Nick Fraser and Dr Stig Walsh at the National Museum of Scotland, Edinburgh, for their advice and support during on going developments. The work of the curatorial assistant, relating to the Recognised Collection, was financially supported by the Scottish Government Recognition Fund.

Figures: 7, the Rear Gallery at Elgin Museum; 8, the West (geology) Store showing the limited space available and the current storage of specimens; 9, model of the *Elginia* skull on display; 10, the 3D prototype of the Permian dicynodont skull, cast from an only partially exposed fossil from Clashach Quarry, Hopeman. The method of producing the cast was shown on the BBC's 'Tomorrows World' in 2001; 11, the Triassic reptile *Hyperodapedon* from Lossiemouth (1886.3Ai); 12, the Devonian placoderm *Pterichthyodes* showing the extensive dermal armour of the body and pectoral fins as viewed from the ventral surface (1978.136.2); 13, *Pterichthyodes* preserved as a 3D cast of the body with both ventral and dorsal moulds of the anterior body, head and pectoral appendages (1978.143.64).