

Rubber copy of Berwickshire cliff to fit mould of natural history exhibition



Workers abseiled to a platform to paint the 'geological timetable' rocks at Siccar.

Rock of ages cast in story of geology

DAVID MONTGOMERY

RUGGED Siccar Point has long been famous as one of the crucial sites in the development of modern geology, but seldom has it been the subject of such close attention.

Such is the importance of the site, several miles north of Eyemouth on the Berwickshire coast, that a team of Canadian moulders has spent the past week suspended 80ft above the sea painting coats of latex on to the rock.

Today the 15ft by 20ft cast will be peeled from the cliff-face, then rolled up like a carpet and lifted off, before being shipped to New York.

By this time next year, the 700lb rubber mould will be on display at the American Museum of Natural History as part of its Hall of Planet Earth exhibition.

It will be on view alongside other sections copied from key geological sites, such as the Grand Canyon, Mount Vesuvius and the Swiss Alps, to help to explain how the planet developed.

Hundreds of thousands of visitors will be able to "visit" the section of cliff, which was used in 1788 by James Hutton, the Scot regarded as the father of modern geology, to unlock the mystery of the Earth's true age.

The layers of rock at Siccar



James Hutton: Used site to discover Earth's age

Point provide a tangible timetable to the geological advances and inspired Hutton to utter his famous words on the Earth's longevity: "I could see no vestige of a beginning, no prospect of an end."

Graham Stewart, the assistant co-ordinator of the Hall of Planet Earth, yesterday described the importance of the site.

"In some ways Scotland is the geology capital of the world and much of what we know about earthquakes and volcanoes was learnt here," he said. "What is extraordinary about Siccar Point is that it showed geologists, for the first time, the connection between sedimentary rocks and other types of rock formed from sediments."

The New York exhibition, which opens next June, will be linked to displays on biodiversity and the movement of stars and the planets.

Mr Stewart said: "What James Hutton noticed here is analogous with what we want to show to visitors to the exhibition: that the Earth is dynamic and that time is great."

Yesterday, as the final layer of latex was being painted on, Mr Stewart added that Siccar had proved the most difficult site they had come across. "The site we have chosen is about one-third of the way down the cliff-face, so at the moment the modellers are having to abseil to a platform which has been built."

For other specimen areas it is possible to work from the ground, or on a ladder, but the experts had to carry their equipment across fields before assembling the platform and securing their ropes to the cliff-top.

The team has applied three coats of latex and a layer of cheese cloth between torrential downpours, and a final crust of fibreglass was being painted on yesterday.

Points are marked on the surface before peeling off the cast - described as a "giant stookie" by staff at Scottish Natural Heritage (SNH), which helped to arrange the work.



Peter May, of the cast firm, walks the cliff-top as it is painted below. Pictures: Neil Hanna

The points will be matched later to a bed of nails and the latex will be stretched over the frame to recreate the shape of the cliff-face. Plaster will then be poured into the mould.

The specialists from Research Casting International, which is based in Ontario, have worked for museums throughout the world. They created moulds for eight skeletons for the British Museum in London.

The company has also used its skills at Universal Studios and for the special effects in the film *Jurassic Park*.

As Peter May, of Research Casting International, stood shivering on the windswept cliff-top yesterday, he said that access was proving the hardest

part of the project. "Normally this type of job would only take two or three days. But hanging off ropes makes it a bit more exciting."

The Siccar Point formation, known as Hutton's Unconformity, allowed Hutton to formulate a theory about the development of the planet after he spotted the site during a boat journey along the coast.

Geologists at the time were aware of the harder, folded rocks - sandstone and shale - that formed the Lammermuirs and the cliffs of Berwickshire. They were also aware of the flatter sedimentary strata that formed the east Lothian coastal plain.

What they had not found was a "join". Hutton found just such

a junction at Siccar Point, which had been laid bare by the action of the waves on the rock platform and cliffs, allowing several chapters of geological history to be seen in one place.

Alan McKirdy, the head of SNH's earth science branch and the co-author of a book about Hutton, said this find set the conditions for the term "deep time" and laid the foundations of many geological principles which are still valid today.

"This site is described as one of the most important geological sites in the world, because it's where the science of modern geology was born," he said.

"James Hutton gave that to the world."