Geography Group Report (January)

Jane Harrison

Geography encompasses many subjects. Over the coming months the group will explore some aspects of physical geography, which includes topics such as climate and weather, vegetation and soils, as well as landforms and the processes that shape them. Phil Johnson, who has now taken over as convenor of the Geography Group, set the ball rolling by giving an excellent illustrated talk about the Earth's origins.

To understand how the Earth's oceans and landmasses developed, it is necessary to go back to the Big Bang and the origins of the solar system. Helped by gravity, the Earth was formed from colliding dust and gas particles between 4 and 4.6 billion years ago. As it began to solidify the molten interior separated into the inner and outer core, mantle and crust, which form the structure of the Earth today.

For millions of years the Earth's surface remained a molten inferno. Volcanoes played a role in releasing gases and water vapour essential for life to develop on the planet. As it cooled the crust divided into various irregular sized tectonic plates, which fitted together like a giant 3D jigsaw puzzle. The shapes and positions of these oceanic and continental plates have slowly changed through geological history. The oldest and thickest parts are geologically stable regions called cratons, which form the foundations of our continents. They are associated with rich mineral resources.

Along divergent or constructive boundaries, where plates are moving apart, such as in Iceland, new crust is being formed. Mid-oceanic ridges and rift valleys are being created as a result. Around the Pacific Ocean "Ring of Fire", there are convergent or destructive boundaries, where either two oceanic plates meet or oceanic plates are being subducted below continental plates, giving rise to island arcs, ocean trenches, violent volcanoes and high magnitude earthquakes. Catastrophic earthquakes also occur along conservative plate boundaries, such as the San Andreas fault, where two continental plates are moving past each other. Collision plate boundaries occur where two continental plates meet, creating fold mountains, such as the Himalayas. Plate movement occurs as result of a combination of slab pull, ridge push and convection currents within the mantle.

Phil will continue his talk about physical geography later in the year. Meanwhile the convenors are happy to have suggestions as to the direction the Geography group takes in the future.

Next meeting: Thursday 19th March. 2pm in The Witham. Les Knight will talk about "Snowball Earth".