

VIEW TO THE WEST



This view to the west along the River Tay looks towards Newburgh where the river turns northwards. The black lines indicate the orientation of the lava flows which make up the North Fife Hills on the left and the Sidlaw Hills on the right.

After eruption and burial, the earth's crust was folded by tectonic forces to create an arched structure which folded the lavas, and then later faulting created a small rift. The River Tay occupies an area created by two faults, the North Tay Fault (NTF) and the South Tay Fault (STF).

Layered lava flows inclined to the left (S) can be seen just above the left line, close to Clatchard Quarry, Newburgh.

GLOSSARY

ANDESITE: a volcanic lava, dark and fine-grained.

CONGLOMERATE: a rock made up of pebbles or cobbles of older rocks cemented together.

DOLERITE: a coarse-grained igneous rock rich in iron, calcium and magnesium. Prefixed by "Quartz" or "Olivine" depending on the characteristic mineral.

IGNEOUS: rock formed from the cooling of molten magma.

METAMORPHIC: rock modified by intense heat and/or pressure

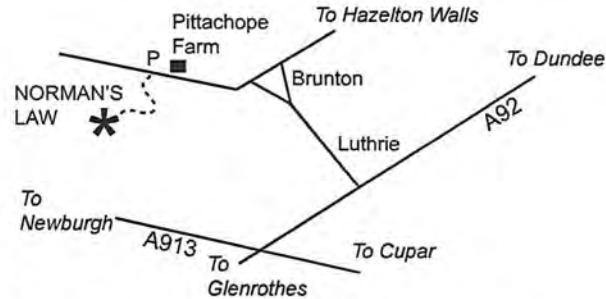
MUDSTONE: A rock formed mostly from mud.

SANDSTONE: A rock formed by the accumulation of sand grains.

SEDIMENTARY: rocks formed from sediments eroded from older rocks.

SILL: a layer of molten magma injected into pre-existing rocks

MAP



Getting There: Start at the "Fife Coastal Path" lay-by [NO 311209], 300m west of Pittachope Farm.

<Go 100 m west and take the farm track past a small quarry. About 250m on, turn right up to the forest entrance. Continue up through the wood for about 700m then climb the stile on the left. Cross the grass field, then over a second stile, and follow the path to the summit.>

geoHeritage Fife

was set up in 2000 to:

- * publicise Fife's geological heritage
- * provide educational resources in geology
- * promote geotourism

If you would like to assist with these aims, consider joining geoHeritage Fife
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Safety: All walks are done at your own risk. Wear sturdy footwear and warm/weatherproof clothing appropriate to the ambient weather conditions.

For obvious reasons, this walk should be done in clear weather in order to see the views at their best.

NORMAN'S LAW, FIFE

- a geological perspective of the views from the summit



Norman's Law from Black Craig

What to see on the walk up to the summit

*As you climb higher, good views of the River Tay, Sidlaw Hills and the Angus Glens appear.



*An old quarry contains an example of lava (called andesite) which makes up Norman's Law and most of the North Fife Hills. This lava was erupted during the Devonian Period, about 400 million years (My) ago.

*Some parts of the lava contain veins and irregularly-shaped white blobs, which represent gas bubbles in the lava which were eventually filled with minerals, often calcite (calcium carbonate) but occasionally agate (silica). This photo shows a white vein of fibrous calcite.



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VIEW TO THE NORTH



View NE

River Tay (1); Sidlaw Hills (2) made of Devonian lavas 400 My old; north of the Highland Boundary Fault are the Angus Glens (3) which are in older (Dalradian, >600 My old) rocks which have been altered by heat and pressure. Dundee (4); the flat coastal strip in the foreground is made of Devonian sedimentary rocks, mostly sandstones and mudstones (5).



View NW

The flat-lying ground just N of the River Tay is made of Devonian sediments (sandstones and mudstones) (1). The hilly ground behind 1 are the Sidlaw Hills made of Devonian lavas (2) similar to the rocks beneath Norman's Law. On the horizon can be seen peaks of older Highland metamorphic rocks including Schiehallion and Beinn a'Ghlo. Consult the orientation table to identify the hills on the horizon.

VIEW TO THE EAST



Drumcarrow Craig (1) is a Carboniferous igneous intrusion (sill), composed of dolerite about 300 My old. The hummocky hills in the foreground are part of the North Fife Hills which are made of Devonian lavas (400 My old).

<Walk to a point east of the cairn and look west towards the West Lomond peak.>



View of the turf rampart (*) which was part of a Hill Fort built in Pictish times as a fortification.

VIEW TO THE SOUTH



View SE

Hopetoun Monument (1) sits on Mount Hill which is made of Devonian lavas and conglomerates derived from them. The hummocky land in the foreground (2) is formed partly by exposed lava flows and partly as the result of glacier activity about 13 000 years ago which dumped sand and gravel as it melted.



View SW

The East Lomond (1) and West Lomond (2) hills are relict volcanic vents of Carboniferous age (297 My) which cut through a slightly older (307 My) igneous intrusion (sill) of dolerite which forms the scarp face on the west slope (3).