

Map no 4

The geological map no 4 with a horizontal and vertical scale of inch to 1000ft has been analysed and interpreted with the help of a geological section drawn along the line RS in the southward to northward.

Topography:

The relief along the section line shows an undulating topography forming ridges and valleys. The highest relief is 1200ft and the lowest relief is 600ft indicating a relative relief of 600 feet. There is a river flowing from east to west in the northern part which receives a left bank tributary. In the southern part of the map there are two streams flowing southwards. There is a saddle between the northern and southern streams. The spacing of the contours are irregular indicating a ridge with a steep slope on one side and a gentle slope on the other forming a mesa.

Sequence of Beds:

As revealed in the geological section there are two series of rock beds. The older series is Silurian with three sedimentary rock beds - shale, grit and shale. The younger series is Carboniferous with three rock beds - conglomerate, limestone and limestone and shale respectively.

Name of Rock Bed	Name of Series	Dip	Thickness	Sign	Remarks
Limestone + Shale	Carboniferous	True Apparent	200 ft		Younger
Limestone		3°	200ft		Unfolded
Conglomerate		3°	300ft		
Shale	Silurian	Right limb	200ft		Folded
Grit		15°	100ft		
Shale		Left limb	700ft		Older

Structure:

The younger Carboniferous Series ~~is~~ separated from the older Silurian series by a plane of unconformity. The Carboniferous series consists of three rock beds which are tilted from south west to north east ~~and~~ with a dip of 3° . The older Silurian series is folded, the right limb of the syncline has a dip of 9° while the left limb of the syncline has a dip of 13° .

Correlation between structure and topography:

As revealed from the section there is a ridge and valley formation. The ridges are asymmetrical with a steep escarpment on the anticlinal side and a gentle dip slope indicating the formation of a cuesta which is in accordance to the ~~structure~~ ^{structure} of the younger Carboniferous series. Due to the erosion by the river both in the northern and southern section of the map the older Silurian series has been exposed, revealing the presence of a syncline, since the syncline shows higher relief than the anticline it appears that there had been an inversion of topography of the older series before the deposition of the younger series.

Geological History:

The older Silurian series was laid down in a marine environment. The oldest bed to be laid down was ~~metamorphic~~ shale followed respectively by grit and then by shale. After compaction the region experienced diastrophic movements as a result of which the area was folded and uplifted. The region was then subjected to the agents of subaerial erosion. After a

considerable a time later when the area had been converted into lowlands, the region was submerged. During this time deposition again took place and the upper series of the Carboniferous series was laid down, the oldest rock was conglomerate followed by limestone and then by limestone and shale. Diastrophic movements caused upliftment and tilting of the younger strata. The region was subjected to the agents of subaerial denudation which has resulted in the present topography.