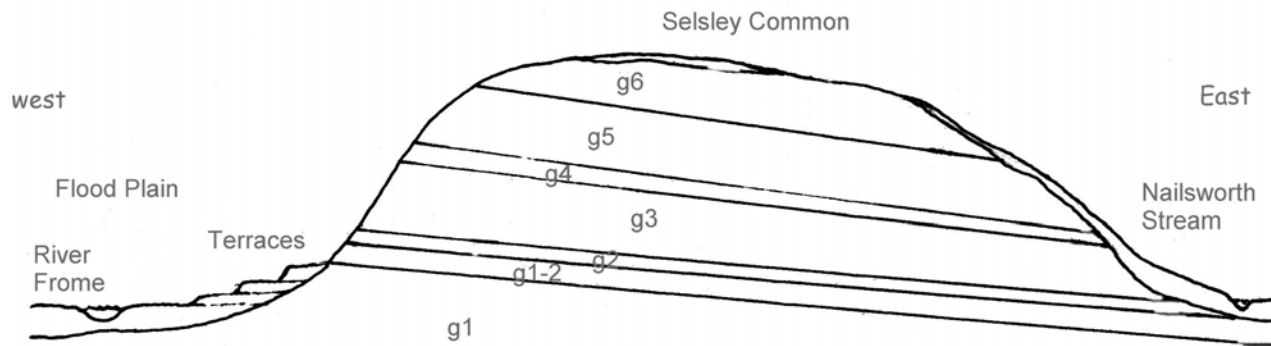


## 24. A Geological Walk around King's Stanley (6 miles, varied terrain, stiles, livestock)

A walk from the River Frome to Selsley Common will take you back 213 million years so allow plenty of time. All of our rocks were formed as sediments under water. A borehole drilled down from Selsley Common would go down through many layers of rock built up over millions of years. During such a huge period of time, weather and other circumstances changed creating changes in the nature and thickness of the sediments. Eventually their own weight compressed the layers of sediment into rock strata. The remains of any living things washed into them were transformed into fossils.

We do not need to drill a hole in the Common to see these strata as the rivers have cut down through them to expose them on their valley sides. The Nailsworth side is concealed owing to landslip.



Simplified section across King's Stanley

The higher ground is made of Jurassic rocks from an age which began 213 million years ago. These are mainly limestones and clays. The low ground near the river has been partly refilled with mud, sand and gravel deposits from the Pleistocene Age. This began 1.8 million years ago and ended with the last Ice Age when huge amounts of water were washing around. As the floods receded they left behind terraces of flood debris, some of which can still be seen. In modern times the Frome's floods have spread alluvium over the water meadows.

The weather has broken down these surface rocks to form soils, which differ in character and land use according to the rocks of their origin.

**The walk** from Ryeford starts on the gentle slope of alluvium and goes up to a terrace at Stanley Mill. Look for the Cotswold Way by Old Brook Cottage and move onto the Lower Lias Clays and Dyrrham Silts. In Stonehouse, Lias Clay was used in the old brickworks. Go around Manor Farm and along the lane past the school.

Cross the road and look for a stile between "Coneygar" and the stream onto Court Farm. Walk upstream, to the second stile on the right by a footbridge. Follow the hedge to a kissing gate. Turn left to another kissing gate, away from the horse pasture, towards the hills and continue uphill across 3 stiles into the wood. You are crossing clay beds, Marlstone and Cotteswold Sands.

Join the Cotswold way and turn left for Selsley Common. You are now on Jurassic Oolitic Limestone. Harder rock gives higher ground and steeper slopes. Water can pass through limestone easily, but cannot continue underground when it meets clay. It will leak out as springs, which mark the rock change and attracted settlements in the past. Some of the beds of limestone have been quarried in Stanley Wood and Penn Wood. The best quarries are on Selsley Common at Leigh's Quarry or those near the topograph. The Freestone was used for building because it was more durable as it was free of fossils. The poorer limestone was used by a lime works on the B4066, almost opposite Penn Lane. Lime was taken to treat the clay of the low ground. Detailed accounts of these quarry faces can be found in geological texts.

Follow the Cotswold way to Selsley Common, past Selsley Church and Stanley Park to a squeeze stile on the left. Walk downhill over Landslip to the kissing gate onto the A419. Cross at the pedestrian-controlled lights and follow the cycle track over the Pleistocene Terraces to Ryeford.

**The Jurassic Age** was the time of the dinosaurs. Fossils can be found in these rocks, but mainly of sea creatures. Dinosaurs from early in the Jurassic period include:

*Scelidosaurus*, which reached a length of 4 metres.

*Stegosaurus*, which reached lengths of 9 metres (30 feet).

*Megalosaurus* was a giant, carnivorous dinosaurs appeared towards the middle of the Jurassic period.

*Archaeopteryx* the first bird appeared.

The forests contained plants such as ferns, cycads, tree ferns and enormous conifers.

In the seas were reptiles such as Ichthyosaurs and Plesiosaurs

Invertebrate life included Ammonites and Belemnite whose fossils can be found locally.

Ammonites are fascinating because as they evolved their subtle changes enable geologists to date the strata in which they are found.

Oolitic Limestone takes its name from the millions of tiny egg-shaped fossils, which it contains.

**The Pleistocene period** was most noted for a series of Ice Ages, the last of which ended about 10,000 years ago. Much life failed to survive this period, but Gloucester Museum shows evidence of creatures alive in this area at that time. Sabre-toothed cats, cave bears, giant elk, woolly rhinoceroses and woolly mammoths roamed Gloucestershire.

### The Geology of King's Stanley

<u>Era</u>	<u>Epoch</u>	<u>Age</u>	<u>Period</u>	<u>Name</u>	<u>Rock type</u>	<u>Code</u>
<u>Caenozoic</u>	RECENT	0				alluvium
	and PLEISTOCENE	1.8m		Terraces of River Frome		T2
The numbers correspond to terraces of River Severn						
<u>Mesozoic</u>	J	144m				
	U					
	M					
	R					
	I		Great Oolite	Fuller's Earth	limestone	g6
	D				clay	
	S					
L		Inferior Oolite	Upper Inferior	Oolite	g5	
E			Middle Inferior	Oolite		
.	.					
L	J		Upper Lias	Cotteswold	Sands	g4
O	U					
W	R				Clay	g3
E	A					
R	S		Middle Lias	Marlstone	Rock Bed	g2
.	.					
S	I			Dyrham	Silts	g1-2
C						
		Lower Lias	Mainly		Clay	g1
		213m				

