

along the strike either as the *stoss* or the lee side of a *roche moutonnée*, and become moulded accordingly. This, so far as I know, is not the case.

The greater perfection of the Dale terraces at high altitudes is strictly paralleled, I think, by the bolder character of the escarpments on the watershed of Northumberland betwixt the Tynes, and is susceptible of the same explanation. The influences of rain and frost, shed broadcast over the face of the country, are at higher levels less interfered with by the concentrated and rapid agents of denudation, and are thus permitted to prick out a configuration purely determined by the relative resistance of the materials acted upon. In the Yorkshire Dales, too, the lower-lying scars have probably been smoothed back by the ice with which they brimmed during the Glacial Period. The valleys necessarily added their own depth to the thickness of the ice-sheet, and taking the case of one 500 feet deep, the erosive force acting on the bottom would be 243,000 lbs. per square yard¹ greater than the pressure on the summit of the valley wall. In the beautiful basin containing Loch Semerwater (near Bainbridge, Wensleydale), I had remarked the obscurity of the terraces on the lower slopes. The glacier force concentrated in the excavation of the loch must have extended some distance up the sides planing the outcrops back, but high on the west side they stand out with great individuality and in form almost rectilinear.

Having thus, as I think, met Mr. Goodchild's arguments, I will in concluding epitomize the opinion for which, as for much else, I was first indebted to the vigorous teachings of the honoured author of the "Physical Geology and Geography of Great Britain." The question is not, How quick will an escarpment recede when once formed? but, Given a series of regularly outcropping sandstones, limestones, and shales in marked beds, what form will their outcrop in time assume? And I think there can be no doubt of the form they *must* assume.

NOTICES OF MEMOIRS.

"UEBER DIE FAUNA DER GASKOHLE DES PILSNER UND RAKONITZER BECKENS." DR. ANTON FRIC. Sitzung der Mathematisch-naturwissenschaftlichen Classe der k. böhm. Gesellschaft der Wissenschaften am 19 März, 1875.

IN April, 1870, Dr. Fritsch gave a notice to the Royal Bohemian Academy of the occurrence of animal remains in the Gas-coal of Nyřan near Pilsen, from which deposits he enumerated ten species of Saurian remains, Fishes, and Arthropoda. Since then the author has collected new materials, and has studied the specimens more in detail. Still more recently he has obtained a rich series of remains from the Gas-coal of Kounová, near Rakonitz, which exhibits a fauna identical with that of Nyřan. Of these localities he now briefly enumerates the series of remains. He considers his researches,

¹ Tyndall, Phil. Mag. 1864, part ii. p. 285.

however, as still incomplete, but he publishes the preliminary results, on account of the great interest which attaches, at the present moment to the question of the probable age of these deposits.

Vegetable remains from the Coal-shales are somewhat rare. But large *Carpolithes* and pyritized stems of *Psaronius* have been obtained, which require a more detailed examination before they can be described.

From the subjoined synopsis it appears that the locality of Nyřan furnishes twenty species, that of Kounová thirty species of animal remains; only five species are common to both localities.

In the Permian of Bohemia only four of these occur (see the table).

In comparing the Coal-measures of Bohemia with those of Saarbruch, Rhenish Prussia, only a few of the species appear to be common to both, namely *Acanthodes*, *Palæoniscus*, and *Gampsonychus*; whilst *Amblypterus* is absent, and the *Archægosaurus* of Lebach, Rhenish Prussia, is represented in Bohemia by a distinct type. Dr. Fritsch, however, does not consider his researches sufficiently complete at present to decide the relative age of these deposits.

TABULAR VIEW OF THE ANIMAL REMAINS HITHERTO DISCOVERED IN THE COAL-SHALES OF NYŘAN AND KOUNOVÁ, BOHEMIA.

	Nyřan.	Kounová.	Permian formation of Bohemia (L. Dyas).	
1. <i>Melosaurus bohemicus</i> , Fr.	x	p		
2. <i>Labyrinthodon Schwarzenbergii</i> , Fr.	x	x		
3. <i>Microbrachis Pelicani</i> , Fr.	x			
4. <i>Scincosaurus crassus</i> , Fr.	x			
5. <i>Stelliosaurus longicostatus</i> , Fr.	x			
6. <i>Branchiosaurus salamandroides</i> , Fr.	x			
7. <i>Dolichosoma longissima</i> , Fr.	x			
8. <i>Sparodus validus</i> , Fr.	x			
9. <i>Urocordylus scalaris</i> , Fr.	x			
10. <i>Microdon modestus</i> , Fr.	x			
11. <i>Ctenocosta lata</i> , Fr.	x			
12. <i>Batrachocephalus crassidens</i> , Fr.	x	x		
13. <i>Ceratodus Barrandei</i> , Fr.		x		
14. <i>Palæoniscus sculptus</i> , Fr.	x		x	x
15. <i>Palæoniscus deletus</i> , Fr.		x		
16. <i>N. G. Kounoviense</i> , Fr.		x		
17. <i>Gyrolepis speciosus</i> , Fr.		x		
18. <i>Phyllolepis fragilis</i> , Fr.	x	x		
19. <i>Orthacanthus bohemicus</i> , Fr.	x	x		
20. <i>Xenacanthus Decheni</i> ?	x	x	x	x
21. <i>Xenacanthus levidens</i> , Fr.		x		
22. <i>Acanthodes pygmaeus</i> , Fr.	x		x	x
23. <i>Acanthodes</i> sp.		x		
24. <i>Julus constans</i> , Fr.	x			
25. <i>Julus costulatus</i>	x			
26. <i>Julus pictus</i>		x		
27. <i>Estheria tenella</i>	x		x	
28. <i>Gampsonychus Krejschii</i>	x			
	20	13	4	3