

TOPOGRAPHY

Ever since the publication, some forty years ago, of Prof. J. P. Lesley's classical work, entitled "Coal and its Topography", the intimate relationship between the surface features of a coal producing country and its underground structure has been recognized, and the study of the one, regarded as capable of throwing important light upon the other. This is more markedly true of a highly disturbed and partly mountainous region like that of Pennsylvania, to which the above named work mainly applies, but even in the case of a comparatively flat and unchanged district, such as is represented by the central coal-fields of New Brunswick, some valuable deductions may be drawn from the recognition of this relation.

The coal-field in question has the general form of a triangle, of which two sides, converging westwardly, are bounded by pre-Carboniferous rocks, highly disturbed and altered, while the third, forming the base of the triangle, and having a length of about one hundred and forty miles, has no natural barrier other than the Gulf of St. Lawrence. As compared with the hill ranges which confine it, the tract is, with few exceptions, low, and, except for river valleys, it presents no marked inequalities of surface, while, as compared with the sea, its elevation would probably rarely exceed six hundred feet and the general average would not be over four hundred. It is thus a great peneplain with a gentle eastward inclination, of which the irregularities are the results of erosion rather than of differential movements. At the same time, a study of the drainage system shows that, as subordinate to the general form of a broad and shallow basin, several minor undulations may be distinguished, separated by low divides, of which some are of ancient and others probably of comparatively recent origin.

Relation of
topography to
structure.
Form and
limits of coal
field.

Minor
undulations.

The contrast of level exhibited by the central coal-field as compared with that of its bounding sides is very noticeable wherever opportunity of surveying one from the other is afforded. Thus, from Spring Hill or other high land north of Fredericton, looking to the south and south-west, the eye appears to wander over a great plain, through which the St. John river winds a tortuous course, until in the distance the picture finds a natural setting in the range of Lower Carboniferous and older hills which bound the coal-field in that direction. So, as viewed from the ridge north of Moncton, known as Indian ridge, so uniform is the surface and relatively so low, that again all minor inequalities become lost, and one looks in vain for anything by which the local monotony of the landscape may be broken. Finally, along the line of the Inter-