

vested in the farmer, or those unable to secure its development.

5. **Ownership.**—As already indicated, the value of a coal property is affected by ownership. If the coal is owned by those able to mine it quickly, the value is greater; if it is to remain untouched for a long period, or to be worked on a small scale, the value is less. The concentration of large holdings into one corporation increases the value of the whole as a unit to a sum far greater than the sum of the values of the individual tracts, because a corporation can establish selling agencies at all important distributing and consuming centres; can spend large sums for advertising; can form close affiliations with manufacturing and transportation companies; can retain able counsel and employ the best managers and representatives that can be found; can own its cars and can make whatever outlay may be necessary to build up a large and permanent business.

6. **Geographic Position.**—Under this heading it is sufficient to direct attention to the fact that those areas of workable coal, situated on existing lines of railway nearest the largest markets, must always be more valuable than territory remote from the large consuming centres. This fact is of especial importance with reference to lands situated upon any of the main trunk lines of the United States, and to those near the great manufacturing centres of the country or most accessible to tide-water trade.

7. **Quantity of Workable Coal.**—It may seem rather paradoxical to assert that the larger the territory controlled by one corporation, the greater the value per acre of that territory because attention has elsewhere been directed to the fact that the value of coal property is greater where the coal can be quickly mined, than when its extraction (and the returns therefrom) must extend over a long period. This latter statement must be confined to properties of relatively small size, and is undoubtedly true of small properties. But the advantages accruing from the consolidation of ownership of large tracts under one management outweigh these considerations; because the large control justifies extensive improvements and developments of a more permanent nature, and enables the owners to expend large sums in providing facilities for the upbuilding of a large trade, which necessitate extensive advertising, the establishment and maintenance of offices at all large distributing and consuming centres, and the employment of able managers for the conduct of the business. For these reasons the value of the coal land within certain limits increases with the acreage controlled under one management.

8. **Mining Conditions.**—The factors affecting the cost of mining are—(1) actual cost of mining operation; (2) possibility of planning large development with improvements of permanent nature; (3) output possible from each operation; (4) the capital required for the plant and its development. These items depend upon many other conditions besides the thickness and purity of the coal; among which may be noted—the depth at which the coal is found; the dip, pitch or slope of the bed; the quantity of water to be pumped, or the facilities for draining it away from the lands; the relative ease or difficulty of maintaining efficient ventilation; the character of the roof and the floor of the coal bed; the hardness of the coal; the presence of gas in the mine; the character of the coal-dust (whether readily explosive or not); and the presence or absence of faults, rolls, and other disturbances affecting the regularity of the coal bed.

It not infrequently happens that, while the quality and thickness of a coal bed may be all that could be desired, other

conditions may exist which render the bed almost, if not absolutely, unworkable under existing competitive conditions of other mines. These objectionable conditions are—extreme depth or dip, troublesome faults or rolls, bad roof, soft floor, a great quantity of gas, a large quantity of water to be pumped, and troublesome dust.

9. **Character of Improvements.**—The value of any coal property is affected by the cost of installing the plant necessary for its efficient development. If this plant be small, simple, quickly erected and inexpensive, other things being equal, the property will have greater value than if a large, complicated and expensive plant be necessary.

The character of the improvements needed depends somewhat upon the uses to which the coal is to be put. If it is to be sold for steaming purposes (as run-of-mine coal) a very simple tippie is required. If it is to be sold in markets demanding screened coal, or if the seam contains objectionable impurities which must be removed, screening and cleaning devices must be installed, which require outside improvements of considerably larger cost than in the former case. Should the coal be especially adapted to coking, and the mines situated in a district where the economic conditions render it necessary, or desirable, to transform the coal into coke, the erection of coke ovens, and possibly also of cleaning or washing appliances may be unavoidable.

10. **Market Reputation of the Coal.**—Under this head it is desired merely to recall the fact that the name of a coal bed may be as valuable to the operator as is a trade-mark, brand, or copyrighted name, to the manufacturer of any well-known article or product. Furthermore, the mere location within the boundaries of some districts is an asset materially enhancing the value of coal lands. This is a matter of great importance in the appraisal of coal properties in the older districts, because it may enable the operator to find a ready market, and to derive large benefit from the established reputation of coal from other mines and from other coal beds in the same district.

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### Some Recent Rock Movements in the Laurentian and Huronian Areas.\*

By S. DILLON MILLS, Toronto, Ont.

As our ordinary life experience and the records of mining developments from the earliest known works down to the present day show the earth's crust to be practically in a position of stability, there has arisen naturally an idea that the period of instability has long past away and that since the glacial period, at all events, no movements other than those of volcanic origin have taken place. At least, this used, to a great extent, to be my own attitude of thought on the subject, and I have no doubt that others would agree with it; but since I commenced the study of the Laurentian and Huronian districts of Ontario some years ago, a contrary conviction has been gradually forcing itself upon me as regards even these apparently most solid areas of the earth's surface. With the idea that, in looking upon glacial action and atmospheric erosion as the only formative agents in the shaping of the picturesque features in the wilder districts of our land (where so many of our citizens go yearly to enjoy the varied scenery and to cast off for a brief period some of our city-made civili-

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