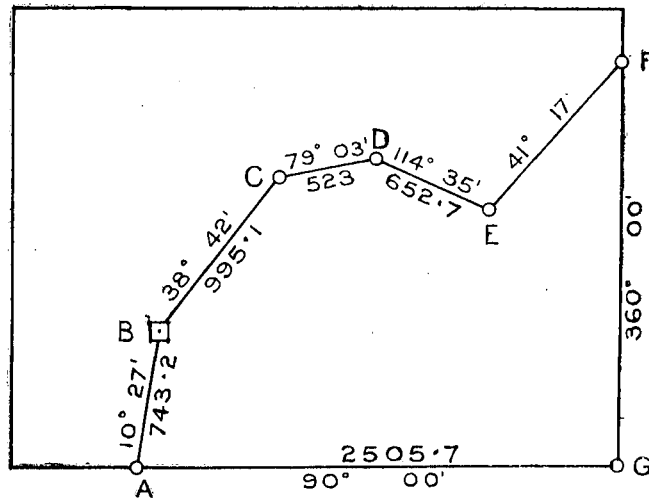


SUBJECT V.—(a.) *Mine-surveying, Levelling, and Making of Plans.*

1. The accompanying diagram represents a mining claim, the position of a vertical shaft (B), and points (C, D, E, and F) in the underground workings. Compute the distances E to F and F to G. (The distances are given in links.)
2. Compute the area within the figure ABCDEFG.
3. A slope dips 1 ft. in 8 ft. for a distance of 504 ft., measured on the slope: what is the difference in elevation between the mouth and face, and what is the horizontal distance between them?
4. Describe the methods of transferring the true bearing from the surface to the underground workings of a mine when there is one shaft, and when there are two shafts, giving diagrams.

(b.) *Geology—Prospecting for Coal, Origin and Mode of Formation of Coal-seams; Faulting; also a General Knowledge of the Geology of Stratified Rocks, and more particularly of New Zealand Coal measures.*

1. Numerous outcrops of apparently workable coal-seams have been found in a mountainous bush clad district in the South Island of New Zealand. State fully what methods of prospecting you would recommend to persons prepared to invest large capital in a proved coalfield.
2. What classes of coal are found in New Zealand? Name the chief coal-bearing districts, and state approximate geological age of the coal-measures in each case.

NOTE.—The candidate may substitute for New Zealand the name of any other country with which he is more familiar.

3. Draw diagrams illustrating each of the following terms: *Anticline, syncline, unconformity*.
4. Give your views regarding the formation of coal.