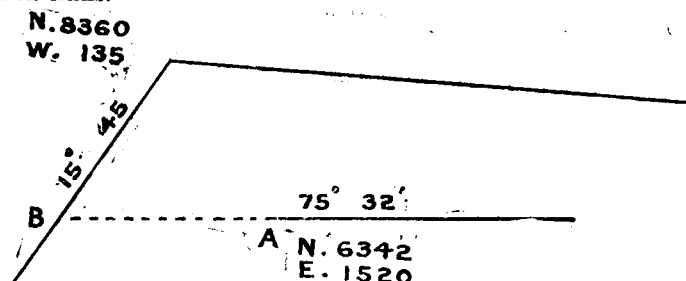


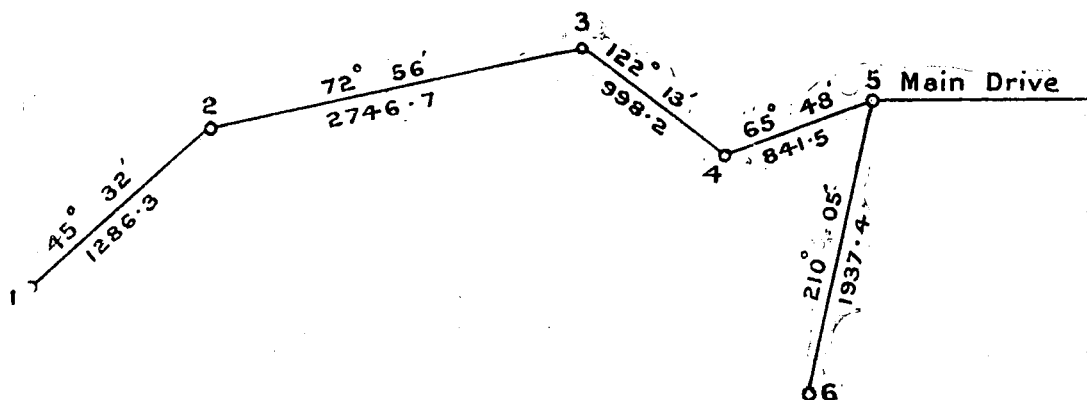
3. A lode apparently terminates against a fault. After an attempt to pick up the lode beyond the fault has failed, the theory is advanced that the fault is older than the lode, and therefore that the lode probably does not continue beyond the fault. State how you would ascertain whether this theory is correct or not, and in particular detail the class of evidence you would look for in order to help you in coming to a decision. Quote any cases of apparently faulted lodes known to you that seem to bear on the point.

SUBJECT L.—*A Knowledge of Underground Surveying, and of making Plans of the Underground Workings, showing the Dip or Inclination and Strike of the Reefs or Lodes.*

1. A drive terminates at A: how far must it be continued to reach the boundary at B? The distances are given in links.



2. Reduce the following traverse of the underground workings of a mine, and give the distances on the meridian and perpendicular from Station 1.



3. Compute the area in acres, &c., enclosed when Stations 1 and 6 are joined.

4. Required the solid content, in feet, inches, and parts, of a round mining prop 20 ft. long, its mean girth (after allowing for bark) being 2 ft. 11 in.

5. Name the different instruments used for angular work in underground surveying.

SUBJECT M.—*A Knowledge of the Different Rocks where Gold, Silver, Tin, Copper, Zinc, Lead, and Antimony are found, and the Formation of Lodes and Leads.*

[Candidates need not answer more than three questions.]

1. State clearly the chief points of difference between a mineral-bearing lode and a bedded deposit, such as coal.

2. Give an outline of some theory accounting for the formation of mineral lodes, and state how far it accounts for the known facts, or, in other words, to what extent you consider it to be proved.

3. State what you know regarding the occurrence of "shoots" or large patches of ore richer than the average in gold-quartz veins. In your answer give references to mines and mining districts with which you are familiar.

4. Gold-miners find by experience that in a given district certain characters of enclosing rock ("country") and of vein-stone indicate the probable presence of profitable ore. Discuss the matter with reference to some mining district of which you have knowledge, and state how far you consider experience gained in one district of value in another district.

QUESTIONS ASKED AT THE 1911 EXAMINATION FOR BATTERY-SUPERINTENDENTS' CERTIFICATES.

SUBJECT A.—*The Different Modes of reducing and pulverizing Ores.*

1. Show by neat sketch general plan and cross-section of a modern quartz-crushing mill, with 30 heads of stamps of 1,100 lb. each, stone-breakers, Challenge ore-feeders, quicksilver-tables, tube mills, &c. Give dimensions in figures on both plan and section; also describe fully all details in regard to foundations and dimensions of timber required in the erection of stamps.

2. As a battery superintendent, give an estimate of the cost of a crushing-battery as described in the foregoing question, and show in detail how you arrive at the amount.

3. Describe fully the dimensions of what is known as Brown's Towers for treating crushed ore with cyanide-of-potassium solutions, the method of keeping the solution and pulp in circulation, and also the method of charging and emptying the towers.

4. If the stamps in a crushing-battery had a drop of 8 in., show arithmetically the maximum number of drops that a stamp could make per minute without the tappet striking the cam.