

II.—MINERALOGY APPLIED TO MINING.

- 9.—What is the difference between Crystallized, Crystalline, and Amorphous bodies? Give examples of these different modes of structure.
- 10.—What do you understand to be meant by the Physical properties of a mineral as opposed to the Chemical?
- 11.—How many systems of crystallization are there? Name them—In what systems do Galena and Calc Spar crystallize? Specify the most common form of Crystal for each mineral.
- 22.—What minerals are generally associated with Gold in the quartz leads of this country, and how would you distinguish between them?
- 13.—What is the difference chemically between Anthracite and Bituminous Coal, and on what does the evaporative power of coal mainly depend?
- 14.—What is Stellarite? Give its ultimate analysis, and state the effect of Oxygen on the value of a Coal into whose composition it enters.
- 15.—State the physical characters and composition of Magnetite, Specular iron ore, Pyrolusite and Galena?
- 16.—Give a brief outline of the process of amalgamation as conducted at the works of the Port Philip and Colonial Gold Mining Company in Australia.
- 17.—Describe the method commonly employed of measuring the current of air in a Mine.
- 18.—Explain the principles of the Safety Lamp. What proportion of air and fire damp forms an explosive mixture, and what are the products of the combustion?
- 19.—Name and explain the principal terms used in Mining.
- 20.—Explain the action of the furnace in ventilation, and state what other means are used for ventilating Mines.
- 21.—Sketch a method of working a Coal seam by slope from the crop, the seam having a considerable dip, and give the sizes and names of the different openings.
- 22.—Describe the usual methods of securing the sides of circular and rectangular shafts.
- 23.—If a fault is met with in working a seam of Coal, what guide have you as to the position of the Coal on the opposite side of the fault?
- 24.—Describe the characteristics of the classes of Coal most suitable for Gas, Steam and household purposes.