MINERAL DETERMINATION AND MINERAL TERMS.

COMPLIED BY T. R. HARDIMAN.

HARDNESS—Talc, 1 ; rock salt, 2 ; talc spar, 3 ; fluor spar, 4 ; apatite, 5 ; feldspar, 6 ; quartz, 7 ; topaz, 8 ; saphire, 9 ; diamond, 10. As an example : a mineral that will scratch apatite and is scratched by feldspar is said to have a hardness between 5 and 6, or the simpler tests of thumb nail, knife, and quartz crystal. The thumb nail will scratch 1, 2, and 3 ; a knife will

by a slender thread beneath one side of a balance, or under a spring scale and its weight is found, after which let the mineral hang in a glass of water and as it thus hangs find its weight. It will be less than before. Then subtract the weight in water from the weight in the air and divide the difference into the weight in air.

Example : a piece of iron weighs in air, 460 grains ; in water 401.16 grains : 460 less 401.16 equals 58.84 difference. 460 divided by 58.84 equals 7.8 which is the specific gravity of iron.
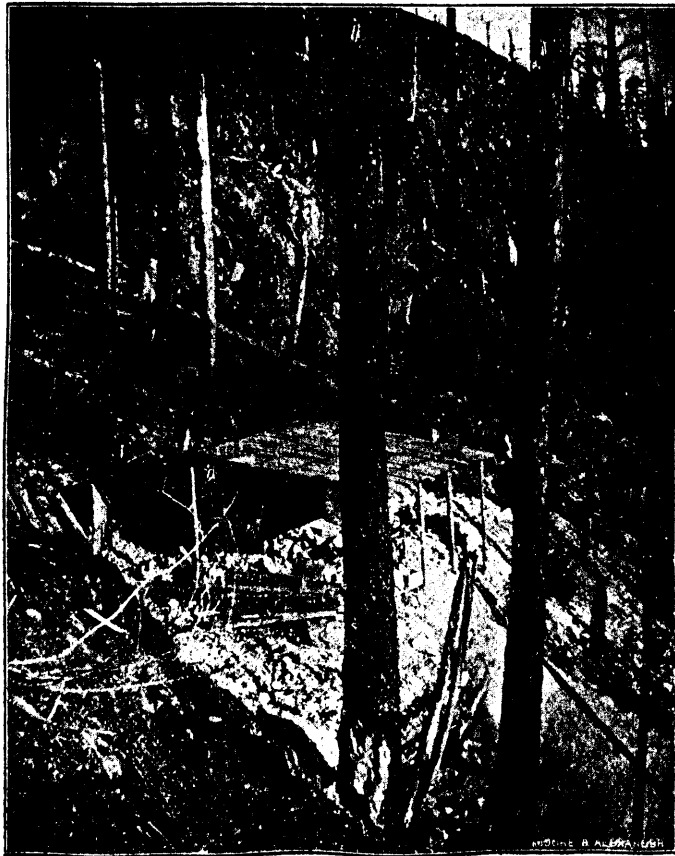
ENTRANCE TO TUNNEL, SEYMOUR NARROWS MINE.

cut 1 to 6. Miners trust generally to their knives to settle the question of hardness. Few minerals scratch quartz crystal.

FRACTURE—When the mineral breaks in curved surfaces, it is conchoydal. A regular fracture in certain planes is termed cleavage.

LUSTER—Is either adamantine, metallic, vitreous, resinous, pearly or silky, each indicated by its name.

FUSIBILITY of minerals ranges from those melting in a candle flame to those which cannot be fused with the blow-pipe and this range is represented by a scale of six divisions.

SPECIFIC GRAVITY, or comparison of weight. Pure water is taken as the standard. The mineral is attached

CRYSTALIZATION—The different forms of crystals are divided into various systems in accordance with the positions of the axes, or direction lines of the crystals. These systems are six in number, viz :

1. The Isometric system, in which the crystal has three equal axes, each at right angles with the planes of the other two : for instance the galenite cube.

2 Tetragonal system, in which the crystal has two equal axes at right angles and an unequal axis at a right angle to the two first.

3. Orthorhombic system, in which there are three unequal axes, each at a right angle to the plane of the other two.

4. Monoclinic system, in which there are three