

refined and cupelled with the blow-pipe in the ordinary way and the resulting button of gold and silver is weighed, parted and weighed again as by the ordinary methods.

The dried concentrates (which are much more uniform in value than the free milling ore) can now be assayed by the blow-pipe, or a small quantity can be sent to an assayer if the prospector is not sufficiently expert with the blow-pipe. If the concentrates are sufficiently rich to be worth saving for further treatment the value can readily be obtained by the blow-pipe.

The above method will give more information and a more accurate assay than a fire assay as usually conducted, because it shows what proportion of the gold can be saved by amalgamation and what value remains in the concentrates, and because it is easy to treat in this way a very much larger sample than is treated in the ordinary assay.

The writer does not propose the above as anything novel—on the contrary, it rather reverts to original principles—and some portions of the process will no doubt be familiar to many members of this Institute; still the writer believes there are very few who realize how correct and how valuable is the knowledge of an ore obtained by this method; and while he does not propose it as a substitute for a mill test of a large quantity where a mill test is feasible, it is a better assay than any other that he knows of and can be carried out at a trifling cost at the mine with apparatus that a man can very easily carry.

The writer has carried out several experiments in comparing this method of assay with both the fire assay and with mill tests of large quantities, and in each case the results have been most satisfactory. These results are embodied in a paper contributed by the author to the proceedings of the American Institute of Mining Engineers.

GUNPOWDER AND NITROGLYCERINE.

By W. HODGSON ELLIS, Toronto.

An explosive is a body which can, by a chemical reaction, suddenly develop a quantity of gas, large compared with the volume of the body before the reaction.