

## NOTE.

*How to Ignite a Hydrogen Jet with No Possibility of Exploding the Generator.*—The following are perhaps fair samples of the directions usually found in text-books and manuals for igniting a jet of recently generated hydrogen gas :

“ After the action has continued for a minute or two apply a lighted match.”<sup>1</sup>

“ When all the air is expelled, not less than ten minutes, light the jet of hydrogen.”<sup>2</sup>

“ When the gas is coming off freely, light the jet.”<sup>3</sup>

As is well known, with any of the above directions, inexperienced students do continue to explode hydrogen generators with annoying frequency, and it is believed that a method of igniting a jet of hydrogen gas with no possible danger of exploding the generator will be welcomed generally by teachers of introductory and qualitative chemistry.

The following method, used by the writer with his classes for a number of years, is absolutely safe and causes no loss of time whatever :

As soon as the action begins collect the escaping gas in a test-tube, and when it is thought to be full of pure gas, remove two or three feet from the generator and ignite the hydrogen in the test-tube ; then immediately *attempt* to light the jet of hydrogen *with the hydrogen flame contained in the test-tube*. If the gas is explosive it will explode in the test-tube and *leave no flame*. If on the other hand a flame remains in the test-tube with which the jet can be ignited, it is certain that the gas in the generator is no longer explosive. Hence, the caution : Never light the hydrogen jet except with the hydrogen flame obtained as just described. The student may try to ignite the jet by this method as often as he wishes until he succeeds, and if the hydrogen is properly generated the jet will be ignited in less than a minute.

UNIVERSITY OF ILLINOIS, AGRICULTURAL  
EXPERIMENT STATION.

C. G. HOPKINS.

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*A New Test for Cocaine.*—There are two well-known tests for determining the freedom of commercial cocaine salts from other

<sup>1</sup> Remsen : Introduction to Chemistry, p. 64.

<sup>2</sup> Newbury : Laboratory Note-Book, eighteenth practice.

<sup>3</sup> Shepard : Elements of Inorganic Chemistry, p. 38.