

NOTE ON THE SINGING HYDROGEN FLAME.

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A common lecture experiment in the presentation of the subject of Hydrogen to chemistry students is the production of the tones made by burning hydrogen from a small tube thrust up into a larger tube. A suitable burner for this purpose is an ordinary brass blowpipe bent back into a straight tube. The author has had such a tube in a drawer of the lecture table for several years and has never failed to get the desired results. In making the experiment recently before a class he found the tube missing. Selecting another blowpipe at random and straightening it out he was unable to produce the singing tones even after several trials.

A series of experiments soon showed that the singing film can be produced within tubes ranging from seven to forty millimeters inner diameter provided the flame is made very small, four to six millimeters high, and does not burn from too large an orifice. Brass tubes with orifices from 0.5 to 1.23 mm. diameter were used. With an orifice larger than 1.0 mm. one must lower the outer tube cautiously over the flame or the violent vibrations produced will extinguish the flame almost the instant the sound is produced.

The singing flame can be produced equally well with outer tubes of glass, silica, porcelain, or brass.

NOTE ON THE COMBUSTION OF A CANDLE IN CHLORINE.

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A common lecture experiment on chlorine is the lowering of a burning candle in a jar of chlorine. The candle continues to burn but with a very smoky flame, much carbon being liberated and the region above the burning candle becoming filled with vapors of hydrogen chloride.

It does not seem to have been observed that if the burning candle is lifted out of the jar it becomes extinguished as it passes through the atmosphere of hydrogen chloride *but is relighted if it is quickly thrust back into the chlorine*. This can be repeated several times. The ready ignition of the vapors of the material arising from the candle wick makes a striking phenomenon.