

Bubbles are often filled with hydrogen to **show** the density of this gas in comparison to that of air. The bubble will rise rapidly, because the gas is approximately one fourteenth as heavy as **air**. Bubbles containing carbon dioxide will descend, for this gas is about one and one half times heavier than air. The three bubbles containing carbon dioxide, as were shown in the drawing, would not remain suspended **within** a beaker **filled** with air, for the gas is heavier than air, **as** stated above. . . .

The  $\text{SO}_2$  indicated in the original diagram is, of course unnecessary. There is the further objection that it would contaminate the products of electrolysis.

Many contestants seemed to have a mistaken notion as to the voltage necessary to decompose water. As a matter of fact water can be decomposed with an e. m. f. of 1.67 volts, at which current tension both **oxidions** and hydroxidions will be discharged. For practical purposes a voltage of **2** to **3** or more is used, for sulfanion (at **1.93** volts) and **hydro-sulfanion** (at **2.63** volts) are then **both** discharged. From a theoretical standpoint **a** voltage above three is entirely **unnecessary**.<sup>2</sup>

One contestant made us a present of the surprising information that the oxygen molecule contains but one atom. If, on second thought, he is still of the same opinion, we refer him to p. 674 of the March number of **THIS JOURNAL** where he will find a detailed proof that such is not the case.

We were somewhat surprised that no one mentioned the **effect** of temperature on the solubility and rate of solution of **NaCl**. Actually, the temperature gradient is so slight in the case of **this** particular salt that there is no practical advantage in heating, but we had expected some one to mention that fact.

Soap bubbles should, of course, be spherical.

Those who submitted the remaining five least-worst papers were as follows: Charles W. Gibson, **Warransburg**, Missouri; Mabel Miller, **Bluffton**, Ohio; Elmer Drumm, **Fisher's Ferry**, Pennsylvania; Paul **Butera**, **Cleveland**, Ohio; Angela Barrios, **El Paso**, Texas.

<sup>2</sup> See Walker's "**Introduction** to Physical Chemistry," Macmillan, 1922, p. 369.

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Flowers and Fruits Possible under Artificial Light. Flowers, fruits, and vegetables raised by artificial light **only** in underground hothouses are quite within the realm of possibility, so long as there is a plentiful supply of cheap electricity. So said Samuel G. **Hibben**, lighting specialist of the **Westinghouse** Lamp Company, in a report to the Illuminating Engineering Society.

Natural sunlight is not necessary for the normal development of plant life, he said. Artificial **light** has been used with success in the experimental growing of plants in laboratories, and it is being used now as a regular commercial proposition in **the** speeding up of the maturing of vegetables grown under glass **and** the blossoming of cut flowers.—*Science Service*