

tion of polygonal forms, analogous to those that we see in cross sections of wood fibre. The accompanying figure gives an idea of the appearance that the tank presents when thus filled with bubbles, but does not and cannot portray the beauty of the projection of it which may be made upon a screen. The pencil of rays passing from the condensing lens of a stereopticon is convergent; and as a consequence many rays fall upon the soap films at such a large incident angle that they are almost entirely reflected, and so are tinged with the rich colors resulting from the interference of rays that fall on thin films.

We thus have before us a proof of the tenuity of a layer which is between the limits of $\frac{1}{17000}$ and $\frac{1}{156000}$ of an inch, the latter limit being reached when the color of the film disappears.

The same illustration also affords us an exemplification of the principle, shown in nature in the structure of the honeycomb, that the pressure on each other of equal circles produces a hexagonal structure. Where, in consequence of the regularity of the current of air, we have produced bubbles nearly uniform in size we notice that the polygons formed are six-sided, and that those of a different number of sides exist where there is a diversity in the size of the air masses.

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Successive Transformations of Photographic Images.—

Janssen has reported some additional results of his investigations into the reversals of images by the prolongation or augmentation of luminous energy. He has succeeded in obtaining the following successive transformations: 1. the ordinary negative image; 2. a first neutral state, the plate becoming uniformly obscure under the action of the developer; 3. a positive image which succeeds the first neutral state; 4. a second neutral state, opposed to the first, the plate becoming uniformly clear by the action of the developer; 5. a second negative image, similar to the ordinary negative image, but differing from it by the intermediate states which separate them and by the enormous difference of luminous intensity which is required to obtain it; 6. a third neutral state, in which the second negative image has disappeared and been replaced by a uniform sombre tint. To obtain the second negative image a luminous intensity is required more than a million times as great as that which gives the ordinary negative image.—*Comptes Rendus.* C.