tion of the "law of interference" of the rays of light: a law we shall now proceed to explain, taking for our first exemplification of it this very phænomenon.

(70.) If a soap-bubble be blown in a clean circular saucer with a very smooth, even rim, well moistened with the soapy liquid,* and care be taken in the blowing that it be single, quite free from any small adhering bubbles, and somewhat more than hemispherical; so that, while it touches and springs from the rim all round, it shall somewhat overhang the saucer: and if in this state it be placed under a clear glass hemisphere or other transparent cover to defend it from gusts of air and prevent its drying too quickly;—the colours, which in the act of blowing wander irregularly over its surface, will be observed to arrange themselves into regular circles surrounding the highest point or vertex of the sphere. If the bubble be a *thick* one (*i.e.*, not blown to near the bursting point), only faint, or perhaps no colours at all will at first appear, but will gradually come on growing more full and vivid, and *that*, not by any par-

* M. Plateau gives the following recipé for such a liquid. 1. Dissolve one part, *by weight*, of *Marseilles soap*, cut into thin slices in forty parts of distilled water, and filter. Call the filtered liquid A. 2. Mix two parts, *by measure*, of pure glycerine with one part of the solution A, in a temperature of 66° Fahr., and after shaking them together long and violently, leave them at rest for some days. A clear liquid will settle, with a turbid one above. The lower is to be sucked out from beneath the upper with a siphon, taking the utmost care not to carry down any of the latter to mix with the clear fluid. A bubble blown with this will last several hours even in the open air. Or, the mixed liquid, after standing twenty-four hours, may be filtered,