

Science Notes

BY WILLIAM G. HAYNES.

MAKING IRIDESCENT SKINS ON ARTIFICIAL PEARLS

Since the remotest antiquity the pearl has been one of the most highly prized gems with which mankind has sought to adorn himself and herself. The value of pearl is determined not merely by size and shape, but by the color of the "skin," as the outer layer is called. A pearl of the first water must possess not only a milky white lustre and satiny sheen, but the subtle and delicate play of prismatic colors known as iridescence.

As is the case today with most valuable natural products, the art of making artificial substitutes is highly developed. Many of the best artificial pearls can with difficulty be distinguished from Orient pearls of the finest water. This is attested by one of the most daring attempts at robbery ever made in public and in daylight. A magnificent string of pearls was placed on exhibition at Christie's, the famous London auction house, previous to being put up for sale. A well-dressed woman came into the rooms several times and professed particular admiration for it, hanging over the case with gloating admiration. Finally, she asked the official guard to let her examine it outside the case, and while handling it managed to substitute an artificial replica, which her previous study had enabled her to have made.

A German scientist, R. E. Liesegang, has occupied himself recently with a minute study of the causes of iridescence in pearls and the best method of reproducing these artificially. We glean some interesting details in a report of his research given in the Zeitschrift für die Keramischen, Glas- und verwandten Industrien.

According to this, in one method of fabricating artificial pearls the glass is either coated with a thin layer of a solution of fish scales, or with mica dust previously treated with the fumes of salts of tin. This gives the color effect of a thin layer of uneven depth. "The iridescence of genuine pearls, however, resembles rather the spectral effect of the Rowland lattice, modified, naturally, by the curving surface. As a matter of fact, the optical peculiarity of pearls, and particularly of the inside of mussel shells, is also conditioned by the ribbed surface. The essential iridescence of pearls, the 'water of the pearl' is caused by these superficial ribs, which are 0.008 millimeter apart. This is proved, for example, by the fact that if impressions be made on plastic substances by iridescent mussel-shells, these substances become iridescent through having their surfaces correspondingly ribbed by the pressure of the shells."

These experiments indicate that the aim of the artificial pearl maker should be to impress on the surface of the glass bead a "trellis" or "lattice" of corresponding fineness. Mr. Liesegang has shown that this may be done by a physico-chemical process which creates a minutely wrinkled film of the kind best suited to cause iridescence in reflected or transmitted light.

If, under given conditions, a drop of an aqueous solution of trisodium-phosphate be placed on a still moist layer of gelatin, and the latter be slowly allowed to dry, there will appear, after a certain interval of time, a vividly iridescent ring surrounding

the drop, and the iridescence will be retained when the film is entirely dry. It was first suspected that this was due to exceedingly minute rhythmic depressions, but closer research has shown that the iridescence is really caused by extremely fine parallel wrinkles in the gelatine surface.

"In order to create this wrinkling on round glass beads the phosphate solution must be made in some manner to diffuse in the gelatine coating of the beads, for if directly touched there will be no wrinkling.

"In pierced beads this is easy to accomplish by means of a wick. If the pearl is not pierced then the iridescence necessarily fails at some point. In spite of extensive laboratory experiments, no recipe has thus far been found to give certainty to the effects of the process, since the gelatine is not a chemically uniform substance. But in these experiments we may see the beginning of methods which will give a more exact resemblance of the artificial to the natural pearl."—Scientific American Supplement.

MORE THAN HALF OF OMAHA'S CITIZENS OWN THEIR HOMES

Omaha, Nebr., July 8.—That Omaha a city of home-owners, far in excess of the general run of cities, is proven by a recent survey made by the Bureau of Publicity. An exhaustive survey made through the water department shows that fifty-six per cent of the homes in Omaha are occupied by those who have title to the property.

This survey includes more than 35,000 homes in greater Omaha, including the South Side and Dundee. These figures coupled with the figures recently developed, which showed that more than fifty per cent of Omaha's citizens have savings accounts, are certain proofs that Omahans are thrifty and economical.

Without doubt the same figures will apply to Nebraskans and Iowans in general. Farm figures bear about the same ratio. Practically half of Nebraska farms are owned by people who live upon them and farm them:

LEGAL NOTICE.

Amos P. Scruggs, Attorney, 220 So. 13th St. Doug. 7150.

PROBATE NOTICE.

In the Matter of the Estate of John Carter, Deceased:
Notice is hereby given: That the creditors of said deceased will meet the executrix of said estate, before me, County Judge of Douglas County, Nebraska, at the County Court Room, in said County, on the 30th day of August, 1916, and on the 30th day of January, 1917, at 9 o'clock a. m., each day, for the purpose of presenting their claims for examination, adjustment and allowance. Six months are allowed for the creditors to present their claims, from the 29th day of July, 1916.

BRYCE CRAWFORD,
County Judge.

J. P. Palmer, Attorney

779 Brandeis Theatre Bldg.

PROBATE NOTICE

In the Matter of the Estate of Hattie Peters, deceased.
Notice is hereby given: That the creditors of said deceased will meet the administrator of said estate, before me, County Judge of Douglas County, Nebraska, at the County Court Room, in said County, on the 13th day of September, 1916, and on the 13th day of February, 1917, at 9 o'clock a. m., each day, for the purpose of presenting their claims for examination, adjustment and allowance. Six months are allowed for the creditors to present their claims, from the 12th day of August, 1916.

BRYCE CRAWFORD,
County Judge.

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