

Science Siftings

By 'Volt'

Liquid Air.

The production of liquid air is thus outlined: Air is compressed to 1200 to 1500 pounds per square inch; passed into receptacles where it is freed from moisture and other impurities; then, into expansion chambers and through long coils of pipe. It becomes intensely cold, reaching finally 312 degrees below zero, at which point it becomes liquid. The liquid is drawn off into insulated vessels, and keeps for days, gradually lessening until it is all evaporated.

A New Mirror.

An invention which will interest women is a mirror arranged with three supporting arms fastened at the rear of the mirror. Two of these arms fasten over the ears, and the third is attached to the chest of the user. With the mirror so fixed the user has the command of both hands, and when with her back to another mirror, is able to see and arrange her back hair, adjust the back of a dress, and accomplish many other necessary 'feats' without the help of a maid.

Number of Papers.

A statistician has learned that the annual aggregation of the circulation of the papers of the world is estimated to be 12,000,000,000 copies. To grasp the idea of this magnitude we may state that it would cover no fewer than 10,450 square miles of surface; that it is printed on 781,250 tons of paper; and, further, that if the number (12,000,000,000) represented, instead of copies, seconds, it would take more than 333 years for them to elapse. In lieu of this arrangement we might press and pile them vertically upward to gradually reach our highest mountains.

Topping all these, and even the highest Alps, the pile would reach the magnificent altitude of 490, or in round numbers 500 miles. Calculating that the average man spends five minutes in the day reading his paper (this is a very low estimate), we find that the people of the world altogether annually occupy time equivalent to 100,000 years reading the papers.

The Art of Daguerre.

Although the improvements in photography are made so rapidly nowadays that even the professional photographer can hardly keep track of them, there are many picture-makers (says the 'Century Magazine'), who believe the world will turn back to the daguerreotype for its beautiful and most artistic portraits.

It is more than sixty years since the scientific world was aroused by the announcement that Daguerre, a Frenchman, had discovered a method of fixing the image made by the camera obscura. It was a crude method then. The first picture, of a tree standing in the sun, required half an hour or more of exposure. That was the same year in which Samuel F. B. Morse went to Europe to exhibit his new electric telegraph. The two inventors met by appointment in Paris and explained their work to each other.

Daguerre's plate was of pure silver. It was thoroughly cleaned and polished. In a dark room it was next coated with a film deposited by the vapour of iodine, and then exposed to the camera. Still protected from the light, it was placed over the fumes of hot mercury, which developed the image, and it was then made permanent with chloride of gold.

This process was soon improved, until on bright days the sitting for a daguerreotype was reduced to ten, sometimes to five, minutes. Even with this short exposure, however, the likenesses were remarkable. It is possible to assume an artificial expression and hold it for a brief second before a modern camera, but to remain motionless for the long time required for a daguerreotype, it was necessary that the features should be in repose in their natural position.

The daguerreotype was a positive, impossible to retouch. It was a soft, flesh-like tone, which even today, in the specimens of the art preserved in collections and among family relics, wins admiration. The daguerreotype gave way to the cheaper ambrotype, which was on glass, and required a dark background to show it off; and this in turn was succeeded by the glass negative and the paper positive print. None of them has ever attained the delicacy or the softness of the daguerreotype, and the Frenchman's method, expensive and slow as it is, may win its way back into the popularity it had more than half a century ago.

The Home

By 'Maureen'

Tomato Sauce.

To 6lb of tomatoes add $\frac{1}{2}$ oz pepper corns, $\frac{1}{2}$ lb sugar, 1oz salt, $\frac{1}{2}$ oz cloves, $\frac{1}{2}$ oz allspice, 2 onions, and 2lb apples. Put in pan and cover with vinegar and boil 4 hours. When cold put through sieve, add a little Cayenne.

Raspberry Vinegar.

Put the required quantity of raspberries into a basin after cutting off stalks. Cover with best white wine vinegar and leave for 8 to 10 days till a crust has formed on top. Remove crust and strain juice through hair sieve. Weigh this, and to every $\frac{1}{2}$ lb loaf sugar allow 1lb juice. Boil sugar and juice for 10 minutes, when cold bottle for use.

The Welfare of the Baby.

The Mayor of Huddersfield has issued cards to mothers, with the following instructions printed on the back:—

When the mother cannot suckle the child it should be fed on new milk and water mixed in certain proportions according to age.

At first one part of milk and two parts water, with a teaspoonful of cream and a little sugar. Then as the child grows older less water to be added. When cream cannot be obtained a small piece of suet may be shredded into the milk.

The amount of food placed in the bottle each time the child is fed should not be more than enough to satisfy it for the time, beginning with two ounces and increasing as the child grows. Should any be left, when the child is satisfied, it should be thrown away, the bottle and teat washed and kept in cold water until again wanted.

What to do.—Always feed the baby at regular intervals, every two hours at first, gradually lengthening the interval to three hours.

Always wash out the baby's mouth twice a day, night and morning.

Always keep a baby very clean.

Always bathe (or sponge all over) the baby once a day in warm water.

Always let the baby sleep in a cradle or cot (a wicker basket makes a good cot), or even an empty packing case, but never let the baby sleep in the same bed with its mother.

Always use fuller's earth to powder the baby, not starch or flour.

Always attend to the baby when it cries. The baby cries for one of three reasons—(1) The baby is hungry; (2) the baby is uncomfortable or something hurts; or (3) the baby is ill.

What not to do.—Never give the baby soothing syrups, fever powders, or anything of that sort.

Never give the baby bread or sops, or gravy, or any other food, except milk, till it is more than seven months old.

Never give the baby skimmed milk, or milk that is not perfectly fresh and good.

Never use a feeding bottle with a long tube. Nobody can keep the inside of the tube clean.

Never use a 'comforter' or dummy teat. It is most injurious.

Never carry the baby 'sitting up' until it is five months old.

Never neglect to send for a doctor if the baby is ill. Babies are soon overcome and easily die.

Maureen

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