ILLUMINATING GAS.

History of Its Invention and Processes Employed in Its Manufacture.

The first artificial production of illuminating gas from coal was made by one Dr. Hales, of England, about the year 1726. This was simply done as a scientific experiment, and was not put to any practical use. In 1786 the Earl Dundonald, of Scotland, obtained burning gas by distilling coals, and for experiment lit up his castle with it. In 1792 Wm. Murdock put in apparatus for the use of gas in his workshops at Redruth and Cornwall, and was the first to reap the full advantage of the discovery. In 1802 the Soho foundry, near Birmingham, Eng., was lighted by gas, and soon after it was introduced into the mills of Manchester. In 1813 London bridge was lit by gas, and by 1819 it was used throughout the main part of that city, and was soon after introduced in all the large towns of England and Scotland. About 1800 a French scientist also discovered the method of making gas, and it was generally introduced into continental circles about the same time that England began to make use of it. The manufacture of gas consists in distilling from coal the hydrogen contained therein and freeing it as far as possible from impurities before it is used for purposes of illumination. Burning gas can also be made from wood and from certain oils, but the labor of its manufacture from these substances renders it very unlikely that they will ever be extensively used for this purpose. Bituminous coal is the substance almost universally used, and the process of distillation is as follows: The coal is put in a closed retort of cast iron or fire-clay over a coal fire, and in about four hours it has given you all its gas, leaving the coke only in the retort. The gas passes into a large pipe, called the hydraulic main, which is kept partly filled with water. Here the water, ammonia, tar and other matters that escape from the coal with the gas are partly condensed. From the hydraulic main the gas is conducted into the condensor, a series of bent iron tubes, which are kept as cold as possible by means of a stream of cold water upon their ouside surface, to further arrest its impurities by the process of condensation. It then goes through a case called the scrubber, which contains pieces of coke, over which water constantly trickles, to eliminate any traces of ammonia that may still cling to it. From this it passes through the lime purifier, an iron box fiitted with shelves, on which is placed slaked lime, to absorb the carbonic acid in the gas. Part of its sulphureted hydrogen is also taken out here, and the remainder is eliminated by a passage through caustic, sawdust and oxide of lead, or iron sulphate. The gas is now ready to be passed into mains and conducted to large reservoirs, whence it is conveyed to houses for use. In large gas manufactories this process goes on continually, the coke being removed from the retorts as fast as made, and fresh coal put in. It is said that the quality of gas largely depends upon the degree of heat applied to the coal in the retorts; if these are insufficiently heated the gas will be imperfectly distilled, while if they are too hot the gas itself is partially decomposed, and becomes deficient in illuminating power. When properly made illuminating gas is pure hydro-carbon, containing 92 per cent. of carbon and 8 per per cent. of hydrogen. The average yield of gas is about 10,000 cubic feet to every ton of coal. If it could be furnished to consumers at the mere cost of manufacture, without the usual premium paid to corporations that control it, it would be the cheapest illuminator known, and would also become extensively and serviceably used as a fuel.—*Toledo Blade.*

An Old Debt.

I worked a month for Dr. Fox, and
When the end had come,
I went to him to get my pay—ten
Dollars was the sum.

He handed a receipt in full, with
Grin of vengeful mirth,
For services professional the morning
Of my birth.

And now I think it would have been—
No wonder I'm forlorn—
Ten dollars in my pocket if I never
Had been born!

—*The Rambler.*

Hints for the Bath.

We "take cold" through the skin, it should be remembered, as we also breathe through it, throwing off superfluous heat—which becomes fever when perspiration is suppressed—and also sending off waste products. Persons who have any tendency to pulmonary diseases should make their skins active. A double handful of common salt thrown into the bathing water after the cleaning process has been performed is a beneficial addition. The saline particles are very penetrating, and no amount of rubbing will remove them from the skin, upon which they exert a most useful, though a gentle, stimulating influence, especially salutary in cases of sluggish liver. Not only does this act locally on the skin, increasing its secretions, but also increases the processes of nutrition in all the tissues of the body. Thumbless mittens of ordinary Turkish toweling are as good as the most costy sponges for the luxury of the daily "rub bath." A large Turkish towel, wrung out in either tepid or cold water, will expedite the bathing process; and by all means provide a goodly sized towel for the dry rub afterward. Turkish towels that come the size of crib sheets are the most useful for this, and the luxury of keeping two linen bath sheets in daily use is known to the initiated few. After either a cold or a warm plunge bath the immediate covering of the whole body in a large wrap of linen or the soft tufted cotton gives the sensation of luxury that some people never know.—*New Orleans Picayune.*

To Improve the Sphere.

A little more "peace on earth, good will to man," as the preacher says, might make the whole business run a bit more smoothly and not cause half so much demuition foolishness this side the bourne.—*Chicago Elite News.*

AFTER-DINNER SPEAKING.

A European Custom That Is Gaining Ground in This Country.

A lump of soft coal crackled on the hearth in the private room of the president of the New York Central railroad the other morning, and the darting flames gave a cheerful look to the spacious apartment. At a broad, flat desk Mr. Chauncey Depew sat, busily engaged in signing his name to annual passes when *The Herald* representative entered. After a few minutes' conversation something was said about dinners. At the mention of this talismanic word a sweet smile played about the corners of his mouth; he laid his pen down, and, throwing himself back in his chair, with his hands folded over the receptacle of so many good dinners, said:

"Dinners! Public dinners are becoming an institution in this country. The day is not distant when the country will recognize the influence of after-dinner speeches. The lecture platform, which at one time attracted to it the greatest men in the nation, has become the stamping-ground of the small talker with the stereopticon. There are few public occasions upon which the orator is given an opportunity. Indeed, oratory no longer enjoys the place it did in public estimation. The newspapers are everything. The press has seized the scepter of the orator and lecturer.

"Just look into the great national assemblies. Take the house of representatives at Washington, for instance. The day of speeches is past. The printing-press is more effective than the voice for putting a speech before the members. But all this is bad for the interchange of ideas. It disposes with all friction. Now, nothing keeps the public so wide awake as the clashing of ideas. Just see how the dinner affects this. Mr. So-and-So is a great believer in a project. It is his hobby—he rises at the table in answer to a toast, and ventilates it. His neighbor entertains a different opinion, and he rises to tear it to shreds, believing he will toss it to the winds, to be irremediably scattered. Now, without the formality of a debate, a great question may have been brought up and discussed. The press seizes upon it and agitates it. Like magic the whole country in a week's time is thinking it over."

"Then you believe matters of great public interest will be discussed at these dinners?" asked *The Herald's* representative.

"I do, indeed. In Michigan, you may have noticed, there was a republican dinner given, to which all the prominent members of the party went, from the farmer to the political chieftains. Men of all kinds had an opportunity to speak. You see, if a man's views are unpopular he is shut down upon, and if his views are forcibly presented, men will listen attentively to him. You will note how many dinners are being given by one association or another at which there is speaking afterward, as a matter of course. In Europe, when any great enterprise is to be started, a public dinner is given, at which it is announced. The custom is being taken up here, and I think before long that associations, clubs, societies, and promoters of enterprises will resort to the banquet as the best means of getting men together to set them thinking."

"What is your personal experience of after-dinner speaking?"

"Well, I don't know how a man who can talk at all can have a better chance than at a dinner to fire into his enemies. What ugly things you can say. My!" At this moment Mr. Depew passed his hand over his mouth. It was an impressive gesture. When the hand fell a smile had been swept away.

"I have," he continued, "several times in my life been able to pour red-hot shot at my foes, and in such a way that they could not reply. Yes, indeed, a good speaker can do effective work after a dinner; he can amuse and do much besides to make the country think on the topics of the day. I am a strong believer in the dinner and after-dinner speaking."—*New York Herald.*

Racing With an Ice Floe.

John Grigsby, the nineteen-year-old son of E. H. Grigsby, at Westport, a town about twenty-five miles above Louisville, Ky., had a terrible experience the other evening. He went skating with a party of friends on the river. Being more venturesome than the others, he went to the outer edge of the shore ice upon which they were skating. He had been there but a few moments when a great cracking was heard, and the portion upon which he was standing broke loose from the main body and floated away. He begged his companions to save him, but it was impossible for a skiff to be pushed into the great grinding cakes, and they were powerless to give him assistance. In the meantime the cake upon which the young man stood floated rapidly down the river. One of his companions went home and informed Mr. Grigsby of his son's perilous position. Mr. Grigsby immediately saddled a horse and started out to save his boy.

He came up even with him about three miles down the river. The cake was only about one hundred yards from the shore. Mr. Grigsby followed it down to within two miles of Louisville, a distance of twenty-three miles, when he gave two fishermen $10 each to go out in a skiff and rescue the boy. After much difficulty and danger they did so, and brought the young man safe to shore. He was almost frozen to death. Young Grigsby's escape was miraculous, as the cake on which he took his terrible ride was not more than ten yards square, and it was surrounded by huge pyramids of crushed ice, which now and then with ponderous force crushed into the floe, grinding pieces out of it.

A Complete Stop.

Conductor—"Here my good fellow! don't you know that if you pull that strap in the middle you will ring both bells?"

Mike—"Faith, an' Oi know that as well as yerself. But it is both ends ov the car Oi want ter stop.—*The Judge.*

HOUSEHOLD HINTS.

If you have no dark place for the fruit cans, wrap each one separately in heavy paper.

The oftener carpets are shaken the longer they wear; dust cuts the fibre of woven goods.

When clothes are scorched remove the stain by placing the garment where the sun can shine on it.

To clean ivory, rub it with bicarbonate of soda, applied by means of a toothbrush dipped in warm water.

To keep oilcloths looking new, wipe off the dust with a dry cloth, then rub with a cloth dampened with kerosene.

New tins should be set over the fire with boiling water in them for several hours before food is put into them.

Jam Sauce—A teacupful of water to half a pot of jam; stir it in and melt it on the fire; then strain it and pour it round your pudding.

Take thick slices of dry bread, dip in cold water, and fry in butter or butter and lard mixed, using a little salt, serving immediately; nice for breakfast.

Solidified Beef Tea—One way to beguile an invalid into taking more beef tea than he is willing to is to add gelatine to it and let it cool in a mold. When it is hard and like jelly serve it with salt and wafers.

Fried Bread—Take a half-pint of sweet milk and add a well beaten egg and a little salt; dip in this slices of bread (if dry let it soak a minute) and fry on a buttered griddle until it is slightly brown on each side. This is a good way to use up dry bread.

Pocket Cakes—"Children's pocket cakes may be made of one pint of flour mixed with the yelk of one egg; sweeten with a cup of soft brown sugar, flavor with any favorite seasoning—mace, nutmeg or cinnamon. Roll out quite thin and cut in fancy shapes. Bake quickly.

For Sudden Hoarseness—Roast a lemon in the oven, turning now and then that all sides may be equally cooked. It should not crack or burst, but be soft all through. Take the lemon while very hot, cut a piece from the top, fill it with as much sugar as it will hold, and eat on going to bed.

Scotch Cakes—These are economical so far as eggs are concerned, and if made with care will melt in the mouths of children. To one pound of flour allow half a pound of butter, and a quarter of a pound of sugar; let the butter stand in a basin near the fire to soften, but not to melt; when soft rub it and the flour together, then knead in the sugar. Roll out in a sheet half an inch thick; cut out cakes about two inches square, bake until they are a light brown. Put them away in a stone jar, and they will in a day or two gather moisture enough to be soft.

Good Coffee—The best coffee is made from mixed Mocha and Java berries, Carefully roasted and ground. Pour a coffeecupful into a pot that will hold three pints of water; add the white and yolk of an egg, or two or three clean egg shells, or a well cleansed and dried bit of fish skin the size of a ninepence. Pour upon it boiling water, and boil ten minutes. Then pour out a little from the spout, in order to remove the grains that may have boiled into it, and pour back into the pot. Let it stand eight or ten minutes where it will keep hot, but not boil; boiling coffee a great while makes it strong, or not so lively or agreeable. If you have no cream, boil a saucepan of milk, and, after pouring it into the pitcher, stir it now and then till the breakfast is ready, that the cream may not separate from the milk.

Putting Things Away.

It seems the hardest matter, for some to acquire the habit of putting things where they belong, when they have done with them, and there are few things more annoying to a careful house keeper, than to be constantly picking up after two or three of these nonconformists to neatness and order.

It is a small matter when one has done with book, paper, work-basket needle, thimble, scissors, etc., to put every article where it belongs, but where several misplace, and only one has all the putting away to do, it amounts to a regular task, and becomes sufficient excuse for sharp words and angry looks.

The same slovenly habit of scattering things about, is extended somewhat to articles of dress, and this, that, or the other garment, or bit of toggery is cast off and left knocking about till wife, or mother, or some one, picks up and puts away the offending article.

Mothers sometimes indulge their boys in this habit of scattering their belongings by making their sisters keep order in their tracks, but this is injustice to brothers and sisters too, and oh! such an injustice to future wives. How many domestic jars grow out of this very habit of slovenliness on the part of husbands!

One of the greatest drawbacks which the wife finds to her enjoyment of the society of her dual half, is this disregard of neatness, we might almost say aversion to it.—*Mrs. Chute in St. Louis Magazine*

Where Prohibition Prevailed.

"This is the first drink of liquor for four years," said a hard looking party to another man of the same distinguishing appearance, in a Madison street saloon to-day.

"Four years?" interrogatively returned the party of the second part. "How did you hold out so long? Swear off on New Year's, or something like that?"

"No," said the other; I have been living where this sort of thing isn't allowed."

"Been to Iowa, maybe?"

"No, sir; been to Joliet."—*Chicago Mail.*

Johnny Reads the Papers.

New York Sunday school teacher—"Johnny, what are the wages of sin?"

Johnny—"Forty thousand dollors, ma'am."

"Why, where do you find that?"

"That's what the boodle Aldermen got."—*Pittsburg Chronicle-Telegraph.*