

NOTES ON FOREIGN INVENTIONS.

Photographic Pictures on Wood.—A new method of taking photographic pictures on wooden blocks, for engraving, has been patented by W. Spence, of London, and is described as follows:—The white of an egg is beat up into froth with one-half its volume of water, and the face of the block carefully moistened with this by a soft brush, then allowed to dry slowly. A solution composed of fine isinglass, 30 grains, chloride of sodium, 2 grains, to 1 ounce of warm water, is now also rubbed over the face of the block and allowed to dry. The block is now heated so as to coagulate the albumen of the egg in the pores of the wood under the isinglass, and another coat of the latter is now applied until the surface has a glazed appearance. But no more isinglass is allowed than fills the pores of the wood; any excess is removed with a knife. A solution of nitrate of silver is now applied to the wood, and the block placed in the camera, when the picture is taken. The picture is now fixed in a warm solution of sulphite of soda, which removes the gelatine, but allows the albumen to remain, and the picture being taken directly on the wood can be engraved with more facility than when it is applied on collodion, which is liable to scale off. The improvement claimed in this process is the application of the albumen in the pores of the wood in such a manner as to form an insoluble base. The nitrate solution is thus prevented from penetrating the pores, while the picture is taken directly on the surface of the wood itself. This is a subject of great interest and importance at the present moment, great efforts being made to dispense with drawing on the blocks.

Lead Paint.—A patent has been issued to J. A. Clarke, of Liverpool, for coating the bottoms of iron ships with carbonate of lead (the white lead of commerce), mixed with naphtha and rosin varnish. The white lead is ground up with the naphtha until it attains a proper consistency, after which the rosin varnish is added. This paint can be used either hot or cold, for painting the bottoms of vessels; it is said to be a good protection against the action of sea water, and prevents the adhesion of marine plants and barnacles.

Purifying Coal-gas.—Dr. J. Leigh, of Manchester, has patented a very peculiar mode of purifying coal-gas. The invention consists in the constant and extensive use of gas-water, commonly called ammonia-water, in the purification of coal-gas, the object of such use being the removal of various salts of ammonia from the gas. It is well known that coal-gas contains, before its purification, a large quantity of ammonia combined with carbonic acid, hydro-sulphuric acid, prussic acid, &c., and for the removal of this ammonia from the gas various substances have been employed, such as sulphate of iron, salts of manganese, sulphurous acid, &c.; but instead of these, the patentee washes the gas in suitable vessels with the gas-water or ammonia-water itself, by which he finds that all the ammonia salts are removed. The apparatus employed may be of any convenient size and shape. The ammonia-water is supplied at the upper end of a deep vessel by an injection pipe, and spread about by a dispersion-plate. At intervals in the interior of the vessel are shelves, each of which is covered with materials to retard the return of ammonia-water, and thus afford time for it to mix with and purify the gas; the said materials being composed of bricks, ashes, or other suitable substances. This invention is similar in nature to that of Dr. Clarke for removing lime from hard water by the use of fresh lime. As the coals yield their own ammonia in producing gas, if this invention is as effective as it is stated to be, it will be of great advantage to all gas companies.

The Drummond Light.—The common "oxy-hydrogen" "calcium" and "Drummond" light is simply the combustion of hydrogen and oxygen gases on a piece of prepared lime. It produces the most brilliant chemical light known. An improvement in the process of producing this light has been made by J. Copcutt, of London; it consists in admitting the gases to the lime under great pressure, by a force pump, and in order that the lime against which the flame of the ignited gases strikes may progressively rotate and present constantly fresh surfaces to the jet, motion is given to the lower disk or cup in which it rests, and an upper disk is employed to press on the upper surface in such a manner that this plate may rotate freely with it. This arrangement and method of using the gases under pressure has, it is said, greatly increased the intensity of this light.

Novel Wheelbarrow.—One of the workmen employed in the gardens of the Tuileries, in Paris, has brought out a new wheelbarrow which has attracted considerable attention. The two legs of the barrow are replaced by two wheels which are somewhat smaller than the usual running one in front, and these are secured immediately under the body or box of the barrow. The handles are raised so as to be on a level with the hands of the workman; and thus, upon a level road, a slight push is all that is necessary for the transport of the heaviest load. The three wheels being almost close together, the act of turning the barrow in the smallest space becomes as easy as possible. This improvement will certainly add greatly to the durability of the barrow, an implement which most persons seem to consider perfect in its present form. In resting with a barrow, after wheeling a heavy load, it is too often allowed to drop heavily upon its legs and these are thus frequently broken. The wheel-legs of the French barrow will prevent breakage from this cause.

Starch.—A patent has recently been obtained by John Hamilton, of Belfast, Ireland, for submitting starch—after it is deposited in the manufacturing process—to the action of a hydraulic press, in suitable boxes, so as to press all the water out of it, instead of evaporating all the moisture by artificial heat in highly-heated rooms, according to the usual practice. A great saving in fuel is thus effected by well-known and very simple means.

MORE ABOUT COAL-OILS AND COAL.

We have recently received a great number of letters on this subject, in addition to those which have already appeared in our columns. There can be no doubt of its being a topic of vast and growing importance, involving great interests, both as it regards the mines which yield the proper kinds of coal and the manufactories where the coal is distilled and purified for obtaining the oil. Some companies appear to have attained to greater perfection than others in purifying the oils; hence we have many inquiries as to the best modes of removing the offensive odor of the product. Such information is greatly desired by many companies; while others, again, find much difficulty from their retorts burning out.

Messrs. Austens, agents of the New York Kerosene Oil Company, of this city, announce the price of their oils at one dollar per gallon, wholesale, and give the following table as the result of a photometrical examination of the light-giving qualities of various burning fluids, by Edwd. N. Kent, Esq., chemist, of this city:—

MATERIALS.	LAMPS.	Intensity of Light.	Quantity of Light from an equal Measure of Oil.	Price of the Oil per Gallon.	Cost of an equal Amount of Light.
Kerosene.....	Kerosene.....	12.643	2.455	\$1.09	\$4.10
Camphene.....	Camphene.....	6.636	1.294	.68	4.85
Whale Oil.....	Solar.....	1.828	.338	1.00	13.07
Lard Oil.....	Solar.....	1.640	.306	1.25	17.00
Sperm Oil.....	Solar.....	2.025	.350	2.25	26.47
Burning Fluid.....	Large Wick.....	5.3	.300	.87	29.00

In a letter from Mr. Calvin Dickey, of Coshocton, Ohio, he says:—"Your paper is the only one through which coal-oil men appear to exchange their views in reference to this immense interest. Our region here is rich in cannel coal, the seams being from four to six feet in thickness, and they make excellent oil. There are some fifteen works in operation and in the course of erection in two townships in this county. All combined, they manufacture from 7,000 to 1,000 gallons of crude oil per day."

Another correspondent from Charleston, Kanawha county, Va., states that there are several companies in that place largely engaged in this manufacture, and they have a large capital invested in the business. "The Union Works, at Stockton," he says, "are making crude oil from 94 retorts; the Kanawha Coal-oil Company, at Charleston, have 40 retorts in operation, and will have 60 more by December 1st. This company refine their oil, and send large quantities to Boston and other markets. Several other companies have from 30 to 40 retorts each in full blast, but do not yet refine the crude article; they are, however, making preparations to do so."

The above-named correspondent also states that L. A. R. (whose letter on cannel coal appeared on page 151 of the present volume of the SCIENTIFIC AMERICAN) is not posted-up in the cannel coal deposits of our country. It was asserted that the only pure cannel coal known on

this continent was that of the Prince Albert mine in New Brunswick, and the Forest Hill mine in Fayette county, Va. In the Kanawha Valley there are several mines of cannel coal as good as that of Forest Hill, though not "as oily as a lump of fat," nor "as elastic as india-rubber." Our correspondent also asserts that there is more cannel coal in this Virginian valley than in all the rest of the United States. Some of the deposits vary from 30 inches to 6 feet in thickness, and most of them compare very favorably with the Boghead and Prince Albert cannel coals.

On page 222, of this volume, we published the letter of a correspondent who stated that none of the establishments engaged in the coal-oil manufacture had "paid a dividend on the money invested." To this statement, Mr. Geo. M. Mowbray, of Greenpoint, L. I., answers: "One of your correspondents dating from Cincinnati, in an article on 'Coal-oil Manufacture,' asserts that none of the companies formed for the purpose of manufacturing this oil have hitherto paid a dividend. This is an error; the Columbia Company having paid a dividend of 10 per cent, besides having a surplus for contingencies. My authority for this assertion is Mr. Furber, one of the directors of the company."

We have thus had contradictory statements from different correspondents on this subject, but the truth comes out in the accumulated information we present. The writer of this article is well acquainted with cannel coal, and has examined as good specimens from Virginia, Kentucky and Ohio as the famous Boghead. On Coal river, Va., there is an illimitable supply of cannel coal for making oil and gas; and it is to be regretted that the carriage of it costs so much to this city, which is supplied with English coal for making gas. We would especially direct the attention of our American cannel coal companies to this subject, because it would be a vast benefit to our citizens if this coal were obtained at cheaper rates, so that the price of gas could be so reduced as to enable every house in this and other large cities to be supplied with it. At present it is too expensive for the working-classes to use, and the excuse offered by the companies is the high price of coal.

In a letter from E. E. Calcott, Esq., of the Providence (R. I.) Gas Company, he gives us the cost of the coal which they use as follows:—\$3.77 per ton in London; freight to Providence, \$4.18; exchange, 45 cents; duty, 99 cents: total at the wharf, \$9.39. This is a very high price for a ton of coal. We have always been given to understand that the price of Boghead coal in London was \$11.40 per ton; and that it could be imported to New York, with the exception of the tariff duty, as cheaply as to London. Surely some of our western coal companies can institute measures to send their coal to the eastern seaboard, and sell it for \$6 or \$7 per ton.

There is another matter connected with this subject which our readers should understand more fully, viz.: the quality of gas obtained from different kinds of coal. Most persons suppose that all coal-gas is of the same quality, and that a cubic foot of the one is just as good as a like quantity of any other. This is a mistake. There is a great difference in the illuminating power of gas obtained from different kinds of coal. Cannel coal-gas is nearly double the power of that obtained from the Newcastle coal.

EMPLOYMENT OF CAMELS IN THE UNITED STATES

SERVICE.—A letter has recently been received by the Secretary of War from Superintendent Beale, dated Fort Tejon, California, in which the writer speaks in the strongest terms of the great advantage to be derived from the employment of camels in the public service in the West. He states that he lately tried, effectually, the comparative value of mules and camels as pack animals, and the experiment proved beyond all question the great superiority of the camel, both as regards rate of speed and amount of burden. From what he had read, he dreaded the difficulties which seemed to present themselves in breeding them; but his experience had satisfied him that they were as easily bred as cows and calves. He prefers them, for all such purposes as those in which he has employed them, to three times the same number of horses and mules.

SOME of the river steamboats employed upon the Rhone are, according to a drawing exhibited in Paris, 250 feet long and 16 feet wide, the length being 15 2-3 times the width. The engines are 500 horse-power.