ing rules as from a wanton disregard of their observance. To run a great, unwieldy hulk at high speed in foggy or even hazy weather on a commercial highway, where scores of sail continually ply, seems to be a greater offense than a fine will atone for. It ought to be criminal. The men who are responsible for this flagrant violation of the law boldly affirm that there is no more danger in running at full than at half speed in thick weather; and the course of reasoning by which this conclusion is reached, if not logical, is at least unique. If we run at half speed, they say, we may only come up in time to run head on to a vessel crossing our track, whereas, had we been going at full speed, we would have safely crossed her bows and been on our way with plenty of sea room.

A fair answer to this would seem to be that the slower a steamer is going the more chance there is of avoiding collision when it is imminent. The law says that a steamer sailing in thick weather shall go at half speed and keep her whistle going; and a careful navigator, more concerned in the safety of his own ship and the craft that may be in his path than in making fast time, will stop his engines when he hears the whistle of a steamer or the horn of a sailing vessel, while he locates the direction of the sound, and then keep his engines turning very slowly—only fast enough to insure steerage way—until the danger is over. No system of signal lights could be of much service in thick weather at sea, because they are rarely seen until it is too late for effective warning; and as, when strong winds prevail, a vessel with the wind behind her cannot hear sounds from a-lee, it is the duty of those sailing in the teeth of the wind, as the master of the Oregon was, to go very slow and take more than the usual care.

Not long ago a trial was made of a code of sound signals to be used in fogs at sea; these being made up of short and long sounds blown by steam or horn, by which the course of a ship hid by the fog could be sent to one that was likely to meet her. A short sound meant, "I am out of the west by north," or, in other words, "I am bound east by south." If the wind never blew when it was thick, this would have been a great help at sea; but the fact that, save when the wind is dead ahead, sounds do not come true from the point whence they start, but are heard first over one bow and then over the other, would do much to make this plan of no avail, and so, though it found much favor ashore, did not gain any friends at sea.

THE CLAPP-GRIFFITHS STEEL PROCESS.

In our article on the Clapp-Griffiths steel process, March 27, we inadvertently transposed the reactions occurring in the Bessemer converter. It is the silicon of the pig iron which first suffers combustion, and forms with the oxides of iron and manganese a siliceous slag which floats upon the molten metal. The carbon then oxidizes, and the disappearance of this flame indicates the end of the reaction.

PHOTOGRAPHIC NOTES.

Directions for Making a Gelatino-Bromide Emulsion by the Ammonia Method.—Mr. W. K. Burton in the *Photographic News* says: I have always rather avoided giving ammonia formulæ for emulsion making because, although I have been able to get the highest degree of sensitiveness by this method, I have not in my own practice been able to find any method whereby I could be sure of producing an emulsion free from green fog. The introduction of the alkaline carbonates in place of ammonia in the developer has, however, made the appearance of green fog a matter of comparatively little importance. Even if the carbonates be not generally used, the photographer may make use of a carbonate developer—such as Beach's—when he finds that he has had the misfortune to get a batch of emulsions showing green fog.

The following is a formula which has given excellent results:

A.—Nitrate of silver	200 grains.
Water	2 ounces.
B.—Bromide of potassium	160 grains.
Iodide of potassium	10 "
Nelson's No. 1 gelatine	40 "
Water	4 ounces.
C.—Dry gelatine	300 grains.

Into A is poured very slowly the strongest ammonia, or the stock solution of one part strong ammonia, one part water. Darkening of the solution will immediately take place. The addition of the ammonia is continued, with constant stirring, till the solution just becomes clear again, which will probably occur when about half an ounce of strong ammonia has been added. The clear solution now obtained is called ammonia nitrate of silver. It has to be made up with water to a quantity of four ounces.

When the gelatine in B is soft, the whole is heated till the solution reaches a temperature of about 160° Fah. It is then allowed to cool to 120° (a chemical thermometer must be used in this process), when emulsification is performed by pouring A *cold* into B, in three or four operations, with stirring after each.

The jar containing the solution is now placed on one side to cool, the gelatine, C (still dry), being torn up with the fingers into pieces about the size of a pea, which are dropped into a jar of clean water, where they remain for twenty-four hours, the water being changed several times. At the end of twenty-four hours the pieces of emulsion—which will have swelled very considerably—are placed in a small jar, water being poured over them to make the quantity up to eight ounces. Heat is applied to melt the whole. Half an ounce of alcohol (not methylated spirit) is added, and the emulsion is ready to spread on glass.

In coating with this emulsion it is advisable to have it as cool as possible—not over 100° Fah. If it will not run on the plate as cold as this, these must be very slightly warmed before the coating operation commences. By the process just described, emulsions giving plates of a sensitiveness 25 on Warnerke's sensitometer, and at the same time giving clear shadows and ample density, have been produced many times in succession. This sensitiveness is very high, but it appears that such plates do not keep so well as those of more moderate rapidity. They are liable to show a slight fog after having been stored for a few months.

I can recommend Beach's developer for plates prepared in the way just described.

Note.—The developer referred to is prepared as follows:

No. 1. PYRO SOLUTION.

Warm distilled or melted ice water	4 oz.
Chem. pure sulphite soda (437 grs. to oz.)	4 "

When cooled to a temperature of 70° Fah., add:

Sulphurous acid	3½ oz.
Resublimed pyrogallol (437 grs.)	1 "

The pyro is best dissolved by pouring the sulphite solution into the pyro bottle and then out into a graduate, repeating the pouring until completely dissolved.

If pure, it will dissolve very rapidly. When completed, the solution should measure nine and a half fluid ounces.

No. 2. POTASH SOLUTION

is prepared with two separate solutions as follows, each ounce of the salt containing 437 grains to the ounce:

a	Water	4 oz.
	Chem. pure carbonate of potash	3 oz.
b	Warm water	3 oz.
	Chem. pure sulphite soda	2 oz.

a and *b* are now combined, forming one concentrated solution.

Each ounce of No. 1 contains approximately 48 grains of pyro. Each ounce of No. 2 contains approximately 154 grains of potash.

It will be seen that the potash solution is quite concentrated, so that a small quantity is only necessary for use in development.

A normal developer would be made up as follows:

Water	2 oz.
Pyro solution (No. 1)	1 drachm.
Potash solution (No. 2)	30 minims.

If more density is required, from one to two drachms more of No. 1 may be added. If the development proceeds too slowly, from one to one and a half drachms of the potash solution may be added in small quantities at a time, until the right speed of development is attained. By thus varying the proportions, the developer can be made to suit either an over or an under exposed plate.

The negatives possess a brilliant, clear, bluish gray color.

Government by Snap of the Finger.

A few days ago a cigarmaker walked into the office of Mr. William Strange, of Paterson, N. J., who employs 1,200 persons in his large silk mills, and demanded that he sign an order which would revolutionize the dyeing shop. Mr. Strange declined to do so, whereupon the cigarmaker at once went out, and as he passed the dyeing shop snapped his fingers, at which signal all the operatives in the shop dropped their work and left the premises. They subsequently admitted that they had no grievance, and that they were indignant at being ordered to stop work, but they claimed that under the laws of their labor organization they had no option.

Mr. Strange, who seems to have acted coolly and fairly, told his people that he could not do business on that plan. If it had come to this, that a stranger and an outsider could walk along the corridors of his mill and stop all the work he had in hand by a snap of his finger, he would shut up his manufactory and employ his capital in other ways. And he should do this, not in passion or out of spite, but because he could not afford to do business under such conditions. He would not feel justified in assuming the responsibility of contracts, in making investments in real estate and machinery and the like, if his whole business could be paralyzed at any moment at the whim of a dictator.

The love of power is an instinct with all, and it is not surprising that the labor element, now that it sees the strength to be derived from association, should like to use that strength more or less wantonly. But ignorance and passion will ruin any cause. Labor can only be really strong by being right. And the labor cause will break down unless it studies the principles of human society and obeys them. In the case just cited, if the facts are as reported, these fundamental principles of liberty and order were ignored; and the result can only be confusion and ruin. Whatever the remedy for labor troubles may be, certainly it is not the snap of the finger.—*N. Y. Commercial Advertiser.*

Hypnone.

In a recent number of the *Bulletin General de Therapeutique*, Dr. Dujardin-Beaumetz and Dr. G. Bardet give an account of the physiological action and therapeutic uses of a substance to which they propose to apply the term "hypnone." It has many names, the best known being acetophenon; but although they may be useful as indicating its chemical composition, they are ill adapted for the requirements of the practical physician. It is made by distilling together a mixture of benzoate and acetate of lime. At ordinary temperatures it is a clear, colorless liquid; but on exposure to even a moderate degree of cold, it is converted into a mass of beautiful crystals.

It is simply a laboratory produce, and as yet has not been manufactured for commercial purposes. Its price is somewhat high; but as the dose is small, this is a matter of little importance. It has a most persistent characteristic odor, so that few patients would care to take it unless inclosed in capsules. Its physiological action is very marked, and there is reason to suppose that we are in possession of a hypnotic only second to urethan. In cases of simple insomnia, unattended with pain, its action is marvelously prompt, and there are absolutely no after-symptoms, such as nausea, headache, or constipation, which so frequently follow the administration of opium or morphia. It has as yet been but little used in this country, but the reports so far are said to be most favorable. We owe a debt of gratitude, says the *Lancet*, to Dr. Dujardin-Beaumetz for giving us this new remedy.

THE *Age of Steel* has been informed that the Brush Electric Company, of Cleveland, are building the largest dynamo in the world. It will be 12 or 13 feet long, 5½ feet wide, and weigh ten tons. It will give a current of 122,500 amperes; number of watts, 245,000. In other words, it will be four times the size and capacity of the "Jumbo" machine exhibited by Edison at the Electrical Exposition at Philadelphia. The latter was adequate to the task of running 5,000 sixteen candle power incandescent lights. This monster machine of the Brush people will be shipped to Lockport, N. Y., and used for the smelting of "aluminum," it is said. Five hundred horse power will be required to drive it, which will be furnished by water, with the aid of turbine wheels.