Correspondence.

Ivy Poisoning.

To the Editor of the Scientific American:

I have read an article in your paper on ivy poison, and as I have had considerable experience with ivy poison, I wish to give a sure and simple remedy which I think I was the first to discover. About 25 years ago I was badly poisoned by climbing trees to get wild grapes. I was literally poisoned all over. My limbs were swollen and broken out with little blisters. My parents were away from home at the time. I did not know what to do. I had heard that salt water was good. I could find no salt in the house, but found some baking soda, so I thought I would try that. I got a large wash basin, put in about 3 quarts of water and about 4 ounces of soda. I then bathed myself good all over. It knocked the ivy poison higher than a kite. I was poisoned several times after that, but always cured myself with the same remedy. Also I know of many cases where they used it on my recommendation, and they all were speedily cured. It is simple and easy to try it. There may be other parties who have used this remedy, but if so, I do not know of it.

S. HEBERLING.

Des Moines, Iowa.

Uses of Saccharine.

Sugar being a prohibited article to me, I naturally became interested in Fahlberg's "saccharine," and obtaining a supply as soon as possible, began experimenting with it. Using it alone to sweeten lemon juice or stewed cranberries, I found it very difficult to mix and tried various dodges to remedy it, all of which had some drawback or other until I thought of dissolving it in glycerine.

I found that for general purposes the formula of glycerine one pound, saccharine one drachm, heated to solution, was the best. Two teaspoonfuls of above to the juice of one lemon made up to eight fluid ounces makes a lemonade sweet enough for almost any one, and three teaspoonfuls to four ounces of stewed cranberries makes a dish "fit for a king."

I gave a sample of above to a gentleman to whom sugar was tabooed, and who was then using saccharine alone, and asked him to try it with cranberries and report. When next seen he said very enthusiastically, "That's splendid. I've bought a barrel of cranberries, and would not go back to sugar if I could."

The advantages of the mixture over pure saccharine are: 1. That the glycerine gives it a body, and the mixture very closely resembles in taste and appearance the best white honey. That it dissolves readily in water, milk, tea and coffee, wines and liquors, and that it can be very readily measured. To those forbidden the use of sugar, I would advise the use of the above.

A. G.

Appleton, Wis., January 25, 1888.

A New Ice-Breaking Vessel.

A remarkable boat is soon to be turned out at the docks of the Detroit Dry Dock Company. It is built for the Mackinac Transportation Company, and is to be used as a car ferry boat. The boat is 235 feet long, 52 feet broad, and 25 feet deep, and will be able to carry ten freight cars or eight passenger cars. It is, however, as an ice-crushing machine that the new boat is expected to be remarkable, and her construction is such that it will be impossible for soft ice to cling to her sides. The propelling power is furnished by a compound engine of 2,000 horse power, with 28½ inch and 53 inch cylinders, having a 48 inch stroke, and driving a 12 foot wheel. In addition to this there is another and smaller engine of about half the power, the chief object of which is to serve as an ice breaker.

It has been found that the easiest and quickest way to get ice out of a slip is to back the boat into the ice, hold her there with lines, and then by working the engine forward throw a column of water under the ice, which never fails to break it up and drive it out of the slip. This fact suggested the peculiar feature of the new boat—her two wheels. No. 85, as the new boat is known on the company's books, will go in the ice bows on, and while held there by her larger propeller, the smaller wheel, itself ten feet in diameter, will clear the way into the ice. The top of the buckets of this wheel will be 6 feet under the surface of the water, so that there will be no danger of its being broken by the ice. There are three double-ended boilers, 18 feet long by 11 feet 6 inches in diameter, equivalent to six ordinary boilers. They are placed side by side, and have two smokestacks, one forward of the other, ocean style. Her bow is so constructed as to stand the severest shocks, and her hull is sheathed with steel plates ¼ inch in thickness. Naturally requiring great steering power, a special steam steering engine has been designed for her by the Manton Steam Windlass Works of Providence, Rhode Island. To prevent her rolling in heavy seas, two tanks, holding about 25 tons of water each, have been placed athwartship. An electric light of 2,000 candle light power will be fastened to her pilot house.

Gratzel's Magnesium Lamp.

The following results were obtained with a magnesium lamp of recent construction by H. A. Gratzel, of Hanover.

Since it has been found practicable to produce magnesium electrolytically on the large scale, and the price has consequently fallen within a few years to about one-fifth of its former amount, the attempt has been made to utilize the property of this metal (hitherto little regarded) of burning with great luster, in the construction of sources of intense light. There can be no doubt that with the increasing application of the magnesium light the technical improvement of the lamps will proceed hand in hand. The burner here measured was made for experimental purposes only, but it yields a light burning with sufficient steadiness.

There can be burnt in this lamp as many as eight magnesium ribbons of 2·5 mm. in width and 0·13 mm. in thickness. It is, however, easy to burn any smaller number at pleasure. Even on burning a single ribbon there was no extinction, as it often happened with the earlier lamps. The strength of the light fluctuates more than in a well regulated arc lamp, but the fluctuations are more gradual, so that they are perceptible only on the photometer screen, but not with the naked eye. They certainly occasion disturbance, and I have sought to eliminate their influence by increasing the number of observations. The greater the number of the ribbons burning, the smaller is the relative amount of these variations.

The white fume, in which state a part of the oxide formed during combustion escapes, found its exit through the ventilation shaft.

The escape pipe was firmly connected with a reflector attached to the lamp, so that the lamp could not be used without it. But as I wished to ascertain the strength of light which the lamp yields without reflector, it was pasted over with dead black paper. In this manner the strength of light for different numbers of ribbons could be conveniently determined. Lastly, as the concave mirror will be used with the lamp in many cases, the paper was removed, and after the polish of the reflector was restored, measurements were made with the reflector. These results of the latter, of course, hold good only for the lamp in question. The aperture of the parabolic reflector had the diameter of 39 centimeters. This is not the place to enter upon the details of the construction of the burner.

For determining the consumption of magnesium, the rolls upon which the supply of ribbon was coiled were weighed before and after the experiment, and the time during which the lamp was burning was accurately noted.

The strength of light was measured in the horizontal direction. A few determinations made at 33° (greater angles could not be used on account of the reflector) showed a decrease of the strength of the light of about 25 per cent.

Number of ribbons	Strength of light in normal candles.		Without reflector.		Hourly consumption of ribbon per 100 candles.
	Without reflector.	With reflector.	Candles per ribbon.	Consumption of magnesium per hour-ribbon	
				Grammes.	Grammes.
1	150	3,200	150	16·7	11·14
2	237	5,880	118·7	16·7	14·10
4	450	8,000	112·5	16·7	14·80
6	700	11,300	117	16·7	14·15
8	950	17,000	119	16·7	14·03

The strength of light obtained per ribbon is therefore greatest when only one ribbon is burning. It sinks as soon as a second is introduced, but remains then approximately constant whether two or eight ribbons are in use. The somewhat abnormal result obtained with four ribbons is probably due to an experimental error.

The price of magnesium ribbon is at present 45s. per kilo. If the lamp burns with eight ribbons, it consumes hourly 134 grammes magnesium. If we disregard the first price of the lamp, it costs 6s. per hour burning, and 100 normal candles measured without reflector cost hourly $\frac{6s}{100}$ of 1s.

The lamp examined pushes forward hourly 32 meters of each ribbon, This speed appears to be too great, and can be decidedly reduced without reducing the strength of light of the lamp. Some of more recent construction push forward only 24 meters hourly. It appears also that the price of magnesium will shortly be reduced to 30s. per kilo. Hence an eight ribbon lamp would consume hourly 100 grammes of magnesium, at the price of 3s., and the hourly cost of 100 normal candles would be only $\frac{3s}{100}$s.

But even this price is still much too high to admit of the magnesium light competing with the electric light or with gas. The natural sphere of the magnesium light is different. It will be used wherever an intense light is demanded for a short time and where gas piping and electric installations are not at hand. For such purposes magnesium is the cheapest source of light. The magnesium light is readily portable, and can be kindled at any moment by means of a match, and as quickly again extinguished.

It is thus suited for military purposes, for luminous effects in theaters, in photography, in nightly building operations of short duration, in ships, etc.

Lamps have also been recently constructed arranged for burning several hours (during which the mechanism does not need to be wound up again), and the greatest intensity of light is thrown, not horizontally, but downward. Such burners are already in use for lighting up large halls, etc.

There is no need in electro-technics to fear the competition of the magnesium light, but one should rather seek to improve the preparation of this metal.—*Centralblatt fur Elektrotechnik; Electrical Review.*

An Iowa Railroad Law.

A remarkable judicial ruling comes from Iowa.* A woman brought an action for damages for injuries received while alighting from a moving train. It appeared that when the train arrived at the station where she intended to get off, it did not stop long enough to enable her to step from the platform of the car. Her two young children who were traveling with her had preceded her and alighted safely before the train started, and it was the desire not to lose them which impelled her to jump after the train had commenced to move. There is a statute in force in Iowa which provides as follows: "If any person not employed thereon, or not an officer of the law in the discharge of his duty, without the consent of the person having the same in charge, shall get upon or off any locomotive engine or car of any railroad company while said engine or car is in motion, . . . he shall be guilty of a misdemeanor, and be punished by fine not exceeding $100, or be imprisoned not exceeding thirty days."

The Supreme Court decides that before the woman can recover she must prove one at least of the three exceptions in the statute, viz.: Either that she was a person employed on the train or that she was an officer of the law, or that she got off the train while in motion with the consent of the conductor or some other officer of the company in charge of the train. If she cannot show any of these things she cannot recover, for the reason that otherwise her act of jumping from the train while in motion was unlawful, and if unlawful it was negligent.

This is a case of strict construction—of sticking in the bark of a statute with a vengeance. Under this ruling, if a passenger on a train in Iowa should see that a drawbridge ahead of the train was open or that another train was approaching on the same track, and rushing to the door should jump off and save his life before the train went into the river or the collision occurred, he would be at once guilty of a crime, and would be liable to a fine of $100 or imprisonment for the space of 30 days, because he did not, before he jumped, hunt up the conductor and ask his permission to leave the car while in motion. History tells us of a Venetian statute which, to discourage street encounters in the time when men wore side arms, made it a capital offense to shed blood in the streets of Venice. It also tells of a physician who, meeting a man in a fit on the streets, lanced him and saved his life. A sensible magistrate decided that the act of the physician did not come within the intent of the statute, and that he was not subject to the extreme penalty for his humane act.

The Iowa Supreme Court would no doubt have hanged the surgeon and reversed the decision of the magistrate. The truth is, as any one can see at a glance, that the Iowa statute was intended simply to punish trespassers for getting on trains while in motion, to steal a ride, and the same persons, or others intending to evade the payment of fare, from jumping off to escape detection by the conductor. To extend it to the case of necessity such as we have alluded to is manifestly absurd, and surely the case of a mother separated from her infant children by the neglect of those in charge of the train, and almost crazed at the thought of losing them, is one of natural impulse and fear of danger, which may properly be deemed necessity.—*Railroad Gazette.*

Garden and Forest, a New Journal.

Those of our readers who are interested in horticulture or forestry will be pleased to hear of the advent of a new paper devoted to these two subjects. Early in February the first issue is promised. The paper is to be published in this city, under the management of Mr. William A. Stiles, who will be assisted in his editorial labors by Professors Sargent and Farlow, of Harvard College, and Prof. Packard, of Brown University. A long list of contributors includes many distinguished names. The name of Professor Asa Gray, of Harvard, lately deceased, still heads the list. We wish the new journal every success, and trust that it will meet with the encouragement it will deserve if it carries out the promises made. The list of contributors assures matter of interest to all. It is to be illustrated, and will appear weekly. Its address is *Tribune* building, New York.

* Raben v. Central Iowa Ry. Co., 34 N. W. Rep., 621.