Correspondence.

A Blowing Well.

To the Editor of the Scientific American:

We have in our town a rather strange phenomenon. It is a bored well 120 ft. in depth, and about 5½ in. diameter inside the curbing, from which, just before a rain, a strong current of air issues. The current is sufficiently strong to blow a harmonica or toy spinning top so as to be heard 200 or 300 yards. It is only very strong just before a rain.

We would like to know what is the cause of the air blowing out so forcibly. The owner says he has examined the walls of it carefully with a mirror, and found no outlet from it. C. P. WADLEY.

Looxahoma, Miss., February 8, 1888.

Remedy for Ivy Poisoning.

To the Editor of the Scientific American:

The best of all remedies for poison ivy is simply hot water. All other remedies that I have tried (and I have tried many of them) only aggravate the poison, but hot water, as hot as can be borne, affords instant relief. It must be applied every hour or two, or as often as the itching returns. In a couple of days a cure is effected. Poison sumac yields to the same treatment. The inflammation, and with it the itching and burning, are allayed at once. I am poisoned dozens of times every year, but suffer no inconvenience except the trouble of applying the hot water.

JOHN BURROUGHS.

West Park, New York, February 16, 1888.

Self-Winding Clocks.

To the Editor of the Scientific American:

In your issue of February 4, page 75, Notes and Queries, No. 38, you give an emphatic "No" to subscriber's question.

In Watertown, Jefferson County, New York, Mr. Oliver Hitchcock has a clock that has been running now for over 20 years, and no doubt will continue to run until it is worn out. There is no addition to the original power, said power being a contrivance in the chimney, run by the ascending current of air. The air in circulating drives a fan, and the fan keeps the clock constantly wound. Does this not fill subscriber's bill? CANUCK.

Garden Island, Ontario, Canada.

[This does not "fill subscriber's bill." In the query (No. 38) referred to, no addition to original power was to be allowed. The ascending current of air in the chimney is continually adding to the original power in the case you cite. The "original power" of query No. 38 is the power originally expended in winding.—ED.]

The Swenson Sorghum Sugar Patent.

To the Editor of the Scientific American:

We, the undersigned, have read in your valuable paper the articles regarding a patent granted to Prof. Swenson for a device for neutralizing the acids in sorghum juice by the use of lime. We know that Capt. W. C. Tilton, of this county, produced the same effect in September, 1868.

The juice was run into tanks from the mill, and was treated with lime water to neutralize the acids present, testing with litmus paper. He succeeded in making a good, merchantable brown sugar, but he did not push it any further, as he said the amount of sorghum produced here did not warrant him in putting up works large enough to make it profitable, owing to the low price of sugar.

S. G. CARTER,
JAMES C. HENRY,
J. T. HENRY,
W. H. RAMSEY,
R. E. WILSON, *Atty.*,
JAS. M. MCGEE.

Spring Place, Murray County, Ga., Feb. 11, 1888.

[We stated the claim in the Swenson patent was for mixing lime with the cane chips in the diffusion bath, not for the broad or general idea of neutralizing the expressed juice by treatment with lime, which latter is very old, and we believe dates further back than Capt. Tilton's experiment.—EDS.]

Concerning Alum Baking Powders.

To the Editor of the Scientific American:

In your issue of February 4, 1888, in answer to "S" (query 23, page 75), who asks for certain information concerning baking powders, you say "alum is considered injurious."

It seems to me that this statement may produce upon the minds of some of the readers of your valuable journal an impression you did not intend. Moreover, if allowed to pass without comment, it might disturb, unnecessarily, many who use the so-called "alum" baking powders in preference to all others; for though by some persons "alum is considered injurious," others, who stand in the foremost rank among scientific men and practical chemists, declare that the use of alum in baking powders is quite harmless.

That distinguished chemist and author, Francis Sutton, F.C.I., F.C.S., etc., of England, is among the latter. He was engaged as an expert in a suit brought against the makers of the "Norfolk Baking Powder," an "alum" baking powder. This led him to make a series of experiments with this baking powder upon animals. When called for his evidence in court, after having given a full account of his experiments, he concluded with these words: "In my opinion there is nothing injurious in the use of this (alum) baking powder. It is perfectly harmless." (See article on Baking Powder in *Pharmaceutical Record*, April 1, 1887.)

But we need not go to England for proof that a properly made alum baking powder is not injurious to health.

In SCIENTIFIC AMERICAN SUPPLEMENT, No. 185, Prof. G. E. Patrick, professor of chemistry in the University of Kansas, gives his results of two months' experiment with alum baking powder upon animals. He concluded his article as follows: "It seems to me established, as well by experiment as by reason, that a properly made alum baking powder as used in making bread or biscuits is perfectly harmless to the human system."

In conclusion, permit me to suggest that the unfounded prejudice entertained by some against so-called "alum" baking powder is an inheritance from a by-gone generation, when "potash" alum was used to "improve" the quality of bad flour.

But "potash" alum used to improve bad flour is *one* thing, while burnt "ammonia" alum mixed with bicarbonate of soda, to raise bread or biscuit from good flour, is quite another thing, for burnt ammonia alum mixed with the proper quantity of bicarbonate of soda is *completely destroyed* during the baking of bread. The result is only small portions of Glauber's salt and still smaller portions of harmless hydrate of alumina.

JOEL G. CLEMMER.

Lansdale, Pa.

Isinglass.

Isinglass consists of the dried swimming bladder of different fishes. The bladders vary much in shape, according to their origin, and they are prepared for the market in various ways. Some are simply dried while slightly distended, forming pipe isinglass. When there are natural openings in these tubes, they are called purses. When the swimming bladders are slit open, flattened, and dried, they are known as leaf isinglass. Other things being equal, the value of a sample is determined by the amount of impurities present. These impurities are ordinary dirt, mucus naturally present inside the bladder, technically called grease, and blood stains. If the bladders were hung up to dry with the orifice downward, the mucus could be drained off; but usually the fishermen fear the reduction in weight, and take care to retain all they can. It is necessary to insist on having the bladders slit up and rinsed clean as soon as they are removed from the fish. This would so much increase the value of the product that the extra labor would be very profitable. Blood stains cannot be removed without injuring the quality. If any process could be devised effectual for this purpose, a valuable discovery would be made. The chief places of production are Russia, Siberia, and Hudson's Bay, Brazil, West Indies, Penang, Bombay, Manila, this being approximately the order of their importance. All Russian and Siberian is known as Russian, the more frequent varieties being "Beluga leaf," the finest in the market, obtained from a species of sturgeon; Astrakhan leaf; Saliansky leaf and book; and Samovy leaf and book. The fish yielding them inhabit the great rivers and fresh water lakes. They are caught during the winter, and the bladders removed and dried in various forms. The winter catch is collected at the great fair at Nijni-Novgorod, and is there bought by brokers and merchants from St. Petersburg. Some trade is done in Hamburg, but the varieties there sold are not what we know as Russian. When the ice breaks up, the isinglass is shipped by steamer as quickly as possible, mostly to the London docks, on account of the isinglass merchants there. The end of June and the beginning of July is the season when the winter's produce reaches this country. The Brazil, Penang, Bombay, and Manila products are imported at all periods of the year, generally packed in cases, varying in weight. Original cases of Penang isinglass weigh 3 cwt.; Manila, about 2 cwt.; Brazilian, about 2 cwt. 3 qrs.

The uses of isinglass are not very varied. The largest quantity is used by brewers and wine merchants for clarifying their goods. This property is extraordinary, for gelatin, which seems chemically the same thing as isinglass, does not possess it. One theory is that the tenacious mucilage shaken with the liquid gradually settles to the bottom, entangling all floating particles as it sinks. Another suggestion is that a very delicate fibrous network remains after the isinglass is dissolved, and entangles the particles in the way the mucilage is supposed to act. Many varieties of isinglass, generally the lower brands, are used for this purpose. Some brewers use it in the natural state, others prefer it manufactured into a fine or wide strip, which dissolves quicker, and suffers no waste. At present, Penang is the favorite kind. Russian long staple isinglass is used only by the Worcestershire farmers for clarifying their cider. In spite of its costliness, Scotch brewers prefer Russian leaf. The use of Samovy isinglass was formerly universal among the Irish brewers, and much is still sent to Dublin; but other varieties have partly taken its place. It is a Russian kind, obtained from the bladders of the *som* fish. Its name is the adjective form of the noun *som*. It is used only by brewers. Russian isinglass is also shipped to Madeira for use in clarifying wines. A good deal of various kinds is used in this country by wine merchants.

For clarifying purposes the isinglass is "cut" or dissolved in acid, sulphurous acid being used by brewers, as it tends to preserve the beer. When reduced to the right consistence, a little is placed in each cask before sending it out for consumption. Sole skins are the only substitute used for isinglass. They can only be had in winter, the supply is uncertain, and they have not the strength of the Penang varieties. Next to the brewer's demand comes that of the cook, who uses it for making jellies, thickening soup, and stiffening jams. For this purpose best Russian takes the highest position, owing to the superior strength and nourishing properties. Isinglass being the purest natural form of gelatin, a very pure article, artificially prepared without the use of acids or other chemicals, has long been known in the market as patent isinglass. It does not possess the clarifying power of the natural article, but is equally useful for cooking.

There seem to be only six isinglass cutters in England, all being domiciled in London. The sorted isinglass is very hard and tough, very difficult to bend or manipulate. It is soaked till it becomes a little pliable, and is then trimmed. Sometimes it is just pressed by hand on a board with a rounded surface, at others it is run once between strong rollers to flatten it a little, and make the dark and dirty spots accessible to the knife, the top of the roller being used to bend the pieces on. The cuttings are sold separately as an inferior grade. The next process is that of rolling. Very hard steel rollers, powerful and accurately adjusted, are used. They are capable of exerting a pressure of 100 tons. Two are employed, the first to bring the isinglass to a uniform thickness, and the smaller ones, kept cool by a current of water running through them, to reduce it to little more than the thickness of writing paper. It is very curious to see the thick, tough pieces gradually spreading out under the rollers, and folded and rolled like puff pastry till the separate pieces so unite that no joint can be seen, and the mass is reduced, under the coarse rollers, to what looks like semi-transparent millboard. From the finer rollers it comes in a beautifully transparent ribbon, many yards to the pound, "shot" like watered silk, in parallel lines about an inch broad. It is now hung up to dry in a separate room, the drying being an operation of considerable nicety. When sufficiently dried, it is stored till wanted for cutting, or it is sold as ribbon isinglass to all who prefer this form.

The machines for cutting are well and accurately made, and are so adjusted that they slice pieces off a sheet of paper without stirring or bending it in the least. For the "fine cut" isinglass in which chemists are interested, these machines are run at great speed, 2,000 to 2,500 revolutions, making 10,000 to 12,000 cuts in a minute. It takes an hour to cut 5 lb. or 6 lb., so that each pound would contain 100,000 to 125,000 separate fibers if none of them was broken. The actual number must be very much greater.—*Watson Smith, Jour. Soc. Chem. Industry.*

H. M. WILLIAMS recently visited Chicago after his return from the Asiatic empires, where he went to introduce the electric light, and he says to a reporter of the Chicago *Herald* that the readiness with which the Orientals adopt these improvements is quite astonishing. In Japan, most of the principal cities are now lighted by electricity, as ours are, and most of the finest houses are illuminated in the same way. A large plant has recently been placed in the palace of the Mikado, at Tokio, a very large building, or rather a cluster of buildings, connected by corridors and covering several acres. The Chinese do not take hold of these improvements as readily as the Japs, but are beginning to see their advantages. The Coreans are ready to adopt all modern ideas, particularly if they come from the United States. The palace of the King of Corea has a plant of 300 lights, and was first illuminated on the birthday of the king's mother-in-law, on the twentieth of February, with great ceremony. The palace is at Seoul, and consists of a series of long, low wooden buildings, with a thatched roof. As no foreigner is allowed to look upon the features of the king or queen, the workmen took great risks when they were putting in the apparatus, for if they had, even by accident, seen the face of the king, they would have been put to death, according to the custom of the country. They were carried into the palace and through the corridors in palanquins, and trumpeters were sent ahead of them, so that the royal family might keep out of their way.