cludes the whole space of the building including the court. The court will be roofed with glass. The walls and partitions above this story rest on iron columns, leaving the whole space on the lower floor open for light and free communication.

A broad corridor will extend about the lower floor on the southwest, reaching to and including the central pavilions; it will surround a box and delivery screen. This corridor will be only one half story high. Above it the remainder of the story will be formed into a gallery looking inward to the delivery rooms.

Corridors encircle the building in each of the upper stories, bounded on the exterior and interior by rooms lighted from the street and central court.

The rooms of the Postmaster, Deputy Postmaster, and Cashier will be over the principal entrance at the southwest. The Park front rooms will be occupied by the United States Courts. Three court rooms will be provided, two of which will be the hight of two stories. Adjoining these rooms will be special apartments for the judges. The remainder of the second and third stories will be occupied by offices for United States Marshals and other officers, United States attorneys, clerks, and other officers connected with the courts; and the jury rooms will be in the third story.

The work has proceeded slowly owing to various obstacles, some raised by the city authorities, but it has now reached to the second story.

As our readers will see, the lower part of the building is open to the criticism that its numerous angles will form most efficient dust traps. This will inevitably impart a dingy dirty appearance, which will greatly mar the effect designed. We regret that some other design for this story, in harmony with the rest of the design, yet not liable to the objection named, was not adopted.

Barring this defect, the edifice, when completed, will present a majestic and imposing appearance.

Stone, iron, and brick are the materials used; the exterior is of granite. One hundred and fifty-nine iron columns are placed in the basement, and one hundred and seventeen to support the partition walls and floors. The foundations are of granite and concrete, and are of the most substantial character. The floors will be of brick and iron, the stairs are to be of stone and iron, the roof of iron, covered with slate and copper. The building is to be heated by four large low eprssure steam boilers.

The roofs of the corridor pavilions rise 107 feet above the sidewalk. The foundation of concrete is laid 35 feet below the sidewalk: the cellar is a little more than 7 feet in the clear, the basement 16 feet, the public corridor 14 feet, and the *mezzanine*, or gallery above, nearly the same. The outer circuit of the building will be over one fifth of a mile.

The granite comes from an island off the coast of Maine, where 600 men are employed in quarrying and dressing it. No stone cutting is done at the building. When the blocks arrive, they are ready to hoist into the places prepared for them. Derricks, worked by steam engines, are arranged in such a way that it requires only one man to set all the stone which 600 men are cutting.

The north front of the building will be 290 feet in length, the Broadway front 340 feet, and the Park Row front 320 feet in the clear. On each of these two fronts, however, there is an angle, which, running back some distance and then projecting, forms the entrance looking down Broadway. The entire width of this front is 130 feet. These entering angles and projecting portico will give this front a very bold and striking appearance.

The Doctrine of Metempsychosis.

At the time of the death of Mr. Louis Bonard, an ingenious mechanic of this city, we called attention to his bequest, to the Society for the Prevention of Cruelty to Animals, of $100,000. The testator's relatives are disputing the validity of the will on the ground of insanity, and rely partly upon the alleged belief of the deceased in the transmigration of souls. Dr. Clymer was examined as a witness, and, on being asked if he considered such a belief to be a mental delusion, replied:

"I will tell you in my own way. It appears that opinion was at one time a very common doctrine. In modern times we know it more as the doctrine of Pythagoras, but he got it from the Egyptians. Now, it is told, they were the first who believed in the immortality of the soul, and that this was the first expression of such belief. They held that the soul, being immortal, when it leaves the body, enters another, and never ceases to be removed from one to another. Metempsychosis implies the passage of that soul into animals successively, and, according to some who held the doctrine, again returning, after certain purifications by its progress through these animals, to the human form; and this was one of the reasons why the Egyptians preserved their mummies. This doctrine was held by the Druids of France, Britain and Germany, and is held by the Brahmins, and, in more modern times, by Fourier, and his disciples in France. Origen, one of the Fathers of the Church, held it, and some theologians endeavored to prove it as held in the New Testament, from the 9th chapter of St. John, and others say the doctrine of purgatory originated in this way. Our own Christian doctrines are held variously. What one believes, another thinks a delusion, but a medical man, finding no evidence of delusion generally, would not be warranted in saying such a person labors under mental delusion. The transmigration of souls was held by some of the first minds in ancient and modern times, and I do not consider a belief in it necessarily implies that he was laboring under delusion."

YOU may glean knowledge by reading, but you must separate the chaff from the wheat by thinking.

Correspondence.

The Editors are not responsible for the opinions expressed by their Correspondents.

Fireproof Building.---How they Build in Berlin.

To the Editor of the Scientific American:

The late Chicago fire has called public attention to the subject of fireproof building; and within the last few weeks a number of articles about this matter have already appeared in the columns of your paper. It seems to me that all endeavors to find constructions which will be really fireproof—for instance, so as to stand a fire like the one in Chicago—are useless, at least as far as the majority of our buildings are concerned, for the simple reason that even if such constructions were found, they would be too expensive for our ordinary dwellings, stores, etc. If stones, bricks, and iron are considered insufficiently fireproof, we may give up the idea of building our cities of fireproof houses. The proper remedy to prevent large conflagrations is to build all houses in a city as fireproof as can be done at a reasonable cost. If only all frame buildings, as well as the unnecessary use of wood for inside work, roofs, etc., were absolutely prohibited, and no lumber yards and the like were allowed inside of our cities, the houses need only be built substantially of stone brick, and iron, and we should have no more conflagrations of any extent. In most of our cities, however, the building laws are, or at least have been up to a recent date, of such a deplorable nature, and a mode of building has accordingly been in use, that a fire can hardly be expected to remain confined to the house in which it originates. As long as party walls are allowed, and chimneys are built without any foundation, but supported only by a couple of joists, etc., etc., our houses will always be apt to communicate a fire from one to the other, as, as soon as a whole row of houses is in flames, the heat is sufficiently intense to set fire to adjoining buildings, even if they are built independent of the former.

An example that it is not necessary to build a city of fireproof buildings only, to prevent any large fires, is the city of Berlin. There has been no fire of any extent during the last ten years, the mere reason of which is an excellent building law and a strict enforcement of the same, in combination with an effective fire department.

In this country, however, even where more money is spent on a house than is necessary to construct it fireproof to a certain extent, we often find that a great deal of money is expended in such a manner as to make the building as unsafe as possible against fire. We will only allude to the "lumber piles" which are put on many houses, in the form of "French roofs." Our stores and offices are lined with neatly dressed lumber, which, to make it the more dangerous, is oiled or varnished. Is it a wonder if a safe in such an office proves insufficient to preserve its contents in case the building takes fire? Such unreasonable use of wood for the inner outfit of our houses should not be tolerated, in the same way as, in most of our cities, shingle roofs are now prohibited by law. For the majority of our buildings, lumber cannot be entirely excluded as building material, as for floors, joists, rafters, etc.; but its use should be diminished as much as possible; wooden partitions should be abandoned, and the stairways should be made either of iron or stone, and self supporting, so as to require no casing, a construction which cannot be too highly recommended.

I have been in Berlin for four years, from 1862 to 1866, and I do not recollect ever to have seen a fire there. I have often seen the engines in position, ready to go to work, but in almost all cases the fire was suppressed without bringing them into use. How does this compare with the fires in our American cities, where in one half of the cases the damage done by water is greater than that by fire?

Baltimore, Md. H. DUEBERG.

An Appeal to Dr. Vander Weyde.

To the Editor of the Scientific American:

Professor P. H. Vander Weyde, in one of his very interesting articles upon psychic force, speaks of the Davenport brothers, and how that he had performed the same wonderful feats as those jugglers. Now, as they have astonished and excited the wonder of large audiences in nearly every city in the United States, the Professor would confer a favor upon thousands, perhaps hundreds of thousands, of his fellow citizens, if he would give a clear and full *exposé* of the wonderful performances of those men while in their cabinet; such as the taking off of the coat of one of them, while securely tied, and the knots sealed with sealing wax; also the putting on of another gentleman's coat while he (the Davenport) was tied fast to a chair. Of course the light was extinguished during the performance, but not longer than it would have taken a man, not tied, to put on or take off his coat. And will the Doctor also explain the passing of the musical instruments around the hall, with phosphorus on them to enable the audience to see their movements?

Americus, Ga. J. FRICKER.

Squeaking Boots Again.

To the Editor of the Scientific American:

I have two pair of calfskin boots, both inveterate squeakers, which I have worn for a year. I tried all the known remedies, as greasing the soles, driving in pegs and nails, soaking them in water and wearing them till dry, but without success. At length a happy thought struck me. With a rag, I saturated the insoles with kerosene oil; and *Eureka et* glory! O hallelujah! the thinnest pair gave in at once, and the other pair after the second application.

Sextons and ushers will please make a note of this, and ever cherish, with grateful remembrance, the name of the discoverer, JONES.

[For the Scientific American.]

ABSORPTION OF MOISTURE BY BRICK AND STONE.

BY JOHN C. DRAPER, PROFESSOR OF CHEMISTRY UNIVERSITY MEDICAL COLLEGE, NEW YORK.

In the construction of buildings in a climate like ours, it is of tho utmost importance that the materials employed should absorb and retain as little water as possible, otherwise the buildings will be damp, and the presence of quantities of moisture in their walls will favor the formation of vegetable growths upon their surfaces, which will, together with the action of frost, aid materially in the process of disintegration.

In a recent experimental investigation of this subject, I selected the following materials, namely, brown stone and Nova Scotia stone of the best quality, fine red Philadelphia brick, and a very compact, hard burned, white brick, stamped A. Hall & Sons, Perth Amboy, N. J. Masses of equal size of each were placed in water for twenty hours to allow them to imbibe as much of the fluid as they could take up. They were then turned about on blotting paper as long as they dampened it. The external moisture being thus removed, the masses were weighed and placed in an air bath at 212° for three hours. On being removed from the bath, they were put under a glass bell jar, and, being again weighed when cool, were found to have lost the following quantities of moisture.

TABLE I.

Brown stone	10,000	parts, lost	260 of moisture.
Nova Scotia stone	"	"	426 "
Red brick	"	"	1,179 "
White brick	"	"	525 "

The masses were then placed in the warm air bath again, and kept at 212° for four hours. On being cooled with the same precautions as before they showed the following losses:

TABLE II.

Brown stone	10,000	parts, lost	8	parts of moisture.
Nova Scotia stone	"	"	8	" "
Red brick	"	"	0	" "
White brick	"	"	0	" "

The masses were then placed on an iron plate, which was heated to a dull red heat and covered with a hood of tin to cut off currents of air. They were consequently exposed to a uniform temperature, which was sufficiently high to scorch paper when it was laid on their upper surfaces. The last traces of water were thus expelled, the quantities being as follows:

TABLE III.

Brown stone	10,000	parts, lost	17	parts of moisture.
Nova Scotia stone	"	"	35	" "
Red brick	"	"	a trace	
White brick	"	"	a trace	

The conditions, to which the substances were submitted at the commencement of these experiments on drying, may be regarded as representing their state after a prolonged storm of rain in which they had been drenched and soaked with water for many hours, and Table I. demonstrates that while the brick absorbed more moisture than the stone, the white brick imbibed less than half that taken up by the red, and the brown stone a little more than half that taken up by the Nova Scotia stone.

Table II. in its turn shows that stone is far more retentive of its moisture than brick, for, while the former lost eight parts, the latter lost none. In Table III. the same fact is still more conclusively demonstrated, for against an almost imperceptible loss on the part of the brick, the brown stone lost seventeen parts, and the Nova Scotia stone, thirty five. We are therefore justified in concluding that though brick absorbs a larger quantity of moisture than stone, it is to be preferred as a building material, since it parts with the imbibed water with greater facility; and, comparing the two kinds of brick together, the white hard burned brick is superior to the red, since it absorbs only half as much water.

Passing from the consideration of the power of retention to that of absorption, I found that, on submitting the thoroughly dried masses of the last detailed experiment to the action of an atmosphere saturated with moisture at 70° Fahr. for six days, the following results were obtained:

TABLE IV.

Brown stone,	10,000	parts, absorb	at 70°,	52	of moisture.
Nova Scotia stone,	"	"	"	45	"
Red brick,	"	"	"	3	"
White brick,	"	"	"	3	"

The conditions prevailing in this experiment may be regarded as being similar to those existing on an ordinary midsummer day when the dew point stands at 70°; and on inspecting the table we find that, while the brick absorbs but little moisture, the stone is very hygroscopic, the brown stone possessing this property in a more marked degree than the Nova Scotia. Since warmth and moisture, taken together, are peculiarly favorable to the production of vegetable growths, it follows that brown stone is, by virtue of the larger amount of water it absorbs, more liable to disintegration from this cause than the other substances submitted to experiment. In the case of the bricks the absorptive power is, as the table shows, equal, and very slight or slow in its action. They are therefore superior to stone in this respect.

To determine the absorptive power when exposed to conditions similar to those prevailing during a fog, I caused steam from a free opening to play upon them for three hours. After cooling for twenty hours, they were weighed with the following result:

TABLE V.

Brown stone,	10,000	parts, absorbed	147	parts of moisture.
Nova Scotia stone.	"	"	110	" "
Red brick	"	"	127	" "
White brick	"	"	106	" "

Which demonstrates that under such circumstances brown stone is more hygroscopic than Nova Scotia stone, and there

fore affords a more favorable *nidus* for vegetable growths, and is consequently less durable. In the case of the bricks, though the red brick absorbs more fog than the Nova Scotia stone, it is a better building material, since it surrenders its moisture with greater facility. The white brick, on the contrary, absorbs less fog than the others, and dries as easily as the red brick; it is therefore the most satisfactory of the building materials submitted to examination.

JOHN C. DRAPER.

[For the Scientific American.]

SOME REMARKS ON PROFESSOR CROOKES' LATEST COMMUNICATIONS.

BY P. H. VANDER WEYDE.

By the kindness of Professor Morton, of Hoboken, I had been furnished the advanced sheet of Professor Crookes' second article, of which an extract appeared in the SCIENTIFIC AMERICAN of November 11th. I was thus perfectly informed of Professor Crookes' latest arguments when I wrote my reply, to certain defenders of the psychic force, published in that same number. I mention this fact only as proof of my quiet convictions of being in the right. I did not refer to it, intending to dispose, in the future, of this somewhat new phase of the subject, and, for shortness' sake, I confined myself to that which had, so far, been brought before the readers of this paper.

As the main points of Professor Crookes' new paper have now appeared, and perhaps been digested by the readers of the SCIENTIFIC AMERICAN, I will consider them in detail, not that I personally consider the subject of such importance, but because the doctrine of the psychic force finds many adherents, whom I think it a duty to save from this novel form of superstition, if such a thing be possible.

Professor Crookes begins with using, as a motto, a quotation from Galvani, in which the latter says that, notwithstanding he is derided by scientists and know-nothings, he knows that he has "discovered one of the greatest forces in Nature." Now this quotation may seem applicable to Professor Crookes, but there are some curious differences and resemblances, which I will first notice. Professor Crookes cannot complain that also the know-nothings laugh at him; they almost all believe in the psychic force, only the great majority of the scientists are incredulous. This is a difference. A resemblance is in the fact that Galvani supposed he had discovered a vital force, a nervous fluid, in short the psychic force, and he attacked Volta and others, most violently, for trying to prove that the contact of the different metals developed an electric current, which caused the motion of the frog's legs, because the latter are, in fact, nothing but a delicate electrometer. Galvani died in the conviction that the cause which moves the frog's legs resides in the frog, and that Volta was in error to ascribe it to an exterior cause; and so Professor Crookes appears convinced that the cause which moves the spring balance resides in Mr. Home, and that others are in error who ascribe it to exterior causes. It has been recorded in the history of scientific discoveries that if Galvani had been posted in electrical science, he would have attributed the first accidental observation of the motion of the frog's legs to its true cause, the induction by the electrical machine, which was being operated at the time in the same room; but being ignorant of the laws of induction, notwithstanding these laws, at that time, were well known and established, he fell back on his old cherished hypothesis that all animals have a peculiar force residing in them; and he was so far from discovering the true theory of these electrical actions, that many well informed scientists, among them Professor B. Silliman, of New Haven, rightly object to the use of the word galvanism, on the ground that Galvani never discovered that which we now designate by that name. It is therefore proposed that Voltaic battery and Voltaic current are the true expressions to be used, and ought to supersede those now in use, which give to Galvani an honor that by no means belongs to him.

The objection was made to Professor Crookes, of rushing into print soon after having made the announcement a short time before of his intention to investigate Home's performances. Professor Crookes answers now that, within two years, he has witnessed experiments of this kind, and that he saw weights of 40 or 60 lbs. so powerfully psychologized that he and others present could scarcely lift them from the floor; that he also saw the gravitation diminished, etc. By this Professor Crookes confesses that he was already a convert to the belief in so called psychological phenomena, and prejudiced in their favor at the time that he announced that he was going to investigate Home's performances.

In regard to the increase in weight of so called psychologized substances, I can speak with full knowledge, having myself often seen such performances; and I must declare that this increase is all in the imagination of the persons trying to lift the weights; their minds were psychologized, that is, so influenced by imaginative persuasion, that their muscles were partially paralyzed. As my faith in the constancy of the laws of gravitation cannot be shaken, my mind could not become psychologized in this way, and I had never any trouble in lifting the weights, and never found any difference whatever, even when a dozen people assured one another they were much heavier than before. However, the best proof I had was to place such a mass in the balance, and challenge the mediums to increase its weight a single ounce; no one ever succeeded in doing this. They pretended to be able to increase or diminish weight, and were sustained by the assertion of many present, but their assertions were never sustained by that most reliable tool of the scientist, the balance.

And this last mentioned peculiarity of the balance must be the crucial task for the reality of the pretended psychic force. The microscope and telescope have often deceived me, the spectroscope is giving me desperate problems to solve, but the balance is the most precious apparatus in my possession, because it always gives direct answers, and has never deceived me. Now, Professor Crookes, as chemist, has surely at least one reliable balance, decidedly more delicate than any existing spring balance; therefore it is surprising that he does not let Home exert his powers on the weights placed in the same, in place of using spring balances, which are so peculiarly apt to be used for deception, that some traders use them exclusively, and in some European countries their employment has been most peremptorily prohibited. In this way he may not only positively prove the existence of the psychic force, but correctly weigh the amount of it to within the tenth of a milligramme; with the balance he may more easily find through what substances this pretended force is conducted; and determine what are conductors and non-conductors of this force or vital fluid, as already appears to have been done in England, by Ziegher, who, six years ago, patented a battery to develop this vital force in large quantity. I am surprised that Professor Crookes is not aware of this important discovery, which is just in the line of pursuit he has now entered upon. He will find it easily in the English patent office records. Mr. Ziegher asserts that it is not electricity, as it passes through bodies which do not conduct electricity, silk being its best conductor. It may be developed independently of the human body, whenever a nitrogenized substance comes in contact with a carbonized body. To produce it he takes a number of bladders filled with liquid ammonia (the nitrogenized substance), and places them in vessels containing molasses (the carbonized substance); these bladders and vessels are connected like a voltaic battery, but by means of silk cords, around the necks of the bladders and hanging in the molasses, in this way: ammonia, bladder, molasses, silk cord, ammonia, bladder, molasses, silk cord, etc.; when now the extreme silk cords are joined, the current of psychic force, or vital fluid, is established, and men or animals placed in this circuit become very lively. This is no exaggeration, as I give the inventor's and English patentee's own words.

In regard to the principal experiments described by Professor Crookes, I will state that I have now arranged the very same contrivance, and am anxious to find a medium who can move it; but I desire psychic action on my chemical balance, produced without contact, to convince me, and then I will as readily reject my old notions, as I have rejected my former errors, which were to believe in the existence of a luminous, a caloric, a magnetic and an electric fluid.

Benefits of Co-operation.

There seems, says the *Nation*, to be a mischievous notion growing up in the minds of some of the European Governments that the International can, and ought to be, put down by force. An attempt of this kind is probably the only thing that could make it permanently powerful and dangerous. But its existence is a symptom, and a striking one, of the tendency of all political questions everywhere to merge themselves in the labor question, and the main result of the work of the International will probably be the rooting in the working class mind all over Europe that this is really the only political question of any moment. A statement was made by Mr. Nutall, a well known leader of the co-operative movement in England, at a recent meeting of the British Social Science Association, revealing a prospect for the laboring classes which makes the schemes of the International and of the "Labor Reformers" very unimportant. He showed that in the manufacturing borough of Oldham, with a total population of seventy thousand, there were co-operative societies numbering seven thousand members. They had a capital of eight hundred thousand dollars in their six co-operative stores, and a hundred and fifty thousand dollars invested in other places. They had built seventy-five workingmen's houses in the last twelve months. They have a corn-mill, large halls, and five libraries, and consultation rooms where they meet weekly for discussion. They have a capital of fifteen hundred thousand dollars, invested in cotton mills and loans; and in one of these cotton mills, which represents a capital of half a million of dollars nine tenths of the shareholders are workmen. A good question for our "labor reform" conventions to discuss would be, how many years of perorating and gadding about the country it would take to produce such results as these.

How to prevent Water from Freezing.

Boussingault relates the following experiment, conducted by him in order to test the condition of water, when cooled considerably below its normal freezing point, under circumstances where free expansion was prevented. For this purpose, a strong cylinder of steel was filled with water at the temperature of maximum density, and a steel plug tightly fitted to the opening, thus preventing, by the strength and the practically unyielding nature of the confining vessel, any expansion of the contained liquid when cooled. The sound made by the falling of a metal ball, previously placed within the cylinder, gave an indication of the condition of its contents. Under these circumstances, Boussingault found that water remains liquid even at a temperature of —18° C. (—0·4° Fahr.), but freezes instantly as soon as the plug, which hermetically sealed the vessel, is removed and the particles are allowed full freedom to expand.

WE hear from Russia that a commission, empowered especially for the consideration of the subject, has recommended the adoption of a narrow gage on the system of railroads about to be constructed between Orenburg and the Caucasus.

Butter Making.

Fine butter is made in various ways; and it would be a public benefit if a uniform rule could be discovered and followed by all in the manufacture of butter. However, this would not render all butter of the same quality, so long as the quality of milk is so different. Breeds of cows, different grasses and other feed, will always continue the difference in milk. Hence we may always expect to find upon the market the different grades of butter usually quoted. The three following modes of caring for milk are principally followed in this State:

1. The milk is strained into pans and set on racks or shelves in the milk room.

2. The milk is strained, and set in pails, in which a small quantity of sour buttermilk is put, to hasten the souring of the milk. When this is sufficiently effected, the milk is churned.

3. In the creameries and many of the large dairies, the milk is strained into pails, about eight inches on the bottom and not far from twenty inches high. These pails are then set into vats differently constructed, into which flows a stream of cold water, which is allowed to rise nearly to the top of the pail and then flows out of the vat, so that there is a constant flow of cold water around the pails. Twenty-four to forty-eight hours is a sufficient time for the cream to rise. It is then dipped off, the cream allowed to stand until slightly sour, and churned. The same process is substantially followed by those who use the large square pan and adopt the cooler system.

Good butter may be made by either of the above modes of handling the milk. But in either case great cleanliness and care are to be observed. Where the pan system is in vogue, the milk room should be so constructed as to admit free ventilation, regulation of temperature, and light. Direct sunlight should never fall upon the milk; neither should a brisk current of air pass over it. Both rapidly dry the cream upon the surface, and convert the surface into a tough, skinny substance, which cannot be converted into good butter.

The cream should be taken off the milk, so soon as the milk is changed or slightly sour. It should never be suffered to remain until spots of mold appear on its surface and whey arises at the side of the pan. Great care should be taken to prevent any bad air to reach the milk room, as both milk and cream rapidly absorb bad air; and where it prevails, good butter cannot be made. The old-fashioned dash churn in some size is best. Churning should be done done slowly, not over forty to sixty strokes per minute; and the milk or cream should be brought to a temperature varying but a little from 62° Fahr. Churning should be thoroughly done. The butter should not be removed from the churn until it is completely "gathered." It should be worked into a solid mass in the churn by the use of the dash; so that, when taken out, there will remain but a small quantity of buttermilk to be worked out. A large majority of dairymen wash their butter, and it is the best practice if you have soft water. Butter should be worked by pressure, whether it be done with the hand ladle or any kind of butter worker. The washing and working should be continued until all the buttermilk is removed. The butter should then be salted. For every twenty pounds of butter, use one pound of sifted, fine dairy salt. Work it carefully and evenly into the butter, and pack immediately.

The practice of salting butter and letting it stand from twelve to twenty-four hours, and then working over and packing, is not only unnecessary, but damaging to the quality of the article. "What is once done well and properly done, is better than twice ill done," applies in this case. The second working renders the butter "salvy." It breaks down the "grain" of the butter- and fits it for grease. Those who have practiced the above mode of working and salting their butter will not go back to the old mode. They say it is the only way they can put down their dairy and feel sure it will come out all right at the end of the season.—*Chenango (N. Y.) Republican.*

Transparent Varnishes.

The aniline colors are particularly well adapted for the manufacture of transparent lacs, which possess great intensity even in very thin films, and are hence very suitable for coloring glass or mica.

The process recommended by F. Springmuhl is to prepare separately an alcoholic solution of bleached shellac or sandarach and a concentrated alcoholic solution of the coloring matter, which last is added to the lac before using it, the glass or mica to be coated being slightly warmed. Colored films of great beauty may also be obtained, according to the author, from colored solutions of gun cotton in ether, the coloring matter being here dissolved in alcohol and ether.

The collodion film has its elasticity greatly increased by the addition of some turpentine oil; and when applied cold, can be removed entire. The colored films may now be cut into any pattern, and again attached to transparent objects.

THE much praised plant *Cundurango* and its juice have already fallen upon evil times. Violently attacked by many members of the profession as a worthless nostrum, the owners are apparently attempting to maintain its character as a quack remedy by offering it to sufferers at $100 per pound, C. O, D., no quantity less than one quarter of a pound being sold. This is making the most of the present notoriety of the drug, and looks as if the proprietors were not anxious for time to extend and justify its reputation.

WHERE manufactures flourish, land and its products are most valuable.