does the mustard improve in color, and the husk is thrown aside to be made into manure cake for the land; two kinds of seed are thus treated, the brown and the white; the former being much more pungent than the latter, and the two descriptions being mixed to suit the public taste.

PRACTICAL SUGGESTIONS ON TANNING LEATHER.

BY C. GILPIN.

(Continued from page 259.)

UNIFORM TEMPERATURE OF LIQUORS AND DISINTEGRATION OF BARK.

It is generally conceded that the process of tanning is much more rapid during the summer months than through the colder seasons of the year. In other words, the tannin penetrates the hide much more readily during the months of May, June, July, August, and September, than during the other seven months of the year. Those who have given this subject any attention, have doubtless observed that during the summer months the liquor ranged from 70° to 80° Fahrenheit, and fell as low as 35° and 40° during the colder seasons in this climate, and perhaps lower in more northerly latitudes. What the difference in time required, to tan out a stock handled regularly in the liquors of the temperatures named, might be, I regret that I have no exact means of presenting to the trade, at this time, but shall endeavor to possess the information at no distant day, when I will make it public. One fact all are aware of, that it takes considerable less bark to maintain the liquors up to a certain degree of strength in cold than it does in warm weather; the tanning principle not being so rapidly absorbed by the hide, less bark is ground during the winter months.

I can well recollect when it was the custom among tanners to lay away their stock in very heavy layers during the month of October, after sending off all that was ready for market, and letting it lie until the frost was entirely out of the ground, when it would be drawn, and, as a consequence, was found to be but little advanced during that period.

It may be asked upon what principle can this be accounted for, and what is proposed as a remedy. The causes appear obvious, upon the well-settled principle that all matter animate, as well as inanimate, is influenced by the elements, heat and cold, throughout all nature, to a greater or less degree, contracting and expanding the most solid metals, as well as the most delicate animal and vegetable formations; hence, when the liquors are below the expanding temperature, the hide contracts and the pores necessarily become more or less closed, and, when at that point, cause the hide to expand and the pores to open, just in proportion as the temperature is raised, until the whole mass may be disintegrated and a chemical change produced, which alters the entire organic structure of the material operated upon; thus it is clear that when the temperature of the liquors is allowed to fall below the expanding degree, the capillaries, by contraction, present an obstacle to the free passage of the tannin, and it cannot be taken up so rapidly; hence a much longer time is required to accomplish the object.

Having endeavored to define the cause, we will suggest a remedy, which will be to introduce, into every department of the yard, a regular temperature of liquor; and the facility with which the liquors can always be kept at a certain temperature, is the best reason why the manufacturer should lose no time in adopting it, particularly when, as a general thing, they have the facilities for supplying themselves with all the heat that may be necessary for this purpose; and, as a further auxiliary, all the operations of the tannery should be housed in good comfortable buildings, with steam pipes running through them, that would keep them at summer heat, or as warm as experience found necessary, then the junk through which all the liquor passes, should, by means of steam pipes, have sufficient heat thrown into it to insure the desired temperature throughout the entire yard at all times.

Thus, the liquor, passing from the vats to the junk, thence upon the leaches, with the entire establishment kept at a mild temperature, would, it is believed, accomplish all that is deemed necessary to overcome the loss sustained by the inaction produced by cold and freezing weather upon the operations of tanning.

The expense of putting in pipes for the purpose of generating heat sufficient to warm the building, should be no obstacle, when we consider the cost as compared with the advantages gained. Mr. James Calley, of Pittsburgh, informed me that the cost of putting in twelve hundred feet of three-quarter pipe, was two hundred dollars; this included all expenses; and from information received through well-informed sources, it is believed that the whole cost of fitting up a first-class tannery, with the necessary apparatus in the way of pipes, to accomplish our object, would not exceed twelve to fifteen hundred dollars, while the actual amount saved in time and labor in handling the stock, would, it is believed, fully equal one-half of the cost annually, to say nothing of making the workmen more comfortable, and thereby saving time that is always lost in warming feet and hands, in cold, frosty weather, which is the necessary consequence in all yards exposed to the frosts of winter, particularly in northern latitudes.

In communicating with the manufacturers upon the subject of having the bark thoroughly disintegrated before leaching, they pronounced, with one accord, that this was a great desideratum, if not the greatest want, in the operations of tanning. Now, that we have a system of leaching upon the upward hydraulic pressure, by which the liquid can be forced through any density that bark might acquire by being ground never so fine; believing, as most of them do, that under the present imperfect systems of preparing the bark, a considerable portion of the tanning principle is not, and cannot be extracted,

under the methods of leaching in general use, without the application of steam and boiling, or very hot liquids, which, it has been repeatedly shown, are generators of impurities, that have an injurious influence upon the leather, what we want is a machine that will thoroughly separate the bark, and discharge it into the leach in the form of saw-dust or shreds, allowing no part of it to escape without being brought to this condition. The best prepared bark that ever came under my notice, was prepared with stones arranged upon the plan of mill stones. It was thoroughly pulverized, or, perhaps, I might more properly say, ground into shreds. Under this method of grinding, no lumps or thick pieces could escape, as is the case now with the most approved mills in use. It would appear, from the past history of the world, in all ages and in all professions, that human nature has been averse to changing old methods for new ones, and the most useful as well as the most profitable improvements, have, too frequently, lingered longer in the murky and almost impenetrable atmosphere of prejudice, and those inveterate old fogies, custom and habit, than the advancement and interests of the great industrial pursuits of life would seem to demand. Yet, however much we dislike change in our systems of doing business, it is among the inevitable consequences, that necessity moves more individuals to adopt improvements than a desire to promote and encourage progress.

PALLISSARD'S WALKING SUPPORT FOR INFANTS.

The device herewith represented is intended to aid infants learning to walk, to prevent them from getting into danger and receiving hurts, and to relieve the mother, nurse, or attendant, from constant care and anxiety. Around the infant's body is secured a cushioned ring made to open on a hinge and properly fastened. It may have straps, if necessary, passing under the child's thighs for support. It is connected to a

lower circle, or ring, of metal by four ornamental bars having adjustable screws at the top to regulate the height and adapt it to the occupant. The base or lower circle is of such a diameter that it will not pass through an ordinary doorway, and will prevent the child from coming in contact with chairs, tables, stoves, etc., by which it may receive injury. The base is supported on easily-working casters that allow the contrivance to turn or move in any direction over the floor, as the child may incline its body or direct its feet. Its great diameter precludes the possibility of overturning. A little shelf may be affixed to the supporting ring, on which articles of food, or toys, may be placed for the amusement of the infantile occupant.

Patented through the Scientific American Patent Agency, June 12, 1866, by P. Pallissard, who may be addressed at Kankakee City, Ill.

A NEW PROCESS FOR DETERMINING THE COMPARATIVE VALUE OF WHITE LEAD.

BY PROF. C. F. CHANDLER.

To determine the comparative value of different samples of white lead, it has generally been considered necessary to submit them to chemical analysis; an operation which can only be performed by a skillful chemist, and which, if carefully executed, requires much time, and involves, consequently, considerable expense.

It is therefore extremely important that a simple test should be devised, one so easy of execution that it may be applied by all persons interested in paints. Such a test was recently suggested to me by a person who has had many years of experience in the white lead industry, and who desired me to submit his plan to a careful examination to test its reliability. This I have done, and the results are so satisfactory that I desire to place them before your readers, that those interested in the purchase and use of white lead may avail themselves of the test.

PROPERTIES OF WHITE LEAD.

The great value of white lead as a pigment depends upon its opacity, or as painters express it, its "body," or "covering power." Pure white lead differs in opacity to a limited extent, according to the process by which it is made; that prepared by the Dutch method having the greatest covering power. The commercial varieties of white lead differ, however, to a far greater extent, owing to the extensive adulteration which is now practiced; sulphate of baryta, or barytes, a very heavy mineral, much cheaper than white lead, being the chief adulterant employed. The objection to the barytes is its transparency or want of body; it is not opaque, and con-

sequently it does not cover well. A much larger quantity of the adulterated paint is required to produce the desired effect.

There is another objection to barytes, it has no affinity for the oil, and, consequently, when the adulterated paint is applied to surfaces which are exposed to the weather, as on the outside of houses, the oil quickly disappears, leaving the pigment loosely attached, and ready to be washed off by the rain.

Such paint rubs off readily upon our clothes when we come in contact with it.

White lead is a compound of carbonate and hydrated oxide of lead, which unites with the oil to some extent, producing a hard surface, which resists for a much longer time the action of the elements. Oxide of zinc has a similar property.

From these statements the importance of a simple test of the quality of white lead will be readily seen.

THE TEST.

The value of white lead depends upon its opacity; the more opaque it is, the more completely will it conceal a dark color. The test consists, therefore, in mixing a definite quantity of a dark pigment with a definite quantity of the white lead, spreading the mixture on a suitable surface, and noting the tint produced. In my experiments 100 grains of the pigment white lead, ground in oil, as it comes from the mill, were mixed with one-half grain of Eddy's best lampblack, and four drops of boiled linseed oil. These substances were thoroughly incorporated, and then spread upon sheets of window glass, 6 by 12 inches, with a steel spatula. A few of my experiments will best illustrate the test. Pure carbonate of lead and pure sulphate of baryta, both ground in oil, were employed; one-half grain of Eddy's dry lampblack, and four drops of boiled linseed oil, were mixed with—

	White lead.	Barytes.	Color produced.
1st.	100 grains	0 grains	light drab.
2d.	95 "	5 "	slightly darker drab.
3d.	90 "	10 "	" " "
4th.	66½ "	33½ "	" " "
5th.	50 "	50 "	" " "
6th.	33½ "	66½ "	" " "
7th.	0 "	100 "	black.

The specimens were submitted to six different persons successively, and all agreed in pronouncing them as above recorded. Five per cent may therefore be considered the limit of the accuracy of this test.

OXIDE OF ZINC.

As oxide of zinc is often mixed with the white lead, experiments were made to determine the effect of this pigment upon the tints. The best American zinc white was employed. One-half grain of lampblack, and four drops of boiled linseed oil were mixed with—

	White lead.	Oxide of zinc.	Barytes.	Gave color.
1st.	33-33	33-33	33-33	light bluish drab.
2d.	50	25	25	darker bluish drab.
3d.	50	12-50	37-50	still darker bluish drab.
4th.	50	6-25	43-75	" " "

The tint of the mixtures containing oxide of zinc was quite different from that obtained without the addition of this substance; while with white lead alone, or white lead and barytes, the color was a pure drab; the presence of six and a quarter per cent of oxide of zinc was sufficient to communicate a very decided bluish tint. I think as little as two per cent of oxide of zinc would make itself apparent in this way. This difference in tint makes it a little difficult to decide between two samples of adulterated white lead when one does, and the other does not contain oxide of zinc, as between tints so different in character, it is not easy to decide which is the darkest. In doubtful cases, however, this difficulty may be overcome by adding to both samples the same weighed quantity of oxide of zinc, say ten grains to each.

The colors communicated by the lampblack will then be of the same bluish tint, differing merely in intensity.

The only practical objection to this method of testing will arise from the difficulty of weighing half a grain of lampblack with sufficient exactness.

In my experiments, a chemical balance, which shows the thousandth part of a grain, was employed. The practical painter, however, will have no difficulty in applying this test with sufficient accuracy, if he will weigh out in ordinary scales, say 100 ounces (6½ lbs.) of each sample to be compared, adding to each half an ounce of dry lampblack and an equal quantity to each sample of boiled linseed oil. After mixing the lead, black, and oil together, *very thoroughly*, spread each sample on glass, wood, or other smooth surface, as nearly alike as possible, when the difference in depth of color, produced by the black, will determine the comparative value or body of each sample.

The sample *most discolored* will have the *least body*, and that *least discolored* the *most body*.

Another very simple test for determining the comparative value of *any white paint* ground in oil, was suggested by the same person—the correctness of which I have fully demonstrated—namely, weigh out, say 100 grains of each paint to be compared, add three drops of linseed oil to each, and spread them with a steel spatula on sheets of glass, 6 by 12 inches, as nearly as possible in the same manner. Place the samples thus prepared between yourself and the light, and you will have no difficulty in deciding which is most opaque. The sample which has obscured the light the most, or appears the darkest when held between yourself and the light, must have the greatest body or covering capacity.

CONCLUSION.

After having made a great number of experiments with these tests, I am satisfied that when they are applied with ordinary intelligence, they will not fail to determine the comparative value of the different grades of white pigments. I would advise every person who makes use of these tests to begin by preparing a series of standard plates for comparison,

selecting samples of paint obtained from the most reliable makers.

The East River Bridge.

The Government Commission, appointed to examine into the feasibility of the East River Bridge, has accomplished its task, and has approved all the calculations of Mr. Roebling, the engineer, regarding it. Authority will doubtless be given to begin the work on the return of the Commissioners from a visit to the suspension bridges at Cincinnati, Pittsburgh, and Buffalo, when they will present their report.

The first operations, says the *Evening Post*, will be upon the Brooklyn side, near the Fulton Ferry, where excavations will be made, ninety-seven feet, down to the rock upon which the foundations of the abutment towers will be laid. Digging on the New York side will immediately follow, near Pier 29, East River. Rock is there found at one hundred and seven feet, and is of the gneiss description generally found on Manhattan island.

The new bridge will be a striking and graceful feature of the surrounding scenery. Its proportions will be colossal. The entire length will be 5,862 feet, or about a mile and one-ninth, these figures may vary slightly when the termini become finally settled. The New York terminus will either be on Chatham street, opposite the Register's office, or in Chatham Square. The terminus in Brooklyn will be near the junction of Main and Fulton streets. The structure will thus overtop many houses which are situated upon the slope toward the river on each side. It will be suspended in three openings, two of which will be on land, and one, of 1,600 feet, over the water. The floor will be both fire and water-proof, and will serve as a roof to the houses and stores beneath. Its width will be 80 feet within the railings, equal to Broadway, and will be divided into five spaces, marked by six lines of iron trusses, independently of a sidewalk of six feet on each side.

As the new bridge will weigh 3,483 tons, being far more than twice as heavy and wide as any other structure of the kind in existence, the jar upon it will be scarcely perceptible, and the most violent winds will be powerless against it. Its weight, in the daytime, will be perpetually augmented by more or less cars, animals, and human beings. The maximum weight of these, if covering the entire surface, would be 1,270 tons, but an average of about 400 tons may be calculated on. Two passengers train of cars, upon steel rails, will run backward, and forward over the bridge alternately. They will be attached to an endless wire rope, propelled by a stationary engine on the Brooklyn side. Their speed may be at twenty or thirty miles an hour without injury to the structure. The height of the bridge, above high tide, will be one hundred and thirty feet, and vessels, the upper masts of which exceed that measurement, will be required to lower them on passing, which can be easily done. Prominent features of the work will be the towers on each side of the river. Their length at the base will be one hundred and thirty-four feet, and extreme width fifty-six feet. Their height to the roof will be two hundred and sixty-eight feet, at which point the length will be reduced to one hundred and twenty feet, and the width to forty feet.

The charter of the company does not provide for the opening of new streets in the neighborhood of the bridge, nor for other improvements. It is suggested by the architect that one or more blocks between William and Rose, or between Rose and Vandewater streets, should be turned into market halls. A market, he also thinks, might be built in James street, next to the anchorage in Brooklyn.

The estimated cost of the bridge is to be \$6,675,357, without the purchase of real estate on either side. It will, perhaps, be nearer \$7,000,000. Of this, \$5,000,000 have been raised—\$3,000,000 by the Brooklyn Common Council, \$1,500,000 by that of New York, and \$500,000 by private subscription. When the work will have become far advanced, through the expenditure of the \$5,000,000 it will be easy to issue bonds for the remaining sum needed.

The Union Ferry Company are now transporting forty million persons annually across the East River. The travel by horse-railroad cars in this city is over one hundred millions a year. It is thought that the certain communication, in all weathers, from Brooklyn, afforded by the bridge, will cause a vast influx of residents to Long Island, in preference to New Jersey, and that in 1880 the amount of passengers to and from Brooklyn will approach one hundred millions a year. The traffic upon the bridge will in no wise injure the shore travel of the ferry boats. It will simply prevent an increase of their number, and an additional obstruction to the shipping of the river.

The Earliest American Engraver.

Mr. Nathaniel Hurd was undoubtedly the first American engraver. Mr. Hurd was born in Boston, Mass., on the 13th of February, 1730. In Buckingham's *New England Magazine* appeared a series of articles on "Early American Artists and Mechanics," the first number of which (Vol. 3, July, 1832) was devoted to an account of Mr. Hurd, accompanied with a portrait. This writer says: "Among our seal cutters and die engravers and engravers on copper was Nathaniel Hurd. His grandfather came from England and settled in Charlestown. He died in that town in 1749, aged 70. His son Jacob married the only daughter of John Mason, of Kingston, in the Island of Jamaica, and died in the year 1758. He was the father of Nathaniel Hurd, who is the prominent subject of this memoir."

Hurd was a real genius. To a superior mode of execution he added a Hogarthian talent of character and humor. Among other things of his, he engraved a descriptive representation of a certain swindler and forger of bills, named Hudson, a for-

eigner, standing in the pillory. In the crowd of spectators he introduced the likenesses of some well-known characters, which excited much good-natured mirth.

The following is an entertaining account of this print:

"In the year 1672 there appeared in Boston a curious character, who called himself Doctor Hudson. He gave out that he was a Dutchman, that he was possessed of a large fortune, and that he was traveling for his amusement. He was dressed very gayly, tried to push himself into genteel company, and, though rather expensive in his appearance, he showed but little money and displayed no resources. He was well watched. After sometime, a fellow was detected in putting off a note purporting to be from the Treasurer of the Province, which proved a counterfeit. His name was Howe; he confessed he was a partner in villany with Doctor Hudson, and that they had been privately engaged in making up a number of the province notes, which were in high credit in this and the neighboring provinces, and sold readily at an advanced price. The doctor was also taken into custody. They were tried and convicted; Hudson was ordered to the pillory, and Howe to the whipping post. The execution of their sentence was accompanied by the collection of an immense crowd, and immoderate exultation.

"Hurd immediately put out a caricature print of the exhibition, which excited much attention. Hudson was represented in the pillory, and at a short distance was Howe, stripping, near the whipping post. The devil is represented flying towards the doctor, exclaiming, 'This is the man for me.' In front of the print is the representation of a medallion, on which is a profile of Hudson, dressed in a bag-wig, with a sword under his arm (as he generally appeared before his detection) partly drawn from the scabbard, with the words 'Dutch Tuck,' on the exposed part of the blade. Round the edge is 'The true profile of the notorious Doctor Seth Hudson, 1762.'

"In an obituary notice of Mr. Amos Doolittle, of New Haven, Conn., published in *Silliman's Journal of Science and Arts* (Vol. XXII., page 183), April, 1832, it is claimed that he was 'the first person who engraved on copper in this country.' This notice states that his first attempt was a print of the Battle of Lexington, after a drawing by Earl, in 1775, which was only two years prior to the death of Mr. Hurd, as will be seen by the above date, eleven years subsequent to the likeness of Dr. Sewall. Paul Revere also engraved on copper some time before the earliest date claimed for Mr. Doolittle. There is a copy of a print engraved by Paul Revere in the Redwood Library, Newport, R. I., representing the massacre of citizens in Boston, on the 5th of March, 1770, which was issued the same year.

"In the art of line engraving Mr. Hurd was his own instructor, and had he lived to a more advanced age would doubtless have distinguished himself yet more in an art, in the exercise of which it is evident he took great delight, and for which it is equally manifest he possessed both taste and talent. He died 17th December, 1777, and was buried in the old 'Granary Burial Ground' in Boston."

Hydrogen as an Illuminating Gas.

In every process, chemical or mechanical, says the *Mechanics Magazine*, a certain amount of loss or waste of either material or power must take place. The results obtained by a chemical process never coincide exactly with the theoretical formula, nor, mechanically, can the work done, ever equal the power applied. An ignorance, or, what is worse, a culpable neglect of these fundamental principles, has led scientific fanatics to spend their time, money, and ultimately their lives, in a fruitless search after the impossible. The loss accruing to ordinary gas, from the very commencement of its manufacture, to the moment that it flows from the burners, as a source of illumination, is occasioned by both chemical and mechanical unavoidable imperfections. The latter is caused by leakage, owing chiefly to defective joints, unsound pipes, and the carelessness of those who are concerned in its manufacture and distribution. The former is due to chemical action solely, and could scarcely be prevented, which is not the case with the other sources of loss. About fourteen per cent may be taken as the average loss incurred in the manufacture and burning of ordinary gas, or that which represents the actual discrepancy between the theoretical and practical results. The composition of ordinary gas consists mainly of carbureted hydrogen gases, and as hydrogen itself possesses no power whatever of illumination or brilliancy, it is not, at first sight quite obvious what advantage results from its presence. Any one who has dabbled in elementary chemistry is aware that hydrogen gas, when tolerably pure, burns with a pale blue flame, emitting little or no light, but endowed with a very high temperature. At the same time, by causing its high temperature to act upon other bodies, such as platinum and lime, it develops a flame of great beauty and brilliancy. To a similar cause is due the illuminating properties of ordinary gas. The action of the high temperature of the burning hydrogen upon infinitesimal particles of carbon renders them incandescent, and imparts to the gas its powers of illumination. Hydrogen, therefore, destitute of brilliancy when pure, becomes possessed of that property when in mechanical combination with carbon; in other words, when it is carbureted. If it were possible to bestow upon hydrogen illuminating properties without carbureting it, as in the ordinary manufacture, the whole process would be rendered much simpler and more economical. It has been asserted that it would be found a great advantage to employ a much larger proportion of hydrogen in the ordinary gas than what at present prevails; in fact, to constitute it rather a hydrogen gas than that of which it is now composed. A very large proportion of hydrogen is lost in the manufacturing process, which might easily be preserved and utilized, resulting in the production of a gas of a superior quality. The

same may be stated with respect to other volatile and illuminating ingredients, including the paraffine and benzene, which for the most part are left in the bye products. Were hydrogen more carefully sought for and preserved in the manufacture of gas, the volume would be considerably increased, in addition to a greater purity being imparted to the product. It is notorious that the ordinary gas, in many of the smaller towns, is so impure, and possessed of so small an illuminating power, that many persons refuse to have it laid on their premises. A gas composed mainly of hydrogen would be free from most of the noxious and disagreeable properties unquestionably possessed by the present great source of public illumination, but until it can be demonstrated that a better gas can be supplied at the same rate, we shall, as usual in such matters, stick to the old plan of manufacture.

Animalization of Vegetable Fabrics.

In the older theories of dyeing, it was held that the animal tissues of wool and silk absorbed and retained colors more readily than the vegetable tissues of cotton and linen, by virtue of some peculiar animal substance they contained. As a consequence of this theory, attempts were made to communicate some animal principles to vegetable fabrics, with a view to improving their powers of receiving colors. The use of cow dung in dyeing madder goods; the use of sheep's dung and bullocks' blood, and urine in turkey-red dyeing, were explained, upon the supposition that they animalized the fabric in some way or other. The present view of animalization is, that it is not possible to animalize a fabric in any other way than by actually depositing upon it the animal matter in question, and that any increased facility for taking colors thus communicated, is effected by the animal matter itself held on the fabric, and not by any new property of the fabric itself. Thus, if a piece of calico is steeped in a solution of albumen, dried, and then steamed or plunged into boiling water, the albumen is fastened upon the cloth, and such cloth is then capable of receiving colors from picric acid, sulphate of indigo, magenta, archil, and other coloring matters, which previously had no affinity for the cloth. But it is impossible to look upon the albumen in any other light than as a kind of mordant acting as an intermediary between the color and the calico, differing, however, from ordinary mordants in some essential particulars. Beside albumen, the animal matters called casine and lactarine, possess similar properties, and have been tried on a large scale, but without any marked success, as mordants or bases for some of the colors, which are not attracted by the ordinary metallic mordants. The increased affinity for colors given to calico by oil, could not correctly, under any view, be called animalization, since the oils are all vegetable oils; but in fact there appears to be a considerable analogy between this case of mordanting and that by coagulable animal matters.—*Dictionary of Dyeing and Calico Printing*.

A Colony of Insane People.

Prof. Griesinger, in his work on "Mental Pathology and Therapeutics" says: "A colony of the insane has been formed in the remarkable Belgian village of Gheel, in which, for several hundred years past, lunatics have lived together with the inhabitants, and even resided in their families. In former times people frequently resorted thither to supplicate the aid of Dymphne, the patron saint of the insane, although people are seldom in the habit now of consulting her oracle. Out of a population of about 9,000, it has from 900 to 1,000 inhabitants who are insane. The lunatics enjoy an amount of pleasure and freedom which never could be permitted them in an asylum. All who are capable of it share in the mechanical or agricultural employments of the sane. The treatment in the main, is very mild, and restraint is never made use of without previously consulting a physician. Suicide is rare, and the general physical health so good that in 1838 two of the patients reached upwards of 100 years of age. Owing to the peculiar situation of Gheel, escape by the patients is difficult. With all its advantages, it has undoubted drawbacks. But the experiment at Gheel has proved that the greater number of the insane do not require the confinement of an asylum; that many of them can safely be trusted with more liberty than those institutions allow; and that association in family life is very beneficial to many insane patients."

Planters, Manufacturers, and Mechanics' Association of the State of Mississippi.

The above association is a branch of the National Manufacturers' association. We are indebted to Mr. Chas. H. Hale, of Wesson, Miss., for a copy of the proceedings of this society from Oct. 10, 1868, to Jan. 20, 1869. It contains several able addresses, and other interesting matter, and shows that the people of Mississippi are getting into harness and pulling together intelligently for the advancement of the industrial interests of that State.

A State Fair will be held at Jackson on the fourth Tuesday in October, and as we presume many Northern manufacturers will be interested, we call attention to it. We are not precisely informed who may be addressed in regard to it, but presume letters addressed to the treasurer of the above association (Joshua Green, Esq.), at Jackson, will be proper.

VENTILATION.—The Massachusetts Medical Society offers a prize of fifty dollars for the best dissertation, worthy of a prize, which shall describe, in plain language, briefly, "An effective and ready method of ventilating sick-rooms—one that can be put in operation at once, at the moment needed, with least difficulty and expense, in houses of ordinary construction." The committee of award consists of five well-known physicians; namely, Morill Wyman, George H. Lyman, Henry G. Clark, Edward H. Clarke, and William Read.