an impression, in the plastic state, from a plaster in relief. The bulk of the tiles is made up with coarse clay added in a frame, and this is solidified in a screw press. Then comes the filling-in of the design, which the maker does by spreading the colored clay in a creamy or slip state on the indented surface. After a few days' evaporation the surface is scraped or planed, and the tile passes successively to the drying house and the oven. The colors desired in encaustic tiles are sometimes those given by the clay in ordinary treatment, sometimes they are obtained by staining with manganese, cobalt, etc. The products of this branch of manufacture are much admired.

The fine ornamental work of various shapes and colors known as terra cotta has of late been much used, especially in the facing of public buildings, and with fine effect.—*American Pottery and Glassware Reporter.*

AGRICULTURAL INVENTIONS.

Mr. Thomas Haxton, of Gore, Otago, New Zealand, has patented an improved harrow, which is constructed of sections of metal, each section made in one piece, bent horizontally in triangular form, with eyes at the ends of the arms, and also bent vertically below the eyes to form teeth, whereby, when the sections are linked together, a complete flexible harrow is made.

An improved harvester finger bar has been patented by Mr. Abner D. Dailey, of Riley, Ind. This invention relates to improvements in the finger bars of that class of harvesters in which the cut grain falls upon an endless belt or carrier in rear of the cutters, which belt conveys the cut grain to an elevator, and thence to a grain binder. In this class of harvesters, as now constructed, the endless belt or carrier is arranged above the cutter bar, and has its front edge a short distance in rear of the cutter bar, whereby an open space is left between the endless belt and the back of the cutter bar, into which short grain and cut weeds fall, causing the loss of the short grain and the clogging of the belt by the weeds and short grain winding around the belt rollers. To remedy these defects is the object of this invention. The finger bar is composed of a metallic plate bent so as to form upper and lower horizontal flanges parallel with each other, the frame of the endless belt being secured between the flanges and fingers bolted to the upper flange, which upper flange is also provided with slots for the passage of the endless belt in its revolution, whereby the outer edge of the endless belt revolves in contact with the back of the cutter bar, and the upper face of the belt is flush with the cutter bar and carries the butts of the wheat as fast as the heads, thus bringing the stalks straight to the elevator.

An improved cornstalk cutter has been patented by Mr. Alexander Cherry, of Saratoga, N. Y. The invention consists in a cornstalk cutter having two parallel runners with downwardly projecting plates attached to their sides and two outwardly inclined side bars carrying laterally projecting knives.

Silk Raising at the South.

The possibility of producing silk with profit is beginning to agitate the people in some parts of the South, and visions of prospective wealth are giving an impetus to the enterprise. A writer in the Louisville *Courier Journal* says:

Silk culture in the South can be carried to the greatest success, owing to the mild climate and the long seasons of good weather. Silk culture can be managed successfully and profitably in the South in rooms of all sizes and kinds, so they are dry and airy. I have sent samples of raw silk grown here in Memphis by myself and friends to Lyons, France, and the reports of it are the highest, commanding $11 a pound of twelve ounces. The French of Lyons and Marseilles express their astonishment when informed that we have mulberry trees in great quantity without trouble, even whole forests of them.

One person raising silk in the South can make as much as five persons can with cotton, and with an outlay of only a few dollars in starting. I have, at great expense and labor, prepared an exhibit of silk raised in the South for the Atlanta Exposition, but have been delayed in getting it placed in position, owing to a severe spell of sickness recently.

A number of capitalists of Memphis, together with myself, are to establish a filature of silk, also a moulinage for reeling and preparing the silk raised in the South for the looms in the East. To give your readers an idea of the silk industry in the United States at present, I give an article from a journal devoted to the silk industry. It says:

"No industry has had more wonderful growth in this country than the manufacture of silk. There are now invested in this industry about $18,000,000; the total product of the silk looms annually is $27,000,000, and there are 18,000 operatives, receiving in wages annually $6,000,000. In the town of Paterson, N. J., there are 32 silk-weaving mills, having 74,000 throwing spindles, 23,000 braiding spindles, 730 power looms, 563 hand-weaving looms, and employing enough people to make a good sized city. The first silk mill was established there in 1840. The demand for raw silk is so great in this country (United States) that most of the raw silk has to be imported from France and to be woven by the looms in our country."

I have prepared, by careful and laborious work, a tabulated form of each day's work to raise silk worms, and which, if followed by your readers who raise silk in the future, will insure certain success.

Any and all kinds of our mulberry trees will produce good silk. Even the osage orange, that grows so plentiful, will make good silk.

I desire to lay before your readers, in the following tabulated statement, the daily work necessary to raise 40,000 silk worms, which will produce 1,000 pounds silk cocoons, worth from $2 to $250 per pound:

Days.	No. of lb. leaves con.	No ft. space occupied.	Operations for each day.
1st	¼	1	Removed worms as hatched to trays.
2d	½	2	Same.
3d	1½	2	Same.
4th	2	2	Same.
5th	2	2	Same.
6th	2½	3	Change litter and increase space.
7th	3	4	Same.
8th	5½	5	Same.
9th	8	8	Same.
10th	8	8	Same.
11th	8	19	Change litter and increase space.
12th	8	20	Same.
13th	12	20	Same.
14th	24	20	Same.
15th	8	24	Same.
16th	24	24	Same.
17th	34	45	Change litter and increase space.
18th	24	48	Same.
19th	34	48	Same.
20th	36	50	Same.
21st	3	50	Same.
22d	30	75	Change litter and increase space.
23d	45	75	Same.
24th	75	75	Same.
25th	98	75	Same.
26th	130	100	Change litter and increase space.
27th	160	100	Same.
28th	180	102	Same.
29th	Cease eating; ready to spin silk cocoons.		

In three days they finish their cocoons and then cut out, transform into a silk butterfly, lay from 800 to 1,000 eggs, and die.

One person can tend to 40,000 silk worms, but two persons can attend to 120,000, and raise 3,000 pounds of silk cocoons.

The silk worms eat night and day incessantly. They must not be crowded too closely together; the young worms must not be placed where the larger worms are eating, but must be kept separately.

Silk eggs must be wintered where they are to be fed and raised, and must be at their future home before the 1st of January preceding March. If shipped later in the season they are liable to be hatched in transit, and having no leaves, will die.

The silk worm rooms must be dry, provided with shutters or blinds, to be closed at night and during thunderstorms, especially when the worms are spinning their silk.

The eggs must be kept from mice, crickets, and ants, for they will feast on them.

In answer to many inquiries about the kind of mulberry leaf required, etc., I will say that any kind of mulberry tree will produce silk, but the white mulberry tree produces the finest silk. I have a limited supply of acclimated silk eggs, and shall in the future devote my attention principally to raising silk eggs in order to get a supply for your numerous readers.

In answer to the many letters which I have received asking what kind of a house is necessary, etc., I answer that any kind of a house, so it is dry and airy. They can be raised in rooms of all kinds and sizes—even in the cotton gin-houses on plantations, etc.

The attention of your readers is specially called to the urgent necessity of planting out young mulberry trees.

The Great Bell for St. Paul's.

Recently Messrs. Taylor, at Loughborough, have been testing the great bell which has been manufactured by that firm for St. Paul's Cathedral. Dr. Stainer, the organist of St. Paul's, speaks of it as follows in a letter recently published:

"'Big Ben' sinks into comparative insignificance by the side of 'Great Paul,' now lying comfortably, mouth upward, in the foundry of Mr. Taylor, of Loughborough. She (for I fear 'Great Paul,' as a bell, must, like all other bells, be considered feminine) will take her rank among the six or eight heaviest bells in Europe. At present her position cannot accurately be assigned, as she has not yet passed the scales; but it will probably lie between the great bell of Olmütz, weighing 17 tons 18 cwt., and that of Vienna (cast in 1711), weighing 17 tons 14 cwt. Three furnaces, one of which was specially built for the purpose, poured out more than 20 tons of molten metal into the gigantic mould of 'Great Paul,' and after writing off 43 cwt. as 'overplus' and 8 cwt. as 'waste,' this will leave 350 cwt. actually in the mould, or a weight of 17½ tons. This mass of metal, consisting of pure tin and copper in due proportions, was about eight and a half hours in course of melting; it was placed in the furnaces in the afternoon of Wednesday, the 23d of November, and was pronounced fit for use at half past ten at night. Four minutes after the rush of molten metal the mould was full, and 'Great Paul' came into existence in one of those deep 'pits' so mysterious to lookers-on. It was not until the evening of Tuesday, the 29th, that the heat had sufficiently abated to allow the men to hoist out of the pit the mould and bell in their 'case.' This cast iron 'case' had an all-important duty to perform: it had to resist the enormous strain of such a weight of metal when forcing itself impetuously into the mould; and so, in order to prevent a bursting asunder of the mould, it was made strong enough to bear a pressure of 200 tons. The upper portion of the case weighed 14 tons; the lower plate on which it rested, 7 tons. Including clamps and bolts, it is probable that the whole weight of this huge box was not far short of 25 tons. It may be easily imagined how great was the anxiety of all when the case was being taken to pieces, the clay mould broken up, and the mighty bell, bit by bit, exposed to view. The casting proved to be as smooth and delicate in surface and outline as if it had been a little 'treble' of 5 cwt. I have to-day, in conjunction with Mr. F. C. Penrose, been examining the bell and testing its tone. The 'skin' of the casting showed no flaw of any kind whatever; and when the tone was produced by swinging a heavy ball of iron against the sound bow a musical note boomed out which was impressive beyond description. The dimensions of the bell are as follow: Height, perpendicular (from lip to top of cannons), 8 feet 10 inches; diameter (from edge to edge of lip), 9 feet 6¾ inches; thickness (of middle of sound bow), 8¾ inches, or about one-thirteenth of the diameter. The note is E flat, the upper partials B flat, E flat and G being just audible with the sonorous ground tone. The general appearance of the bell is handsome, and all campanologists should, if able to get to Loughborough, take a walk round here, and also have an eye to the many valuable appliances which Mr. Taylor has brought together for the perfecting of his art. The cost of the bell and hoisting it into its place in the upper part of the northwest tower will be about £3,000, a portion of which has already been contributed. It has been decided to use the bell for the first time on Easter Sunday next, when I shall be surprised if Londoners do not realize the fact that 'Great Paul' is worthy alike of their ancient city and splendid cathedral."

Phytocollite, a New Mineral from Scranton, Pa.

This name has been given, says H. C. Lewis (Proc. Amer. Philos. Soc.), to a very curious, jelly-like mineral recently found near the bottom of a peat bog at Scranton, Pa. An excavation for a new court house had cut through a peat bog, below which was a deposit of glacial till. Near the bottom of the bog, in a carbonaceous mud, or "swamp muck," there occur irregular veins, of varying thickness and inclination, filled with a black, homogeneous, jelly-like substance, elastic to the touch. This substance becomes tougher on exposure to the air, and finally becomes as hard as coal. When thus dried, it is brittle, has a conchoidal fracture and brilliant luster, and closely resembles jet. It is nearly insoluble in alcohol and ether, but is entirely soluble in caustic potash, forming a deep reddish-brown solution, from whence it can be again precipitated on the addition of an acid. It has a specific gravity of 1·032, and burns with a bright flame. After having been dried at 212°, it has the following composition, according to the analysis of J. M. Stinson:

		or without ash,	
C	28·989	C	30·971
H	5·172	H	5·526
N	2·456	O + N	63·503
O	56·983		
Ash	6·400		100·000
	100·000		

yielding the empirical formula $C_{10}H_{22}O_{16}$.

In its mode of occurrence and in general appearance, this substance closely resembles Dopplerite, but differs from that mineral in burning with flame and in its composition. Another jelly-like substance from a Swiss peat bog, differing both from Dopplerite and from the Scranton mineral, has been described by Diecke.

It is now proposed to group all these jelly-like minerals, produced by the decomposition of vegetable matter, under the one generic name of *Phytocollite* (Gr., *phuton, kolla,* "plant jelly") of which the three minerals now known would be varieties.

Special interest is attached to these substances, in that they illustrate the first step in the transformation of peat into coal.

Test for Gold.

There is a simple method for the detection of gold in quartz, pyrite, etc., which is not generally described in the mineralogical text books. It is an adaptation of the well known amalgamation process, and serves to detect very minute traces of gold.

Place the finely powdered and roasted mineral in a test tube, add water and a single drop of mercury; close the test tube with the thumb, and shake thoroughly and for some time. Decant the water, add more and decant repeatedly, thus washing the drop of mercury until it is perfectly clean. The drop of mercury contains any gold that may have been present. It is therefore placed in a small porcelain capsule and heated until the mercury is volatilized, and the residue of gold is left in the bottom of the capsule. This residue may be tested either by dissolving in aqua regia and obtaining the purple of Cassius with protochloride of tin, or by taking up with a fragment of moist filter paper, and then fusing to a globule on charcoal in the blowpipe flame.

It is being shown that gold is much more universally distributed than was formerly supposed. It has recently been found in Fulton and Saratoga counties, New York, where it occurs in pyrites. It has also been discovered in the gravel of Chester Creek, at Lenni, Delaware County, Pa. In one of the Virginia gold mines wonderful richness is reported, $160,000 worth of pure gold having been taken from a space of three square feet.

A Sheep-Eating Parrot.

A singular bird has recently been added to the collection in the Zoological Gardens, London. This is none other than a carnivorous parrot, whose love of animal flesh manifests itself in a very decided predilection for mutton. There are two things which, to the naturalist, are remarkable in connection with this bird. First, it is, in respect of this flesh-eating propensity, an exception to the whole family of parrots, which are frugivorous, living on fruits, seeds, leaves, buds, and the like; and second, this carnivorous taste is not a natural but an acquired possession, the species of parrot in question having been till a few years since frugivorous, like others of its family.

This curious bird is the kea (*Nestor notabilis*) or mountain parrot, and comes from New Zealand. The general color of its plumage is green; its length from point of bill to extremity of tail is twenty-one inches; its bill is about two inches long, the upper mandible being curved and very strong. It inhabits the higher wooded glens and recesses of the mountainous districts of New Zealand, and, like the owl, is generally nocturnal in its habits. The kea was first made known to science in 1856.

In the time of Maori rule, the bird was as innocent and harmless in its habits, as respects its food, as any others of the parrot family; and it was not till the higher tracts of country were utilized by the early settlers as runs for sheep, that the kea was tempted to desert its fruit-eating habits and to join the destructive army of the carnivora.

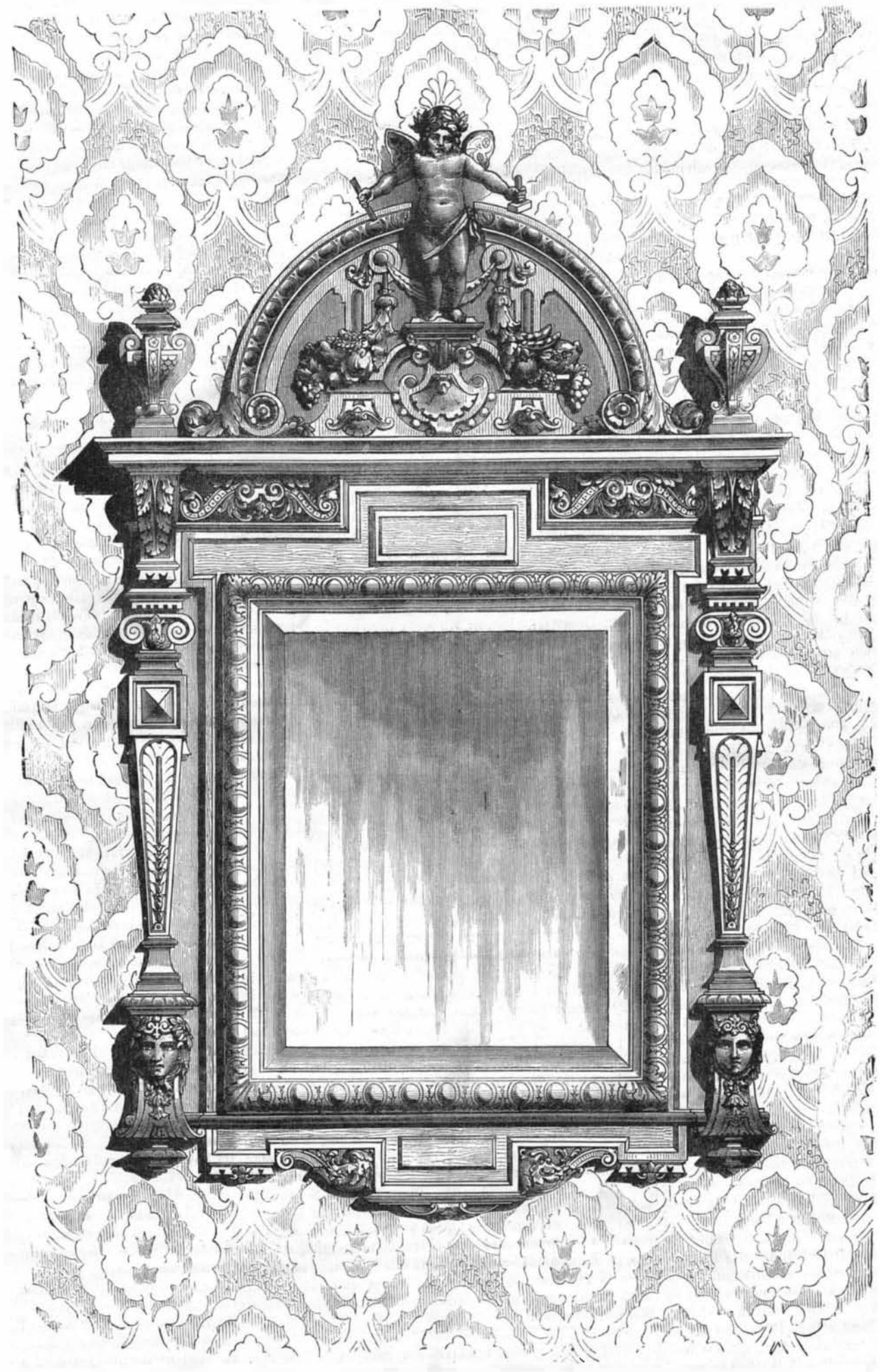
About 1868, it was noticed at the sheep-shearing season on the upland runs that many sheep were suffering from sores or scars, more or less recent, on the back, immediately in front of the hips. Curiously enough, it was observed that in all the animals so injured the wound was in precisely the same place in each—fairly above the kidneys. In some cases (says Mr. Potts, who has contributed an article to the *Zoologist* on the subject), the part affected had a hard dry scab, or merely a patch of wool stripped off; others showed a severe wound, in some instances so deep that the entrails protruded. The animals so injured were invariably those that were in the best condition; and many discussions ensued as to what could be the cause of this singular state of things. At last a shepherd gave it as his opinion that the injury was inflicted by a kind of parrot, rather a tame sort of bird, that was to be met with in the higher ranges; but the shepherd's opinion was only laughed at. Yet the shepherd, after all, was found to be right.

In connection with the stations on sheep-runs in New Zealand, there is a meat gallows, where the carcasses of sheep killed for food are kept; and it was observed by the shepherds that the keas were in the habit of visiting the gallows and breaking off bits of mutton-fat with their strong beaks. Soon afterward, one or more hands actually saw a parrot on the back of a sheep plucking and tearing the wool and flesh on a precisely similar spot to that where so many had been found to be fatally wounded.

There was no doubt about the keas being the offenders, and means were at once taken to have their numbers reduced. Since then, a mortal enmity has existed against them on the part of the shepherds; and justly so, as it is found that from three to five per cent of every flock is so wounded or killed. In some individual instances, the ratio of destruction has been much higher. On one station on the Matatapu, out of a flock of twenty Lincoln rams, nineteen were within one month killed by these parrots. On another run, a flock of three hundred and ten strong young wethers were, within a period of five months, so seriously injured by the keas, that at the end of that time only one hundred and five remained alive. In consequence of this destruction, men were engaged to kill the bird at a shilling a head; and these men, taking advantage of its nocturnal habits, now range the mountains at night, lighting fires to attract their game. In the daytime they rest and prepare the skins for sale. But the kea, with the cleverness and cunning of its tribe, has grown very shy and wary, and knows very well, when it sees a man carrying a gun, what he is likely to do with it.

Mr. Potts gives a striking account of the cruelty and rapacity of the keas in the prosecution of their horrible taste for sheep fat, the part especially liked by them being the fat that surrounds the kidneys. With this view they do not hesitate to tear open the animal's flesh till they arrive at these organs, after tearing out the fat of which, they leave the poor animal to linger on or die in excruciating agony. "Sheep," says Mr. Potts, "while being got out of snow drifts, are often mortally hurt by the attacks of keas; especially are the birds prone to molest those carrying double fleeces, as though they knew how firm a foothold they could maintain with their gripe. When one of these sheep, temporarily exhausted with its exertions in toiling through deep snow under the burden of two years' growth of wool, breaks off from the mob and leaves the track, desperately floundering into deeper snow wreaths, a flock of parrots, ever watchful as they hover round, soon perceive their opportunity for mischief; they alight close to the spot where the sheep, unconscious of approaching danger, stands gazing fixedly in a state of helpless stupidity; gradually hopping or moving toward the victim with some show of caution, one of the keas at last settles on the back of the sheep, which, terrified at the strange visitor that thus besets it, bounds away; the bird now rises only to alight again on the same place, and clutching into the wool with its sharp claws, retains its hold more firmly and tenaciously. In vain the tortured animal, in the direst agony, seeks to rid itself of its cruel persecutor, that boldly keeps its vantage; after running and struggling some distance, its efforts to escape become feebler; it is at length so hard pressed that in a few minutes it yields passively to the tearing and searching beak of the kea."

These repulsive flesh-devouring propensities may have been acquired through the bird being forced, in severe winters, to approach the stations in hopes of finding food, and there feeding on the flesh in the meat gallows, and thus gradually forming a carnivorous appetite of such strength, that its former frugivorous tastes are entirely destroyed, and flesh now forms its sole food. The kea in the Zoological Gardens was struck down while it was in the act of attacking a sheep; but the man did not succeed in capturing it till it had torn his clothes in many places and severely lacerated his hands. Its food consists mainly of mutton, raw; it does not care for cooked meat, but will take it if very hungry. Occasionally it will take beef, and is fond of pork. But its vegetarian tastes seem almost completely eradicated, for it will not touch bread, though it likes the seed of sow-thistle. It is altogether a remarkable and curious bird.



SUGGESTIONS IN DECORATIVE ART.—LOOKING GLASS FRAME IN OAK, DESIGNED AND EXECUTED BY FLACHAT AND COCHET, LYONS—[From the *Workshop*.]

Disease from Irrigation.

The question of irrigation in the West has been complicated by an alarming increase of malarial diseases in the irrigated districts of Southern California. It is said that where the

desert lands of Fresno, Tulare, and Kern counties have been reclaimed by irrigation the progress of fever and ague, previously unknown there, has been rapid and general.

Various suggestions of remedies have been made, one idea being that if a system of thorough drainage should be combined with that for irrigation, it would mitigate the evil. Some benefit seems to be derived from having rooms used as dormitories at a considerable elevation from the ground, and huts raised on long poles have been tried, while one wealthy vine grower has built a three story dwelling. Others seek immunity by living in villages at a distance from their farms and the irrigating ditches; and perhaps this practice will become universal. As showing that the question is not a local one, confined to the counties named, it is mentioned that the same experiment was tried. with similar results, in the county of Yolo, a hundred miles north of San Francisco. A large ditch led the waters of a small stream across a number of farms, and in a few years ague became common, families began moving away, and, as irrigation was not indispensable to cultivation in this instance, the ditch was finally closed.

Pink Eye in Horses.

Dr. C. E. Page writes to the editor of the Boston *Medical and Surgical Journal* as follows:

This disease in horses is one of the varieties of catarrhal or influenza colds, so-called, prevalent in this climate among human beings, and springs from the same cause, namely, excessive, over frequent, or otherwise injudicious eating. The custom of working or exercising horses directly after eating; of feeding them directly after hard work, and before they are thoroughly rested: baiting at noon, when both these violations of a natural law are committed; these are the predisposing causes of pink eye, and of most diseases that afflict our horses. The symptoms denominated pink eye are not indicative of dangerous disease, unless feeding is kept up; but if it is, then pneumonia, which is merely an aggravation of the original disease, is very likely to result. Keep the horse quiet, dry, warm, and in a pure atmosphere. The nearer out-door air the better, and *stop his feed entirely* at the first symptom of disease, and he will speedily recover. As prevention is better than cure, horsemen will do well to heed the hint here given and keep their creatures from contracting this or any other ailment. It has been demonstrated in tens of thousands of cases, in family life, that *two meals* are not only ample for the hardest and most exhausting labors, physical or mental, but altogether best. The same thing has been fully proved in hundreds of instances with horses, and has never in a single instance failed, after a fair trial, to work the best results.

An hour's rest at noon is vastly more restoring to a tired animal, whether horse or man, than a meal of any sort, although the latter may prove more *stimulating*. The morning meal given, if possible, early enough for partial stomach digestion before the muscular and nervous systems are called into active play; the night meal offered long enough after work to insure a rested condition of the body; a diet liberal enough but *never excessive*; this is the law and gospel of hygienic diet for either man or beast. If it be objected that these conditions cannot always be fully met in this active work-a-day world, I reply, let us meet them as nearly as possible. We can, of course, do no more than this; but we can come nearer the mark on the two-meal system than on three. I will add, *in parenthesis*, that the nervous disorder commonly known as "pulling" will yield readily to this principle of treatment. It makes the puller healthy; he is better nourished and therefore less "nervous;" and he will do more roading, and without excitement or profuse sweating. He is not made less ambitious by reason of reduced muscular power, but by reason of better digestion and assimilation —more *nourishment* and less *stimulation*. Horse dealers or others, whose business or pleasure depends on the plump appearance of their animals, regardless of the size of their muscles, who must have a horse fat if he is not fleshy, for style, may have to take the chances and feed three times a day; but of this I am by no means sure. I have never tried to fatten my horses, for I long ago learned that fat is disease; but I have always found that if a horse does solid work enough he will be fairly plump if he has two sufficient meals. Muscle is the product of work and food; fat may be laid on by food alone. But for perfect health and immunity from disease, restriction of exercise must be met by restriction in diet. Horses require more food in cold than in warm weather, if performing the same labor. In case of a warm spell in winter I reduce their feed, more or less, according to circumstances, as surely as I do the amount of fuel consumed. I also adopt the same principle in my own diet. The result is, that neither my animals nor myself are ever for one moment sick.

Milk Diet in Bright's Disease.

Since we know not at present any drug that possesses therapeutic value to any marked extent in this terrible and fatal disease, and since it is daily making sad havoc among human beings, and principally among that class who, by reason of their valuable public labors, are particularly necessary to the welfare of the world; therefore, it becomes a medical question of paramount interest that we should discover some potent method of combating this very prevalent disease. Some years since Carel first called attention to the treatment of Bright's disease by the use of a milk diet, and since then Duncan, as well as many other prominent physicians, have written on this subject. We have ourselves seen some remarkable results follow this treatment, while Dr. S. Weir Mitchell, of our city, is now quite an enthusiast on this subject. This method of treating a formidable disease has received sufficient distinguished indorsement to recommend it seriously to our notice. We would, therefore, ask all physicians who read this article to try this method of treatment, and to furnish us with their experience, which we will publish. The milk is used thoroughly skimmed and entirely freed from butter. To procure the best results, it has been advised that the patient shall restrict himself absolutely to milk, and continue the treatment for a long time. If it disagrees with the stomach (as it will in some cases), Dr. Mitchell advises that the patient be put to bed, and the treatment commenced with tablespoonful doses, to which lime water is added, until the stomach tolerates the milk, when from eight to ten pints daily should be taken, and absolutely nothing else. The sanction of such a distinguished physician as Dr. Mitchell forces us to seriously consider the merits of this treatment, and we trust to receive the experience of all readers of this journal who may have cases of Bright's disease to treat.—*Medical and Surgical Reporter.*

Effects of Atmospheric Electricity.

At a recent meeting of the California Academy of Sciences, Mr. C. D. Gibbes, C.E., remarked that when surveying during our north winds, in the San Joaquin valley, the electrical disturbance was so great as to cause the needle of his compass to fly up against the glass and become useless during the first part of the day when in the field; but that if he took the same compass into a warm moist room, it again acted normally. Engineers in Santa Clara and Calaveras counties report the same action and dip of the magnetic needle during the prevalence of our dry northers.

Dr. Harkness said the northers affected the human skin. They caused an uneasiness, which results in dog fights, runaway horses, cross dispositions, pallid faces, etc. Dry atmosphere is a perfect non-conductor, but all moist plants and animals, as well as men, then become so many miniature lightning rods. The nerves are at such times continually irritated by a constant succession of tiny blows, like telegraphic ticks, against the nerve centers. They contract and produce a congestion of the organs; the blood becomes turbid, while kidneys, liver, and lungs all suffer.

Dr. Henry Gibbons, Sr., thought this electric action more subtle than from any apparent mechanical evolution of electricity from friction of the passing wind over the surface of the earth. He said all persons felt cold, for it drove the circulation from the surface to the interior of the body, as Dr. Harkness so beautifully described twenty years ago. Its effect on certain diseases has been marked. The death rate has been claimed to increase at such times. He had a patient whose eyes always blinked and snapped during a north wind, even in a warm, moist room entirely protected from direct contact with the wind.

Dr. Harkness said we were always surrounded by electricity, but did not perceive it until its equilibrium was destroyed, when it became manifest. In some parts of India silk underclothing is necessary to comfort, at certain altitudes, during dry north winds, and in other parts no relief is found in this clothing.

Insanity in the United States.

After all the recent talk about the increase of insanity in this country it is encouraging to learn that we are not so crazy as some other nations. At the late meeting of the National Association for the Protection of the Insane and the Prevention of Insanity it was shown our insane number about 63,000, or 1 to 777 of the population. The ratio in England is 1 to 350, part due, perhaps, to the more thorough separation of the insane from the general population. By sections the ratio is in this country: In New England, 1 to 588 Middle States, 1 to 600; Western States, 1 to 850; Southern States, 1 to 1,100. The ratio to which we may look forward in the future is, in the opinion of Dr. C. F. Dana: In New England, 1 to 500; West, 1 to 600; South, 1 to 800. In 1881 there were 74 State and 34 private asylums. The cost of maintaining them was $12,000,000 a year. The needs of the insane are want of room in asylums, separation of acute and chronic patients and epileptics, improvement in the laws of commitment, more amusement and work for patients, and a separation of State asylums from political influence.

Whalebone.

Aside from its oil-yielding properties, the whale also serves man's needs by furnishing him with whalebone. This was once an important article of commerce, but the supply and demand have for many years been diminishing. The fact is the whale does not live "in the North Sea" as much as he once did, and the decline in the New Bedford oil business is reflected in a measure in the whalebone industry. As the supply fell off substitutes for the article were discovered. Steel takes the place of whalebone in umbrella manufactures, and the latter now finds its chief uses in the making of whips and corsets.

The preliminary preparation of whalebone is about as follows: When the raw bone is received the hair is first cut from the slabs. These are then soaked in water until they become soft, after which all the gum which adheres to them is removed by scraping. They now go to a steam box, where a workman straightens them with a knife. After polishing they are ready to be worked up into various forms. There are certain places where it is probable that no known material answers so well as whalebone, and it is said that a fortune awaits the inventor who devises an efficient substitute for it. Experiments, looking to this end, have been made with rawhide.

Since the decadence of the hoop-skirt fever the price of whalebone has declined very materially, but the price was at its zenith in the last century. The Dutch formerly obtained $3,500 a ton for whalebone, but since 1763 it has never commanded such high figures. In 1818 the price was $450; in 1834, from $530 to $545; and in 1841 it ranged between $1,080 for Southern to $2,550 for Northern bone. We learn that in the upper jaw of the whale are thin, parallel laminæ, varying in size from three to twelve feet in length, and that these are what are known as "whalebone." The quality which commands the highest price is above six feet in length, and is called "size bone." It is said that the Greenland whale furnishes the best bone. From the mouth of these huge creatures from 2,000 to 3,000 pounds are often taken.

NEW INVENTIONS.

An improved side-bar vehicle has been patented by Mr. Lafayette A. Melburn, of Denver, Col. The invention consists in a certain improvement in the class of side-bar vehicles, more particularly in buggies, which are constructed upon what is commonly termed the "Brewster" pattern. The springs that support the bodies of such buggies require to be made very stiff in order to have the requisite strength, and, being also short, they lack that degree of elasticity necessary to render the vehicle comfortable to the occupant when passing over ordinary roads. In attempts heretofore made to remedy this defect various so-called improvements have been made in the form and arrangement of the springs, but without the desired success, since the result has been a noticeable, if not striking, inelegance of appearance, and considerable addition to the cost and complication of structure of the buggy, besides lessened efficiency in use. This inventor has devised an improvement in the form and arrangement of the springs which overcomes the defect of the Brewster.

An improved station indicator has been patented by Messrs. William H Hackney, of Laramie county, Wyoming Territory, and Edward G. Hudson, of Lincoln, Ill. The improvement consists in the peculiar means for reversing the movement of the ribbon when wound up, for which purpose the inventors place an intermediate shaft between the two shafts carrying the belt or ribbon. This intermediate shaft has a cog wheel adapted to engage with cog wheels on the ribbon shafts alternately by the lateral shifting of this intermediate wheel, the wheels on the ribbon shafts being set in different planes to permit this action, and the intermediate wheel being shifted by the longitudinal movement of the shaft, which is held by a latch entering one of two circumferential grooves in the shaft.

Mr. Benjamin Day, of West Hoboken, N. J., has patented an improved vertically and laterally adjustable frame for holding a printing medium—for instance, such as the printing film for which Letters Patent were issued to the same inventor on the 22d day of April, 1879, and numbered 214,493. The invention consists in a frame having the printing film attached thereto, and provided with clamping devices for holding it, and which are detachably hinged to longitudinally and transversely adjustable blocks held in clamps on a vertically adjustable frame surrounding the stone or block, so that the swinging film-holding frame will rest on the block or stone.

An improved switch board for use in connection with annunciator or burglar alarms has been patented by Mr. Lambert F. Fouts, of Greenfield, Iowa. The several doors and windows of a dwelling, hotel, or other structure, or any other desired points, are connected in a closed circuit with a battery, an alarm, and the improved switch board, the latter having a pivoted button and fixed post for each door or point in the circuit. When a "break" is made—as, for instance, when a door is opened—it may be located by moving one or more of said buttons until the restoration of the circuit through branch wires connected with the aforesaid posts and the consequent arrest of the alarm give the required indications.

An improved inkstand, which closes itself automatically, and can be opened readily, has been patented by Mr. Charles De Roberts, of Albion, Neb. The invention consists in an ink well resting on a base, and provided with a lid or cover attached to the upper end of a bell crank lever pivoted in the base, the lower end of which bell crank lever rests on one end of a lever pivoted to the under side of the base, and provided at the other end with a knob projecting above the top of the base, which knob is depressed by the hand when the cover is to be raised.

The First Chinese Ironclad.

The first ironclad battle-ship of the Chinese navy was lately launched by the Vulcan Company, at Stettin, at the mouth of the Oder. The ship is called the Ting Yuen, or the Everlasting Peace, and is a turret corvette of the first rank, with compound armor of English steel and iron. Both turrets are armed with twelve-inch compound plates, and the four 30½ centimeter guns which they have can deliver broadsides simultaneously. On the deck, in addition, are eight other guns from Herr Krupp's foundry at Essen. The same company has a contract to build another ship of the same kind for China.