

Mrs. C. B. Cary

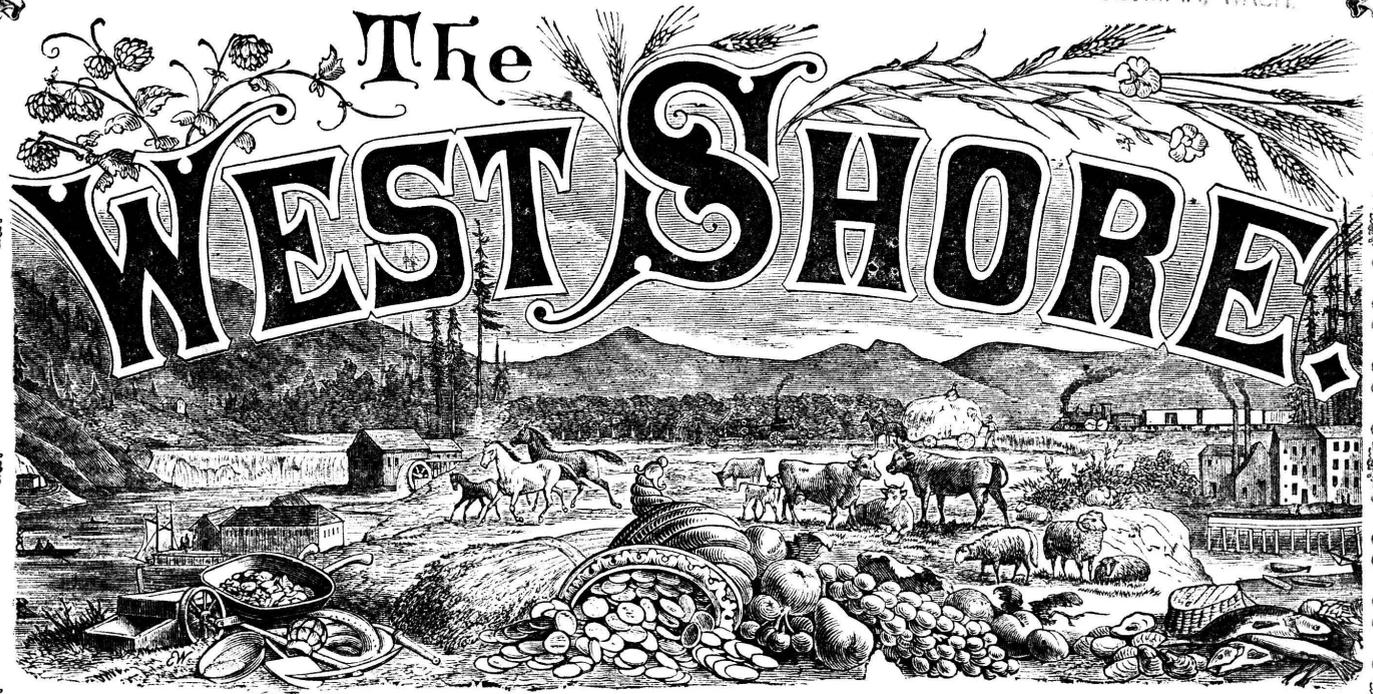
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THE WEST SHORE.

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OUR ENGRAVINGS.

The M. E. Church at Salem, Oregon, is, without a doubt, the handsomest in this State. It is built entirely of brick, and cost about \$35,000. Rev. I. Dillon is the minister in charge at present.

THE Territorial University, at Seattle, W. T., is located on a beautiful site of ten acres near the centre of the city, and on a sloping eminence overlooking the bay. The main building, a large, imposing, and well-built structure, was erected in 1862, at a cost of \$35,000. On the grounds are situated the President's residence, and a large boarding-house for young men. From the beginning, in 1862, a Territorial school, consisting of primary and higher grades, was carried on with varying

success until January, 1877, when from lack of funds, and other reasons, it was closed. In September, 1877, it was reorganized, without a primary department; and since then, under the Presidency of Prof. A. J. Anderson, it has grown and prospered till now, when it

has a Sopomore class, a third year scientific class, and graduating normal and commercial classes. The support of the institution comes from legislative appropriations, tuition-fees, and interest on a fund arising from the sale of lands donated by Congress for University purposes. Its current register

about one mile above the thriving and handsome town of New Westminster. The scenery in the vicinity is indescribably grand, and calculated to have a soothing effect on diseased minds. The building was completed in 1878, at an expense of nearly \$35,000, and is fitted with all the modern conveniences. The

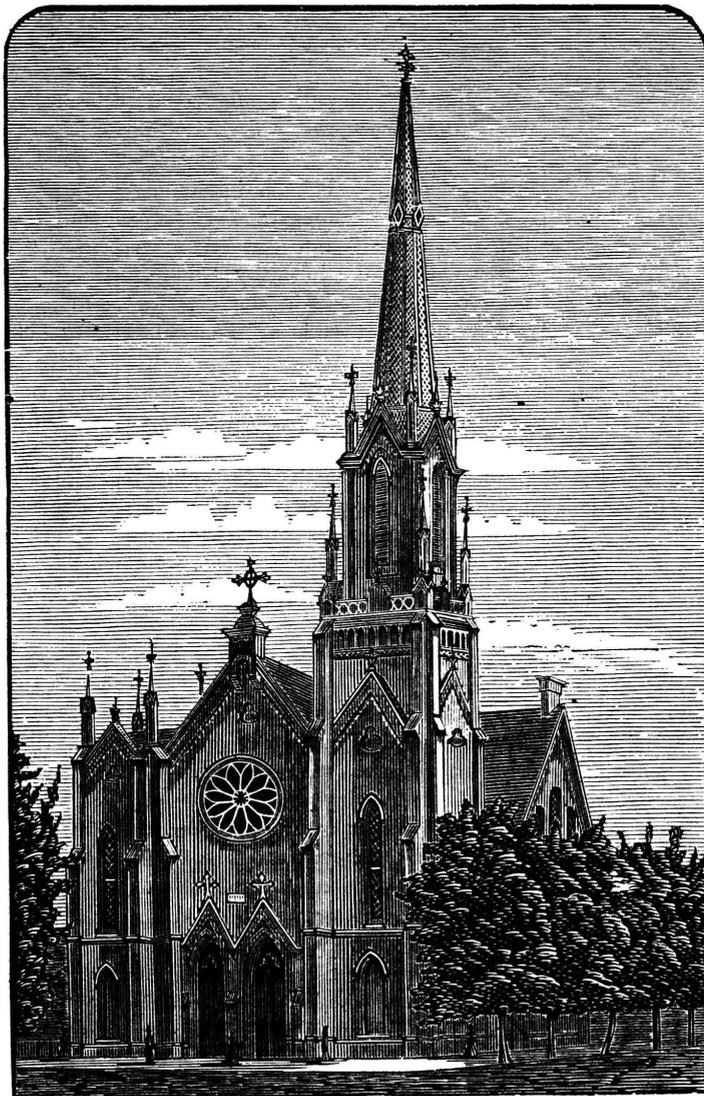
total number of patients at present is 42, of which only seven are females. Superintendent, J. Phillips, is in charge of the institution, and has a corps of able assistants, consisting of one visiting physician, one matron, four keepers, one night-watchman and one cook. Immediately above the Asylum, and seen to the left in the engraving, is the British Columbia Penitentiary, also completed in 1878, but which, we are happy to say, has but 34 convicts. These, however, are compelled to make themselves generally useful in clearing land, farming, blacksmithing, etc., etc.

The Cascade mountains, north of the Columbia river, Washington Territory, have been but little prospected as yet, but enough is known to induce the belief that in a year or two the best paying mines on the coast will be developed. Several organized companies are now at work developing as many quartz ledges, and they think they have already found enough to insure success.

The great canal commenced at the South Fork of the Snake, thirty miles above Eagle Rock, Idaho, will redeem 625 square miles of agricultural and mineral lands.

At a spelling match one man spelled "pasnip" and got beet.

Paying the piper—Settling the plumber's bill.



M. E. CHURCH, SALEM, OREGON. From a photo by F. A. Smith.

shows ten instructors and one hundred and forty students.

The Provincial Insane Asylum of British Columbia, an engraving of which will be found on page 38, is located in the midst of a beautiful park on the north bank of the Fraser river,

miles above Eagle Rock, Idaho, will redeem 625 square miles of agricultural and mineral lands.

PEDAGOGUE QUACKERY.

BY L. P. VENEN.

Let nobody be frightened at the severity of the above epithet. So long as it best subserves our purpose and is truthful in its application, we feel altogether innocent in making use of it.

We have no sympathy with quackery in any of the learned professions, and especially do we feel like crying out against it when practiced as one of the new sciences in the instruction of our children and youth.

We are most happy in the consciousness that we are not standing alone in this crusade against a very modern and pernicious innovation. Some of the leading educators in many of the Eastern cities are carrying on a vigorous and determined warfare against the evil in question, and what a cotemporary aptly styles "flummery in the schools."

The ultimate evils resulting from the popular method of imparting instruction in the primary schools of our larger towns and cities are as motley as they are numerous. Like hereditary diseases, these evils are far-reaching. Imbibed, as they are, in early childhood, they are literally dyed in the wool, and it is next to impossible to eradicate them from the delicate, cellular tissue of the young mind. It is a stereotype complaint among college presidents and professors that a large majority of the young ladies and young men presenting themselves as candidates for admission, are shockingly defective and "rusty" in the first principles of what should appertain to a common English education. Susie (there are no Susans now-a-days) might be able to dissect the flower of a house-plant, resolve a chord of the seventh on the piano, define the vanishing point in drawing, or even to have at her tongue's end the nomenclature of chemistry, but if her precious bang were at stake she could not correct the following sentence and give proper reasons for so doing: "It was so wet I dared not wear my dove-colored silk, therefore, choosing the smallest of two evils, I sat the lamp on the table, laid down on the lounge and read in the story of the Lacie's Retreat, to where Bridget yelled to the butler, 'That's me!'" And so Augustus Edward, too, might readily trace an irregular Greek verb through all its intricacies, or pronounce a Latin

oration, while at the same time he could not give three consecutive rules in English syllabication, or calculate the interest on a note with partial payments, to save his father's store from being sold by the sheriff.

Every age of the world has produced its Magi who have left on record the uncompromising declaration that there is no royal road to knowledge; and yet the solemn text continues to go begging for adherents. If the school-houses of our grandfathers were rude and unattractive in their appointments, their memory deserves to be embalmed forever in the annals of the solid literature of our country for the pure, unadulterated "common school educations" which were gleaned within those sacred precincts. For a term of years, the old-fashioned, hard-study, committing-to-memory system has been denounced as arbitrary and barbarous. But we undertake to say, that there is more true backbone in that despised method, to-day, than in all the endless object-teaching appliances and other patent, stuffing apparatuses that so completely glut and cumber our modern school-rooms.

For nearly three decades, our primary teachers have been stuffing our children for examination days as we stuff chickens for the holidays. But thanks to our Eastern friends, the tables are turning, and there is hope that we shall return to first principles in the near future.

We not long since heard a good grandmother in Israel sadly complaining of the rapid deterioration in our evangelical Sunday Schools. "The time was," said she, "when we used to study the *Scriptures*; and the Bible, without note or comment, was the only text-book known or heard of in the best regulated Sunday Schools. It was up-hill business, but at the end of the year, we knew whether to look in the Old or New Testament to find the story of Sampson and the lion, and the parable of the prodigal son. Now-a-days, it is not fashionable for children to have Bibles, so their hands and arms are filled with lesson leaves, library books, Sunday School newspapers, card pictures, rewards of merit, black-board diagrams, Scripture slips and goodness knows what all."

Well, with all her quaintness, we think the old lady was about right, and

in giving vent to her own pent-up feelings, she furnishes us a splendid diagnosis of the incubus that now rests upon the primary departments of our present school system.

In a word, our entire educational system stands in crying need of a thorough overhauling. From the prime mover to the balance wheel, the thing is simply in a state of abject demoralization. Desperate as the case would appear to be, the remedy, which is within reach of all, is no less effectual than simple. Let parents, teachers and school officers return to first principles, and the thing is done in good shape. Let us lay a broad foundation by teaching our children to correctly read and spell in their mother tongue, and the way will be substantially paved for a rapid and effectual forward movement.

Latin, Greek, and the higher mathematics, are bright and shining accomplishments for any young man to aspire after, but he should attain unto them in a thorough and legitimate manner. And we just as readily account it an honor for any young lady to become an adept in the classics and natural sciences; but let her progress, from first to last, be a *homogeneous* one, for there "all the honor lies."

The wily fox denounced the good grapes as sour because he could not reach them by jumping, while all the time his mouth was watering for them.

Should we blame children, then, for conceiving a radical hatred for branches of study beyond their years with which they have been prematurely crammed to utter loathing?

But we have said fully enough to enable the discerning reader to draw a pretty safe conclusion as to how we stand on the modern educational question.

At ten, a child; at twenty, wild;
At thirty, strong if ever;
At forty, wise; at fifty, rich;
At sixty, good, or never.

It is not right to raffle; though of course when a church needs money that's different.

A sole stirring incident—Treading on the point of a tack.

Next to nothing—A girl walking with the average dandy.

RAILROAD MANNERS.

BY J. A. CRUZAN.

Some enterprising publisher ought to get out forthwith a new edition of Chesterfield's book on politeness, with a supplementary chapter, by some American Chesterfield, on "Good Manners in Traveling."

A railway train, or a crowded steamboat, is an excellent place to study character. There the true man and woman are seen. People at home are under bonds, so to speak, to conduct themselves in a respectable manner. If they do not they forfeit the good opinion of those whose favor is of value to them. Away from home, among strangers whom they never saw before, and expect never to see again, and whose good opinion they think of no money value to them, they act out their real nature—that is, unmitigated, abominable selfishness.

Take, for example, Mercator. When at home, he is a seller of dry goods. Politeness is part of his capital. A gruff, uncivil style of speech, or unpleasant, annoying habits, would cost him hundreds or thousands of dollars annually. Mercator knows this. So, in addition to silks, laces, and calicoes, he keeps a stock of pleasant words, smiles, bows, and inoffensive personal habits. But Mercator, on the train or steamboat, is a different man. He looks around. None of his customers are present. He stands on the guards of the steamer, near the ladies' cabin, and puffs the strangling fumes of tobacco in the very faces of disgusted and nauseated women. On the train, he does the same, while he stands on the platform, and when he comes inside claims three times as much space as he should.

What cares Mercator for the discomfort of others? The store manners are not now in demand—"there's no money in it!" Being a gentleman at home only in the way of business, he now sees no necessity for being a gentleman at all. So all the selfishness and meanness of his nature come to the surface.

Miss Melliflud, at home, is a model of feminine gentleness. Her graceful virtues, and politeness, make her an ornament of society. Report has it that she is "in the market," with "great expectations." She, too, is bound over to keep the peace. At home one rude speech, one unladlylike

act, one glimpse of selfish rudeness, might be gossiped all about town, and do serious damage to her "great expectations." But away from home, the foul atmosphere of the car or the odor of the steamer, seem to infect her character. She is rude, haughty, selfish, and shows no regard for the rights or comfort of others. I've seen her in a crowded railway train spread her voluminous skirts, wraps, and traveling outfit, over two whole seats; and when respectable people asked her, "Is this seat taken?" I've heard Miss M. forget all about the commandments and—lie! At the same time she said to every person in the car, very plainly: "Notwithstanding my fine clothes, you see I am not a lady. I am only a very common, coarse woman at heart, thinly venerated!"

Boreas rushes in hot haste through the car, brushes heavily against people, knocks off a hat or two, plunges into a seat without a word to the person already seated in it, drops his traveling-bag on the stranger's toes, and shouts, "Hello, Jim, is that you?" to some one at the other end of the car. Then he begins to spit tobacco-juice on the floor; the puddles spread right and left, far and wide, an insult to every clean person.

Now these persons, all three, are not bad people, however disagreeable. They do these things more from thoughtlessness than malice. In fact, there is great need for all who travel—and who, in this day of easy, rapid transit, does not?—to have their memories refreshed in regard to the rights and duties of travelers.

Some one has laid down four rules for railroad traveling, which would add greatly to the sum of human happiness, if they were pasted inside every hat and bonnet. They are:

1. A person who has paid for a ticket is entitled to just one seat. If the passengers are few, he may be allowed, as a matter of courtesy, to occupy more. But he has a claim on but one seat.

2. He can establish a claim to his seat only by taking possession of it.

3. If there is a vacant place by his side, he has no authority over it to say who shall occupy it. Any one who chooses to claim that vacant place has a right to it. If you don't want to sit by him, you are the one who must move.

4. A person leaving his seat, even for a few minutes only, cannot justly claim it again unless he has in some way notified new-comers that the place is taken. Any article, package, traveling-bag, etc., left in the seat, is sufficient pre-emption title.

These are very plain, just, common-sense rules. If they were only impressed on the memories of all travelers, much rudeness and discomfort would be avoided.

Let me give two additional general rules for all kinds of traveling by public conveyance:

1. Travelers should conduct themselves in such a manner as will not needlessly interfere with the enjoyment of others. If anybody is rude, or overbearing, infringing on our rights, we may quietly defend ourselves from imposition. But while those around us are courteous, we should be careful that no one outdoes us in courtesy. If we are surrounded by boors, then all the more need that we set them an example of true courtesy.

2. Ages before Chesterfield, there lived the truest gentleman that ever walked the earth. He traveled extensively through his native land. An old book containing a brief digest of his conversations lies on my desk as I write this article. In it I find the most comprehensive of all rules for the guidance of travelers—"Whatsoever ye would that men should do unto you do ye even so to them."

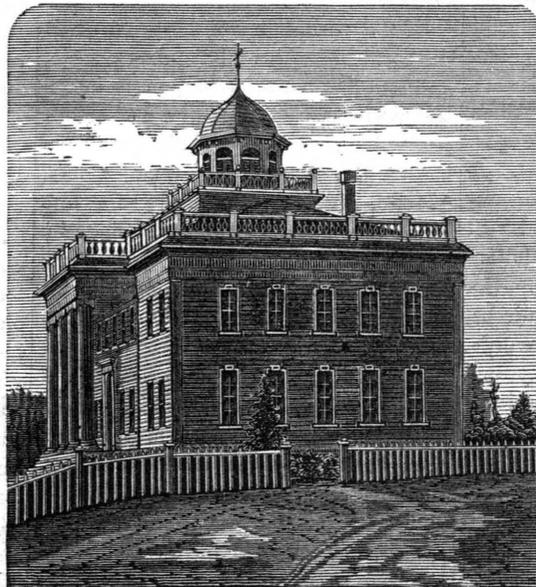
Waha prairie, south of Lewiston, Idaho, offers a good location for many settlers. The most favorably located claims are already taken up, and many are extensively cultivated. The average of grain to the acre is 35 bushels of wheat, 50 of oats and 30 to 40 of barley. Vegetables of all kinds grow in great abundance on sod lands. The prairie is but sparsely watered, the streams following the canyons. But water is generally found by digging from five to thirty feet. The timber for fencing and building is on Craig's mountain, about fifteen miles from Lewiston, but the winding roads around the mountain makes the distance to good timber fully twenty-five or thirty miles. There is a sawmill in Lewiston, one on the mountain and one located up the Clearwater. They can be reached by a gradual incline down the canyons from the table lands. The country is settled mostly by eastern men, many having their families with them.

PUBLIC HEALTH.

As spring is upon us, and summer will soon follow, it is not a moment too soon to call the attention of the public to the sanitary condition of our city. The citizen who knows anything about the sanitary condition of Portland has no occasion to swell with pride, nor can he boast of the machinery intended to be used to insure the health of the people and protect against epidemics, if he takes a just view of its fitness for that purpose. Attention to this subject is the more needful just now in view of the recent deaths which have taken place here from diseases at once so virulent and unsparing, striking down and destroying the loved ones in our homes who had before them the prospect of long, useful, and happy lives. It is none too soon, then, to warn the public authorities, and arouse them from their lethargy, if such is possible, and to stir up our citizens to insist on rigid sanitary measures, feeling assured that those who recently manifested so much laudable zeal in behalf of the dumb brute, will more readily act in a cause that effects every home.

Portland, situated as it is with all its present advantages, should be one of the healthiest cities, if not the healthiest one in the United States. Its facilities for draining could hardly be better, and the water supply which is available, or can be made so, for flushing out pipes, drains, sewers, and other ordinary purposes, is most abundant. It does not enjoy the reputation it should were its sanitary interests closely attended to. The truth is, that for want of a proper system of vital statistics, or any system at all, (for none is in existence) the position it occupies is quite uncertain. It must stand low, however, and can not take its proper place without a thorough cleansing, which must be repeated and kept up continually, followed by the preparation of tables of health and mortality monthly or quarterly. These tables would show our exact position, and would squarely bring our citizens face to face with certain preventable diseases that ravage the community with alarming frequency. Nothing quickens any sluggish public more than the startling revelations made by these tables from time to time. They touch none, and people think and act with decision and energy. The thought almost astounds one, that a city such as Portland, with its twenty thousand inhabitants, has adopted no means to obtain and preserve such statistics, which are so necessary. Of all things that call upon us for consideration and action, health should be first. What can we do well without it? What does life amount to in its absence? This thought should impress us in all the changes in locality we make during life, especially if we are acting as heads of families or as the guardians of others. When one is moving to a strange city or country, the first question should be, is it healthy? And in moving into strange houses in this or any other city, the first question should be, is the locality healthy or unhealthy? the next, is the house old or new? is it a death's trap, to catch his thoughtless, innocent children? Will malarial gases creep out of the sinks, escape from the water-closets or back yards, and invade and strike down the inmates? He can examine the premises thoroughly, and he should do so, and if he finds the drains choked, the sinks untrapped and no proper vent pipes or system of ventilation,

the premises low and damp, he should flee from it as from a scourge spot. There can be nothing but disease and death in such a house—a score of physicians could not give health in such a place. Life and health first, other matters afterwards, in their order. Any citizen who thinks at all and has any regard for his own family, if not for his neighbors, should be willing, without a moment's hesitation, to pay, and that liberally, to inaugurate and enforce strict sanitary laws to protect the health and lives of that family, to say nothing of keeping the doctor out. In cities men are pre-eminently their brother's keepers in matters of health. Their houses are in closer proximity—their business relations are intimate. This huddling of houses together, which is the constant practice and bane of cities and one of the principal objections to city life, is what calls for the greatest watchfulness and care on the part of our public authorities, to see that they are so constructed as to drainage, pipes, traps, vent pipes and closets, that only the minimum evil may arise, as some must be the consequence of the close con-



TERRITORIAL UNIVERSITY OF WASHINGTON, AT SEATTLE, W. T. From a Photo by Peterson Bros.

tact of dwellings and business places. The day has long passed that we can father on Providence disease and death arising from our criminal thoughtlessness and neglect as to sanitary precautions. Our forefathers were in the habit of taking too kindly to His inscrutable ways and giving Him credit for many of the fearful epidemics and pestilences that ravaged the country in those days, that now are quite under our control, and are preventable. Science in those days had not so interfered with and trench upon those unaccountable ways and sports, and does not laugh at calamity when it does come, as some wrongfully charged that Providence did. We can not blame them, as they acted according to the light they had; but if they had enjoyed the scientific blaze that we do, they would not have escaped our censure and condemnation. Thanks to Science for what she has already done; let us use her as a future and unerring guide in warding off disease.

In looking about the city recently, I noticed that many of our citizens threw all kinds of filth and garbage on the streets and in many of the

lanes, and worse, that it was suffered to remain there and disgust and poison with its noisome odors. In the central parts of our city, pest-holes of dirt, and reeking filth existed, and in other parts of the city filthy heaps of rubbish, composed of the most offensive matter, stood gradually rotting and sending out stenches and deleterious gases, which, rising up, creep into the adjoining houses, feeding neuralgia and all malarial diseases and ailments. The most offensive places are those in possession of Chinese, where they run their wash-houses. The yards of many of them are littered up and strewn with an indescribable conglomeration of the vilest smelling offal; upon this is thrown the most disgusting liquids that only a Chinaman, with an experience of three thousand years, could concoct; the fetid mass gives out an odor at once as startling as frightful, and as dangerous as offensive. If the heathen were strict followers of Confucius, or hailed from the north of China, their habits would be different. Their former practice of living over water, has created a strong tendency to dump all or any filth

they part with, upon yard, alley or street. Were it not for the coolness of our climate and the abundant supply of rain we get, I have no doubt that the most appalling epidemics would have ravaged our city. Any person can see with half an eye the terribly close proximity of back-houses and cesspools to many of the dwellings. In one quarter there are four within a few feet of, and another immediately adjoining, three family residences. These vile receptacles are the most dangerous things that we have on our property, and only their necessity compels their toleration; most of them are worse than powder magazines. They require the most unsparing pains in cleansing and keeping clean, and in ventilating and discharging the foul air from them in some safe way. By these means they are made comparatively safe. As they exist at present, no one will dare to deny that a large number are in a most deplorable condition, and call for the immediate attention of the authorities.

Another fact that cannot be too strongly impressed on parents, is the bad condition of the sinks and water-closets that form parts of their dwellings. It is stated, upon good authority, that one of the houses in this city in which recently occurred several deaths, contains a water-closet with trap but no ventilation pipe. In such a case the trap is no real protection, as the fetid gas will find its way through the water and poison every one inhaling it. If such was the fact, the disease may well be traced to the escape of the pestiferous gases from the closet, and should be a warning to all in charge of such properties to at once inspect and protect themselves against any repetition of the terrible disease. A certain plumber residing in this city, stated, the other day, that he felt, at times, almost guilty of murder, when he considered the manner in which he had to be compelled, by the sheer niggardliness of people erecting houses, to do their plumbing. To save a few dollars by dispensing with a trap or a vent-pipe, the safety of the inmates was entirely sacrificed. He said that about two-thirds of the old houses in this city contained no traps or vent-pipes, and that a large number of the newer ones, which contained traps, had no vent-pipes from

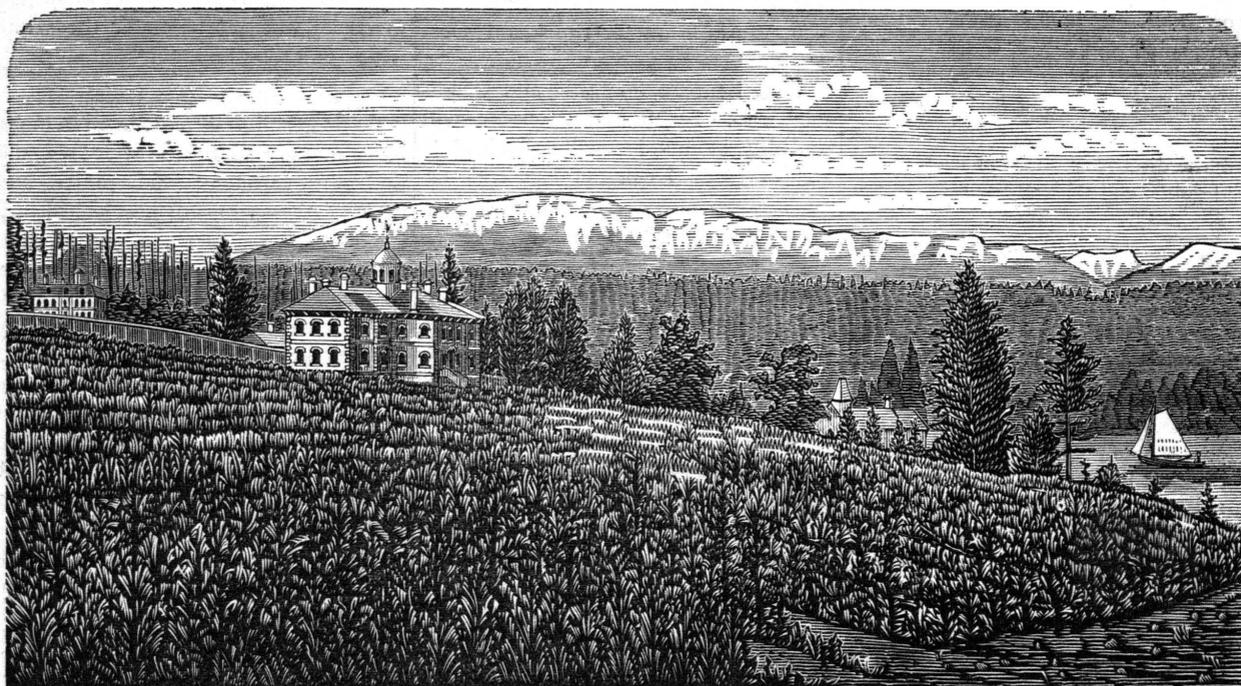
the traps whatever. When parties building were advised to have them in, the suspicion that the plumber wanted to make a few extra dollars, was quite sufficient to deter them. A vent-pipe should accompany every trap, and every citizen who has a trap to his sink or water-closet should see to it that these vent-pipes were in and in good order. Should there be some in our city who do not know what a trap in plumbing means, it might be well, perhaps, to describe one of those in ordinary use. It consists of a tube in the form of the letter S, and forms part of the waste-pipe of sinks and discharge pipe of closets. The liquid, passing from the sink, goes through it, but in doing so, part of the liquid is retained in the crooked tube, which prevents the fetid air from getting through the discharge into the house. In order to carry away the noxious gases which accumulate beneath the trap, it is most necessary that a current of air should be established, which will carry

lanes, backyards and cesspools be rigidly enforced. Let the sewers, drains and waste-pipes be thoroughly flushed out, and so amended as to those that can not be flushed out at present, so that they can. Make it compulsory that those who have sinks and waste-pipes should have proper traps and vent-pipes. Suppress all badly constructed and dangerous back-houses; wipe out any unnecessary cause of disease in whatever part of the city found.

Ordinances are required to prevent a recurrence of the nuisances and avoid future danger. An ordinance may be very well requiring an immediate report of physicians of certain very dangerous diseases, but one acting as a preventive would be much better. The construction of buildings should also have attention, and when connection is made with sewers, sinks, and water-closets built in, all the means which sanitary science has devised should be enforced, to insure safety.

sician, who, armed with authority, without fear, favor or affection, would inaugurate and enforce a system of sanitary rules and regulations that would at once clean up and sweeten the city and fully protect from the diseases that prevail from time to time and that exist here at present.

Let us have at once a regularly constituted board of health, with full power and authority to deal with the whole subject in principal and detail, animated by the mind of a thoroughly trained and experienced physician. Certain resolutions for that purpose were introduced and submitted to the Health Committee of the City Council some few weeks ago, which would have well met all that is required. They seem to have been killed, or lost sight of, as nothing has been heard from them lately. Why they were not passed is, perhaps, as easy answered as the question why the bouncing ordinances were not passed. Many gentlemen are sent to the City Council not to do, instead of to do. Perhaps the inconvenience that might result to some of them or to their friends, has something to do with their conduct. The question of expense is at once raised, which is an



THE PROVINCIAL INSANE ASYLUM NEAR NEW WESTMINSTER, B. C. From a Photo by R. Maynard.

with it all the foul gases. This is done by a vent-pipe, which should be extended up above the roof of the house, and discharge itself there, but near no window. As most of our citizens have sinks and water-closets in their dwellings, they, or the public authorities, should see to it that all necessary precautions are taken, by the expenditure of a few dollars, to insure safety. Let all tenants investigate the condition of their houses, and if they find that the necessary safeguards for their health are wanting, let them insist upon an immediate change, or make it themselves, or move.

What should be done by the public to put the city in a proper sanitary condition? The first thing should be to cause to be made, by competent and skilled persons, a thorough investigation as to the exact condition of streets, alleys, lanes, backyards, sewers, drains, waste-pipes, water-closets, cesspools, etc. This being done, the next thing to do is to insist upon the abatement of every nuisance that pollutes the air and injures the health of the city. Let clean streets, alleys,

These, with such other precautions as those skilled in the science should devise, would insure the perfect health and safety of your city; and when accomplished, Portland, I dare hope, will hold the first place on this coast for health, and perhaps will have the lowest death-rate of any city in the United States. But all these sanitary precautions and appliances are incomplete without the adoption of a regular plan of obtaining accurate tables of vital statistics. There is no sufficient machinery to accomplish the foregoing investigation and reforms. The principal responsibility rests with the Chief of Police and Mayor and the force at their command. We have no intention of casting much blame upon these officials, because the Chief of Police has his hands fully occupied with other matters that are the principal business of a police force; besides, sanitary duty requires previous special training. The last remark applies also to the Mayor. Had the officers the training and time and the reward for the duty, it might be better performed; but that is even doubtful with the ordinances now in force in the city which are of little value—suitable for a village, but not for a city. The fact is that the business should be placed under the control of some thoroughly competent and experienced phy-

argument of unanswerable cogency to those that disregard health. The expense of such a board should not, however, deter us for one moment, as the amount required is so trifling as hardly to be felt by any person. If we compare the amount it was thought the proposed new board would require, with the annual expenditure of other cities of the United States, the amount is trifling, a mere bagatelle, Baltimore expends about 50 cts. per head in her sanitary work. All that is required from Portland is 10 cts. per head, or about \$2,000 a year. Who would object to the expending of so small an amount to accomplish so much good? I do not think one citizen who is unbiased and free would grumble if called upon to pay his 10 cts. which he could hardly ever spend in a better way.

Then let us, with a view to the health of our city, and that she may take her proper position with the sisterhood of other cities in vital statistics, have a properly constituted and energetic board of health, animated by the zeal of a trained, experienced and honest physician as health officer. Until this is done, the health of our city is in great peril. If the City Council will not move in the matter, let the people do so by a public meeting.

THE CHOICE OF A HOME BY SETTLERS
IN OREGON OR WASHINGTON OR
IDAHO.

BY REV. G. H. ATKINSON, D. D.

HOMES ON THE PACIFIC NORTHWEST.

This is a region of homes, owned, with few exceptions, by their occupants. Government land is so cheap, and homesteads, pre-emptions, timber culture claims can be taken and held on terms so easy, that every family, however poor, can have a home. This proffer by the U. S. Government, in this entire Pacific Northwest—formally known as Oregon—for the past thirty years, has led to the steady growth of settlements made of home farms, small and large, and home-like villages and cities. Probably this growth would have been more rapid, had not the acquisition of California and the discovery there of rich placer gold fields, and the sudden rush of our people thither, turned the public mind to the hope of making quick fortunes, and going back to their eastern or western homes to live. But the benefits of this exodus to the mines of California, and to the later found mines of Oregon, Idaho, Washington, British Columbia and Alaska, have been to advertise the whole Pacific coast to the world and draw hither emigrants from all nations; open new fields of business enterprise; to cause steamship and railroad lines to be established; and to induce the investment of home and foreign capital; to create three large Pacific states and six territories, with their senators, representatives and delegates in congress; and finally to settle the question with business men of all classes, farmers, mechanics, merchants, artisans, physicians, lawyers, ministers, journalists, educators, publicists, and political economists, that our whole domain between the Rocky mountains and the Pacific ocean is to be the chosen and permanent home of a very large and rapidly increasing population. Placer mining by the many with shovel and rocker and sluicer, have given way to quartz mining by the few capitalists in deep shafts and cavernous chambers with rock blasting, crushing machines and separators. The great Spanish grant ranches of California, held by a few rich men and leased or worked by hired laborers and machinery, while furnishing large amounts of grain for export in good years, yet exclude the

mass of farmers from ownership of the soil, and compel them to find or make homes elsewhere on government or rail road lands. Our Pacific Northwest now welcomes these exiles from California. Our fields have been tested for their cereals, grasses, vegetables and fruits, and found productive.

The writer has witnessed thirty-two harvests in Oregon, without the failure of a crop. Our climate has been proved favorable for growth and for health.

Our forests bear the test of value for timber and lumber of almost every needed variety, and of unlimited extent. The coal fields of British Columbia, Washington Territory and Oregon and Alaska prove to be numerous, and excellent for domestic and steamship uses. Idaho and Montana will probably be found equally rich in coal and of older formation and superior qualities.

Our salmon fisheries on the Columbia and other rivers; our herring and halibut fisheries in Puget Sound, De Fuca Straits, and along the coast; our cod and halibut fisheries along the coasts of Alaska, extending to those of the Okotsk, and joining the mackerel fisheries of the Japan seas and straits, surpass in extent and rival in value the fisheries of the rivers and bays of the western coast of Europe; the channels and sounds and friths of Great Britain; the straits and fiords of Denmark and Norway, the Baltic and the North sea, with those of Labrador and Newfoundland added. Japan has a population of 35,000,000 whose almost entire animal food for a thousand years has been the fish of her own surrounding seas.

The Pacific ocean, whose warmer waters lave the shores of Asia and America, favors the life and furnishes the tropic food for untold varieties and numberless schools of fish. This is their great pasture ground. Thither they immigrate, like the birds, from bays and rivers for winter, and return in spring for their spawning nests and the nurseries of their young. They await the increase of population on our coast for a market.

A few of our iron mines and limestone beds have been opened and worked with success. Our flax fields have yielded seed for oil, of such amount and good quality, and lint for looms or

such fineness and strength of fibre as to command high prices, the one in San Francisco, and the other in Dundee and Belfast.

Our home manufactures of wooden and iron and woolen fabrics, have only begun. Our water power and fuel power have been merely tested. The slow development of these resources during the past thirty years, has been a preliminary work. These results are the signal banners of what vast products await human industry and enterprise. The present annual exports of several hundred thousand tons of harvest products, foretold tenfold the amounts that will be borne to all the marts of the world under the white wings of a thousand merchant ships.

THE CHANGES.

At first the immigrant aimed to make his home on the choicest spot he could find of government land, prairie and timber, with springs or brooks at hand. Next he hurried to the mines for gold to buy a home. Next he became a trader or a speculator to obtain a competence for himself and family. Latterly he has become a stock-raiser, or has sown his broad fields in wheat, and has won success. Farmers in all directions sought first the treeless, flat or rolling prairies of the Willamette valley as the only fit place for farms. Stock was gradually driven to the high prairies east of the Cascade mountains for pasture. Herders and shepherds, and widely separated ranchmen, occupied that region. Merchants and transportation companies supplied the few goods and bore off the few exports of the interior.

The trade of the valley doubled and quadrupled by means of railroads and improved river navigation. It was found ten years ago that the cereals could be raised at a profit in the upper Columbia basin. Four years ago the plough slowly crept up the slopes of the high eastern prairies. Two years ago it reached and turned up the rich soils on the hill tops. Those lands called too dry and desert-like, have yielded twenty-five to fifty bushels of wheat per acre. In mid-summer the wheat was green and luxuriant from the invisible vapors absorbed by the ploughed and spongy soil, while the bunch grass on unploughed land two feet distant was drying up. The choice farms a few years ago were along the

streams. None would take the hills except for pasture. Now the newcomers, who had to choose the hills, have the better farms. Meanwhile, in the Willamette and other valleys, west of the mountains, where the prairie and bottom lands were first chosen, the long spring rains have delayed the plough, and the rapid summer growth has begun to produce rust, but on the well drained hills—the second choice—farms are proving to be the best. The lesson of such experience is, that, *under* the forests of Western Oregon and Washington, and *on* the high prairies of the upper Columbia basin, which extend through Oregon, Washington and Idaho, are to be the surest and most abundant harvests, and future homes of the people.

The large stock ranchmen are giving way to the on-coming regiments of farmers with their ploughs and reapers, and are seeking new and more distant pastures among the mountains. Flocks and herds are driven into narrower quarters, or divided into small bands to be kept within the limits of single farms. The question of a fence law or no fence law agitates these little communities, and becomes the occasion of appeals to the legislature and to the courts. Settlements are becoming denser and more compact.

The farmer in his home is becoming master of the situation. In the end he will win the ground and hold control. The process may be slow. The area is very large, north, south and east, but farms and pasture and woodland will touch each other ere long; houses will stand in sight along the road lines, and little villages and school-houses and church spires will dot the landscape for many scores and hundreds of miles. In the treeless regions of the interior, the orchard and timber culture, as well as the wheat and vegetable culture, have been tested and found feasible and profitable. The water supply increases in the regions called rainless, by cultivation and by orchard and shade tree planting. The inconveniences of the present are deemed only temporary.

THE RELATIVE VALUE OF FARMS EAST AND WEST OF THE CASCADE MOUNTAINS.

This question now taxes the best judgment of the old settlers. Formerly every family hastened to the Willamette, the Umpqua, or the Rogue

river; or to the lower Columbia, or Cowlitz, or Chehalis, or to the Puget Sound basin.

Latterly the sons and daughters and their families, and often their parents, are seen moving east of the mountains.

Their western homes are sold at good prices to new comers. Immigrants in large numbers for the last three years have sought for lands in the upper Columbia basin. Wheat culture has doubled in a year, and quadrupled in four years there. Railroad and steamboat lines offer means of transport to meet the new demands. The great drift of population is that way. They are rewarded and satisfied with the results. The climate is good, and with not a long or severe winter, or a long, hot summer. Industry meets a quick return. Varied products of field and pasture prove profitable. The signs are that the home life of the interior Columbia will be full of cheer and abundance as it is usually of sunshine. Farms can be made there very quick, so far as cultivation and crops constitute one, but fuel, lumber and goods have a long and costly transportation, and the export of products to the ship and to distant marts is also costly.

For example, suppose a ton of wheat of thirty-three bushels to be the average crop per acre, in Whitman, Spokan or Columbia counties, Washington Territory. The present cost of river transportation from any point along the Snake river is \$8 per ton to ship at Portland. By team to the Snake river the cost averages not less than \$5 per ton. This extra cost of \$13 per ton, exceeds the cost of exporting wheat from the valleys west of the Cascades about \$8 per ton, on an average, or about twenty-four cents per bushel. Return freights of machinery, goods, fuel, lumber, etc., have a similar excess of cost. New railroads will reduce this margin somewhat, but transportation to and from distant interior towns and settlements to ship must always be a large factor in the expense of farms and homes.

As compensation for this loss, the upper Columbia farmers claim a large gain in the ease of raising all kind of crops, and the greater yield per acre, and a more sunshining sky. The farmers of the prairies and valleys west of the Cascade mountains, on the other

hand, claim greater advantages, in the abundance of fuel and timber at hand at small cost; the endless number of springs and streams and opportunities for water supply from wells at little cost; with the added facts that crops are always sure; that wheat on the hills yields well; that greater variety of crops, like vegetables and fruits, can be raised at a profit, near the shipping port, which would not bear freighting from the distant fields of the upper Columbia.

The Willamette and coast farmers also claim that the forests will soon be worth more than the prairie lands, acre for acre; that small farms, with a variety of crops, as hay, grain, flax, vegetables, fruits, wood, lumber, wool, beef, mutton, horses, swine, fowls, cheese, butter and eggs, all of which will find a quick market, every year, at paying rates, are more profitable than large wheat farms, or stock ranches. They foresee that wheat will be a drug on the market, and fall in price very near the cost of raising it and shipping it. Stock is already costing stockmen nearly as much as they receive from the purchaser. Prudent farmers prefer to have small, well tilled fields well fenced; orchards in good trim; pastures for small lots of best grades of horses, cattle and sheep; good houses, barns and sheds, with abundant stores of food, and shelter from storms for all their animals, all at hand, everything to sell and all adding a little to the daily income. They know that small constant gains amount to more per year, net, than a few large sales of beef or wool or wheat will do. Very often a man on a few scores of acres will have more cash at the close of the year, than the man who tries to till several hundreds of acres.

Besides, the smaller farms with variety of products raised by the joint labor of all the family keep them busy at all seasons. These items might be extended, but they indicate the factors which go to make up the true home farms, and rural settlements of our northwest.

OBJECTION.

The clearing of our heavy forests, which on an average can be done ready for the plough at less than \$100 per acre is deemed a bar to farming west of the mountains. It is so to the man who merely aims to raise thou-

sands of bushels of wheat per year. Such a farmer must seek the broad open prairies, however distant from the ship. But the gradual clearing of forests has marked the progress of American farming for two hundred years, and the results have been the too rapid destruction of trees, and too complete denuding of the New England and Western states. If this process continues and clears off the only strip of forest region along the Pacific slope, west of the Cascade mountains, it will prove a dire calamity to all the settlements of the interior, and a waste of our surest source of income.

THE CHOICE.

In view of such facts as these every intelligent immigrant and settler must and will make his own choice of a home. No man can wisely choose for his neighbor. It is the glory of our freedom, and the genius of our liberal government to offer every citizen a choice of his home on the same terms and under the fewest restrictions.

Wood ashes with the bits of charcoal in them, and coal ashes, too, are excellent physic for fattening pigs. Pigs cannot stuff themselves, week after week, without their stomachs getting out of order, and the bits of charcoal check acidity and regulate them, and help to improve their appetites.

The ordinary routine of dining seems in Sweden to be in wild confusion. Soup sometimes ends instead of beginning the dinner. Iced soups and cold fish are dainties to the Scandinavian palate. Much of the soup is nauseously sweet and flavored with cherries, raspberries, and gooseberries, and often has macaroon cakes and spikes and cinnamon floating wildly about in it. This is eaten as a sort of dessert, and is cold, and is often beautifully clear.

In ancient Sparta to grow fat was a crime, and the offender was punished at the whipping-post. In modern America it is a virtue, and the possessor of adipose matter is rewarded by an alderman's chair or a seat on the supreme bench. So fashions change from age to age.

DO FARMERS WISELY CHOOSE OCCUPATIONS FOR THEIR SONS?

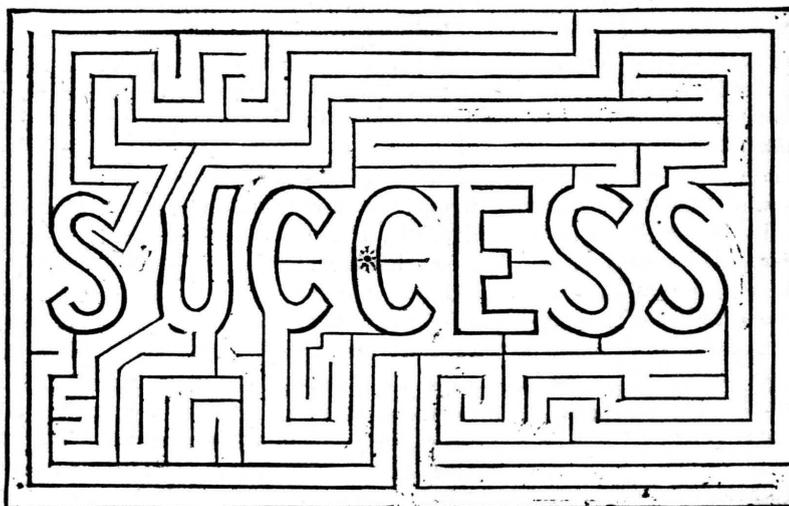
At a late meeting of the Syracuse Farmers' Club, Mr. Edwards said: "A farmer has two sons; one has strong physical development and a natural taste for farming; to use the hoe and follow the plow day after day is both congenial to his feelings and his health; his mind rests in quiet satisfaction as he looks out upon his father's broad acres, and views with manly pride the growing flocks and fattening herd, and estimates in dollars and cents their value. The other son lacks the physical strength of his brother, but has fine, sensitive nerves, and a deep thirst for scientific or legal knowledge. He goes to the fields with his brother, with heavy tread because it is his duty to go, but his thoughts are among the planets, trying to calculate their distances from the earth, and the influence they have

inclination of the parent rather than their own. It is a fact that most of the failures result from not putting the right man in the right place. Had Franklin always been kept at the tallow chandler's trade, the lightning might never have been subservient to the will of man in transmitting our thoughts from continent to continent in a moment of time. Had Edison been put upon a farm, and kept there, his whisperings would not now be heard from city to city."

THE BRIGHT SIDE.

Look on the bright side—it is the right side. The times may be hard, but it will make them no easier to wear a gloomy and sad countenance. It is the sunshine and not the cloud that gives beauty to the flower. There is always before or around us that which should cheer and fill the heart with

warmth and gladness. The sky is blue ten times where it is black once. You have troubles, it may be. So have others. None are free from them—and perhaps it is as well that none should be. They give sinew and tone to life—fortitude and courage to man.—That would be a dull sea, and the sailor would never acquire skill, were there nothing to disturb its surface. It is the duty of every one to extract all the happiness and enjoyment he can from within and without him, and, above all, he should look on the



MAZE PUZZLE.

Trace through the white spaces between the lines and get to the star in letter C, without crossing a line, will be "SUCCESS."

upon the seasons. Such a boy can never make a successful farmer, no more than the other can make a successful astronomer. Parents should at least be as wise in looking after the fitness of their boys for their chosen business, as they would in training their colts. But how is it? A farmer goes out to examine his young horses; there is four-year-old "Dick," large, strong, close-jointed, and mild-tempered, slow and steady, a good horse for the team. There is young Flora, smaller, long-jointed, with deer-like limbs, and high temper, can be made to trot in 2.20, worth \$5,000. No farmer will ever make the mistake, and put Dick in training for the race-course and send Flora to haul stone. Now, his boys are just as unlike as his colts and need as different training. The judge naturally wants his sons to become lawyers, so, too, the minister, merchant, mechanic and farmer too often insist that their boys follow the

bright side.

What though things do look a little dark? The lane will have a turning, and the night will end in broad day. In the long run the great balance lights itself. What appears ill becomes well—that which appears wrong, right.

THEY GO TOGETHER.—A citizen entered a saloon and called for a cigar. The bar-keeper handed out the box, and a cigar was selected; but the customer did not appear to be very much pleased with it. "Where's the corned beef?" he inquired. "I've got the cabbage here"—indicating the cigar.

A young lady never wastes the second look on a man with a limpy collar and a soiled shirt front. She knows he is married.

When a chiropodist enters a ball-room, should the band play "See the corn-curing hero comes."

THE DESERT OF SAHARA.

Much attention is now being attracted to the great African desert, Sahara; not altogether through mere motives of curiosity, but chiefly in the interest of science, and with the view to flooding some portions of that region and bringing others into more favorable conditions for cultivation. Two plans for flooding have been suggested, one to let in the waters of the Mediterranean and make a sea of the lower portions; the other is a more gradual but equally sure and more serviceable mode of improvement, by which fresh water may spread its fertilizing influence over a large portion of those now drear and arid plains.

It is well known that even within historic times, Sahara has been a comparatively fertile and populous region. Its ancient fertility was not derived from rivers, but from wells, "spouting wells," they were called then, which from disuse or other cause have long since ceased to flow. So that the very existence or even possibility of such wells, anywhere, had been almost or quite forgotten until within a few years, when similar wells, now known as artesian, were found in the Valley of the Seine, from whence their knowledge and use has spread over almost the whole civilized world.

That artesian wells once existed among the oases of the Sahara desert is known from what is said of this region by ancient writers. References in this direction are given by Lieut. Schroeder, U. S. N., in a paper in the last number of the *Popular Science Monthly*, from which we condense a few paragraphs:

Diodoras, a priest of Tarsus, 1,600 years ago spoke of the great oasis, 40 leagues from the Egyptian frontier, which he said was irrigated, not by rains or rivers, but by springs which issue continually from the ground,—not spontaneously, but by great labor on the part of the inhabitants—meaning, of course, artesian wells, bored or in some way sunk by man. Some of these old wells have been discovered within a few years, and found filled with stone valves, by which their flow could be regulated. Some of these wells are spoken of by other ancient writers as being 500 cubits deep. How they were dug will probably ever remain a mystery. Several Arabian writers spoke of them over 1,000 years ago, as then flowing. Ibn Khaldoun referred to them as "spouting wells," and considered them a miraculous fact. Their origin had even then been lost. Modern research has disclosed the sources of supply of these artesian waters, which still exists in numerous localities all along the eastern and northern borders of that great desert region.

Although our knowledge of its geology and topography is as yet quite meager, enough is known to determine that immense subterranean sheets of water may be found in many places at a comparatively small depth from the surface; and it is quite certain that if an enterprising and energetic people were planted upon the borders of this desert, in place of the bigoted, lazy Saharan tribes who now roam upon them, the desert would soon again become clothed with verdure, and be made a most productive country. It is a curious but well attested fact that many ancient wells have been filled up by the more recent dwellers, evidently either for the purpose of defence against warlike invasion, or with the view of discouraging the influx of a more energetic and industrious class of people than themselves.

The French have already commenced a system of improvement in the desert back of Algiers. The first artesian well was struck as long ago as June, 1856. Within the next eight years seventy-two successful borings had been completed, the deepest of which is only 364 feet. The supply of water is exceedingly abundant, and of most excellent quality.

Origin of the Desert.

A M. Largeau in 1874 visited the Valley of the Igharghar, with the intention of branching

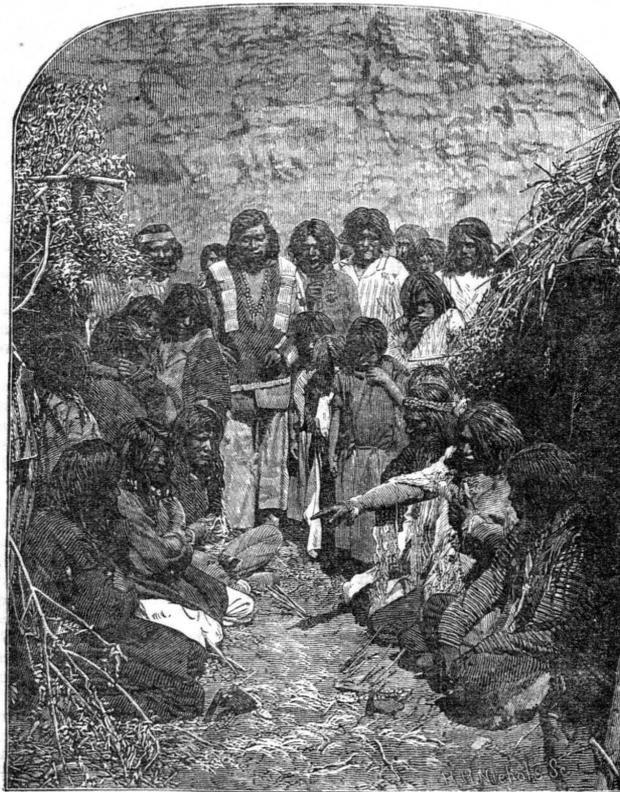
off to Rhadames to study the commerce of that oasis and test the practicability of diverting to Algeria the caravans that come there by the central route from Soudan. He questioned the *chambas* on the causes of the drying of the great Saharan streams, and found that all agreed in saying that these dead rivers once ran full through a country more fertile than the Tell (the region north of the Atlas mountain's crest), but could only explain it by legends more interesting than satisfactory.

M. Largeau gives the following explanation of the change: "It is known that pastoral people have always been great destroyers of forests, for they need large spaces of clear ground to feed the flocks that form their wealth and to promote security against the wild beasts that lurk in forests. Even now the Algerian Arabs are seen firing the woods to enlarge the narrow limits imposed upon them by colonization. So, although the great Saharan streams have not been explored to their sources, yet it

INDIAN GAMBLING.

The engraving on this page shows a phase of aboriginal life which is not often brought forward, and that is the passion for gambling. The means employed for this service of Fortuna are rude and original with the Indians. The excitement attending the playing of the game extends beyond those immediately engaged, for the men, women and even the children gather to watch for the signs of victory. The scene shown in the engraving is laid in Arizona, and is from a photograph taken during Powell's survey of the Colorado river.

FORMATION OF CHARACTER.—If somebody should give me a diamond to carry to Europe, I can know exactly how much would be lost to the world were I to drop it into the sea; but if a seed should be given me, I can only regard it with awe, as concealed within it is the food of



A SQUAD OF INDIANS AT GAMBLING GAMES.

is known that they commence on the bare plateaux that are but the skeletons of heights once wooded and fertile. All accounts of the inhabitants of these regions agree on that point. Consequent upon the destruction of the forests the periodical rains were replaced by rare and short though violent storms, the waters from which, instead of soaking in as in past ages, slip by on the rocky masses, carrying away the rich surface mold, and bring about the drying of the springs, and, as a direct consequence, of the rivers."

SAID an old farmer of the Jersey highlands to his daughter, fresh from boarding-school: "No, Jane, we haint got no napkins, 'n' we don't eat with no forks 'n' we do shovel 'n' ther grub, 'n' we do smack, an' we git our elbows onto ther table; yes, we do all of that; but, Jane, we've got the pork and beans."

CHARLES LAMB remarked of one of his critics: "The more I think of him, the less I think of him."

untold generations. That is the difference between looking at the truth as a diamond or a seed, as final or germinal. In all training of character, continuity and economy must be supreme. The notion that character is spontaneous is held by most people in the earlier portion of their lives, and is wrong. When they discover this, nine-tenths change to the other extreme. This is wrong, too. Hosts of young men think that their character will form itself and they will necessarily become better as they grow older. Hosts of old men believe that their character is fixed, and that it is impossible for them to become better. Such beliefs are foolish. People are also wrong in thinking that they can put off their bad traits and put on good traits. The old failures cannot thus be transformed, but out of the old habits new can be formed. This is what many a poor creature needs to know. We must make what we are to be out of what we are already.

"No! Algernon dear; I say that the boy shall not be brought up on the bottle. Look at its grandpa's nose!"

ON ROTTING WOOD.

We condense the following from an interesting lecture recently given by Prof. Wm. H. Brewer, of Yale College, before the New Haven Board of Health:

It is well known that all woods contain certain nitrogenous, organic compounds, known chemically under the general name of *albuminoids*, and that these substances are active in inducing and favoring rot. All chemical methods for the preservation of timber from decay look towards getting this nitrogenous portion into some less soluble condition, or into some combination less liable to chemical change. When green wood is well soaked in cold water, a considerable quantity of such albuminoid matter is dissolved out, remaining in solution in the water. This solution, even when very dilute, is extremely putrescible—more so, indeed, than any person would deem possible, until he had tried the experiment. The fact is as true of the hardest woods, as maple and locust, as it is of soft wood.

To illustrate: If a few pieces of such green wood be carefully freed from bark and all foreign dirt, and put into the purest cold water and let stand at the ordinary temperature of 60° or 70° Fahr., the water soon begins to become turbid or opalescent; this opalescence increases, in two to four days a thin pellicle forms on the surface, active putrefaction sets in, along with an abundant growth of ferments, and the liquid soon becomes peculiarly and pungently stinking. The odor naturally varies with the kind of wood used, but in all cases it is very rank, fully as much so as the same amount of *animal* matter in solution. The intensity and rapidity of putrescence vary, of course, with the temperature, the kind of wood, and the degree of concentration of the solution.

As in the case of other putrefaction, what the gases are which produce the exhalations, we are entirely ignorant. It is probable that they are organic compounds of simpler molecular constitution than the albuminoids which furnished the necessary elements.

If kept long enough, and of sufficient concentration, there is an abundant fungoid growth in the solution, and if kept in the light it grows darker in color, gradually becomes sour to the taste and smell, but continues offensive in odor for a long time; in bottles partly filled, it continues to smell bad for two years. Where the solution is kept in the dark, the odor seems more offensive than if the decay goes on in the light.

In the free air and full sunlight (the condition to which piles and various other wooden structures and vegetable matter in swamps are subjected) along with the putrescence, a white fungus growth begins on the surface of the wood, which rapidly becomes slimy. This forms much more abundantly on the ends of the grain of the wood than on either the radial or tangential sides. If the solution is poured from the wood and kept in a separate vessel, and in the light it grows dark, as already described, but the fungus growth goes on, modified, of course, by the temperature and the degree of concentration, or until the decay has become complete.

If the wood continues to be placed in successive portions of clean water, the soluble matter continues to be extracted for several months, even if the blocks be very small, and the tendency towards putrefaction grows less and less. Finally, however, the soluble matter appears to be removed, the water then remains clear, and the wood ceases to be covered with fungus growth, at least to any visible extent.

Timber, when thoroughly water-seasoned, is known to be very durable, and it is probable that it is so merely because of the removal of the soluble and putrescible albuminoids.

Experiments tried with the same woods in sea water, and in brackish water (made by mixing two measures of fresh water with one of sea water), show similar sanitary results; they are even actually intensified. The turbidity be-

gins sooner in sea water than in fresh; the film on the surface is more abundant, and the smell is more disgusting. Heart-wood and sap-wood act essentially alike in this matter, the difference is one of degree rather than of character. The suggestiveness of these facts is almost too obvious to need comment, and yet I will add a word. Vast quantities of wood and vegetable matter, decaying in water or in swamps, are too common.

If piles about our wharves and similar structures do not smell so badly, it is merely because the solution is more dilute. The decay goes on, however, and so with vegetable matter decaying in swamps, sawdust in ponds, and so on to the end of a long chapter. The trouble has sometimes been attributed to the obvious gases evolved, notably to light carbureted hydrogen, which one may see bubbling up, with nitrogen and carbonic acid, through the water of ponds, where sawdust, or vegetable matter, is decaying on the bottom. As I have maintained in a paper read at a previous meeting of this association, I cannot believe that either of these latter gases of decay seriously affect health. These latter experiments on woods only confirm the views then expressed.

The exhalations of swamps, or of vegetable matter decaying in still water is universally regarded as unwholesome, in climates where for a part of the year, at least, the wear the is as warm as we have it. So far as I know, there is no exception to this on the whole earth, and hence the general sanitary bearing of the observations here recorded need not be further argued.

PROPOSED RIVER BETWEEN MANCHESTER AND LIVERPOOL.—A meeting has been held in Manchester for the purpose of considering the expediency of the proposal for the construction of a tidal navigation for seagoing steamers between Manchester and Liverpool. At this meeting Mr. Hamilton Fulton, the engineer, explained the nature of the proposal, and stated that the length of the channel between Manchester and Liverpool would be about 36 miles. The minimum width of the navigation would be 200 feet, and the minimum depth at low water spring tides would be 10 feet, or about two feet more water than exists at low water over the bar at the mouth of the Mersey. A basin would be provided at Manchester end of 81 acres with 16,000 lineal feet of well-constructed wharves, and all requisites for shipping accommodation on a large scale. The estimated cost of the undertaking is £3,500,000. Mr. George Hicks, of Manchester, presented a statement as to the probable revenue, which, if realized, would give a large return upon the proposed outlay. Owing to the inability of several members of Parliament and others to attend, the further consideration of the subject was adjourned.

CHICAGO'S TUNNELS.—Chicago is much dissatisfied with the tunnels built under the river which divides that city, with the object of relieving the blockade of vehicles in the streets. When they were built, 12 feet of water was considered enough, but vessels have increased so much in size since Chicago was made a port of entry, that ships and steamers are constantly "bumping" or scraping their keels on the arches of the tunnels aforesaid. The shallowness of the river is so serious a drawback to shippers of grain, coal and lumber, that tearing up and rebuilding the Washington street tunnel is strongly urged. This is a warning to large cities, lest they build streets in such a manner that ships are compelled to sail over the heads of those who frequent the public thoroughfares.

WASHING COMPOUND FOR CLOTHES.—The German washerwomen use a mixture of two ounces turpentine and one ounce spirits of ammonia well mixed together. This is put into a bucket of warm water, in which one-half pound soap has been dissolved. The clothes are immersed for 24 hours and then washed. The cleansing is said to be greatly quickened, and two or three rinsings in cold water remove the turpentine smell.

THE FEET IN WINTER.

Sometimes in washing the feet in warm water a great deal of scurf or whitish soft substance may be scraped from the soles. This is dead skin, dried perspiration, and other accumulations, all resulting from a want of personal cleanliness. These accumulations occur most in winter, when washing the feet is neither as convenient nor agreeable as in summer time. Many persons suffer from cold feet, simply from a neglect to keep them clean. Few suffer thus in summer time, one reason for which is that the skin is moist, the pores are open, a free evaporation takes place, and the blood is invited to the surface. In winter the skin is dry, harsh and cold. To keep them constantly warm and comfortable is indispensable to good health, and to do this the surface must be brought to the condition of summer—that is, must be soft and somewhat moist, instead of being harsh and dry. This may be soon brought about by soaking the feet in warm water for half an hour at a time daily, using most freely a very stiff brush, with good soap. After the skin has become soft and smooth, a good washing with soap and warm water twice a week during cold weather will greatly contribute to a healthful condition of the feet as well as to personal comfort. If the feet are kept unexceptionably clean, and are nevertheless inclined to be dry, considerable benefit will be derived by rubbing into the soles every morning a little sweet oil, 20 or 30 drops to each sole, with the palm of the hand, patiently and well, the object being to secure by artificial means, that softness and moistness which is known to favor evaporation and invite thither the flow of blood. If in addition, the feet were placed in cold water regularly every morning (when not unwell) not over two inches deep, and remaining in not over half a minute in cold weather, then rubbed briskly dry with a coarse cloth, next with the hands, all followed by a brisk walk or stamping for a minute or two, or until they begin to feel comfortably warm after the cold bath, an improvement in the condition of the feet would be secured in a reasonably short time, which would largely compensate for the trouble taken.—*Hall's Journal of Health.*

PITTING IN SMALL-POX.—Somebody has ascertained the curious facts, in small-pox, that poor people are pitted least, rich people are pitted most, and no classes are pitted under their dress. Poor people have less light in their homes; the rich have plenty of light, and under the dress there is of course less light than in either case. The explanation according to this observer, is a scientific one. The sunlight consists of three primary colors. The red, the blue and the yellow rays have distinct and characteristic properties: the yellow gives light, the red gives heat, and the blue gives actinism. Now, the pus of variolar pustules absorbs, by its yellow medium, the actinic rays, which results in corrosion of the tender flesh at the base, thus leaving pits.

IMPORTANCE OF SLEEP.—A medical man, discoursing upon sleep, makes this remark: "One man may do with a little less sleep than another; but, as a general rule, if you want a clerk, a lieutenant, a lawyer, a physician, a legislator, a judge, a president or a pastor, do not trust your interests to any man who does not take, on the average, eight good, solid hours of sleep out of every twenty-four. Whatever may be his reasons for it, if he does not give himself that, he will snap some time just when you want him to be strong."

TO PREVENT RUST FROM FORMING IN A TEA-KETTLE, keep an oyster shell in the bottom; and when water is wanted, pour off without agitating the vessel. Be careful also not to let the water stand in the vessel when not in use.

THE SOLAR ECLIPSE.

OBSERVATIONS OF THE COAST SURVEY PARTY.

At the meeting of the California Academy of Sciences, San Francisco, Jan. 19th, Prof. Davidson, of the U. S. Coast Survey, said that, as heretofore, Capt. Patterson, the Superintendent of the Coast and Geodetic Survey, had given him permission to communicate to the Academy the general facts observed during the late solar eclipse. Then, with the aid of the blackboard, he described the points of interest in a very lucid manner. He said:

In the late eclipse the cone of shadow was so small, from the apparent diameter of the sun and moon being so nearly the same—the latter exceeding the former by only the two-hundredth part, that it made it hardly worth the while of astronomers to come here from different places to view it, especially as it took place so late in the afternoon. Being well acquainted with the topography of Monterey county, I chose the Santa Lucia mountains as the best place of observation, that being the highest point for a hundred miles. There were many minor difficulties to be encountered. The mountain was 6,000 feet high, and there being no trail, we had to cut our way through the chemical. In the instructions for astronomers issued in 1878 for the eclipse of July of that year, it was especially mentioned that the English and American almanacs differed so that the estimated paths of totality differed three miles in location. I was desirous, though the arrangements could not be made, of having the north, south and central points determined by different observers at different points, and thereby rectify minute errors that might exist in the nautical almanac. It is from our knowledge of the path of total eclipses from before Christ, that we are enabled to check the secular changes of the moon.

It formerly required long and intricate calculations to determine the path of an eclipse, but so many of the constant quantities are now computed, that with most observers an hour or two of calculation, involving merely quantities depending on latitude and longitude, suffices to determine the times of the beginning and ending of the totality.

To meet the requirements as well as possible our party was equipped with a large equatorial of 6½ inch objective, one of 3 inches, two of 2½, and one of 2¼, all good glasses of high power and definition. These last qualities, as well as the quiet atmosphere and the high elevation which we sought to obtain, are necessary in order that the first and last points of contact may be accurately observed. The beginning all along the coast was similar to what you saw here.

The moon entered on the sun's disk on the lower limb at about 30° to the right of the vertical, and left the sun at a point about 16 degrees from the vertical on the left. By the high power and large aperture of my glass I was enabled to see the first contact of the limbs several seconds sooner than the others.

Both disks were real and not spurious. Spurious disks arise from the undulations of the atmosphere, occasioned by unequal refraction, and in that case the body of the sun or moon will not only appear too large, but there will be no well-defined point of contact at any phase. As the moon advanced we saw its contact with the sun's spots in three different groups. As totality advanced, several peculiar phenomena exhibited themselves. On account of the slight apparent diameter of the moon over that of the sun, the cusps became remarkably sharp. Observers at San Francisco and Oakland saw these cusps rounded instead of sharp, on account of the irregular refraction caused by the differently heated strata of the atmosphere. As the moon advanced, upon its edge became visible the lunar mountains. The darkness above the disk of the moon was less than the darkness of the moon on the sun, and yet the observers had failed to see the moon's disk before it touched the sun. Venus and Mercury have both been seen pro-

jected on the corona before their transits, and it has been supposed possible to see the dark body of the moon before it touches the sun.

My instrument was so arranged as to exclude all but one-tenth of the light and heat rays, whereby the eye is protected from the effects of heat, etc. The approach can be detected by spectroscopic methods before it quite touches, but not as a dark body. As the two disks became concentric, the crescent was remarkably prolonged, because the diameter of the moon was apparently only 1-200th greater than that of the sun. At that time the sun was passing into some cirrus clouds, and the points of the crescent were duplicated. I was somewhat surprised at the prolongation of the segment, which finally existed as a mere line of light 30 to 40 degrees in length. As it became narrow the phenomenon of Baily's Beads, a series of bright points of the sun hanging on the edge of the moon, caused by the irregularity of the waves of light from atmospheric vibration, was possible. This phenomenon was not visible owing to the clear atmosphere, but the line of light was broken into dots and dashes, like the Morse alphabet; the dots of light marking the depressions between the lunar mountains, as was proved by the fact that when one point of light disappeared it did not reappear, as in Baily's Beads, but was gone for good. Thirty seconds is a very short time, unless you are hanging by the neck. That was all the time we had, however. Each one of us attended to his assigned duty. I was seeking for an intra-Mercurial planet, and had one chance in a million. I had prepared a chart, with all the stars down to the seventh magnitude, and hoped to locate any unknown star by the configuration of those about it. I was satisfied beforehand, however, that the sky was too bright and that the cone of shade was too bright from a sort of re-illumination.

In consequence of this, the effect of the eclipse was somewhat disappointing; there was no black shadow creeping over the earth and the ocean, as in a totality of three or four minutes, but only a brown area advancing to us over the ocean; and the atmosphere was so light that we could make all our observations without artificial light. Upon the mountains we could not perceive the shadow's course at all. The want of depth of shadow was a disappointment to me, knowing that an intra-Mercurial planet would probably be invisible, and particular attention was then given to the corona and the bright flames. There are four sketches of the corona made by our party, more consistent in their outlines than those by many more skilled observers with much more time. It is impossible to describe the magnificence of the sight that the eclipse presented. Huge masses of red flames burst out above the upper surface of the sun one-twelfth or one-fifteenth of its entire diameter in size, from 50,000 to 70,000 miles in height. The lower limb of the sun produced a broken, jagged line of rose-colored flame, extending around a third of the sun's circumference, above the apparent disc of the moon, and covering millions of miles in area; this reached 40,000 miles in height. The flames were visible for one or two seconds after the disappearance of the sun, a rather unusual phenomenon. After the re-appearance of the sun a change of conditions occurred showing the effect of atmospheric causes. The atmosphere became disturbed and in watching the end of the eclipse the limbs of the sun and moon were remarkably disturbed. The smaller telescopes lost the point of contact first. As the moon went off the sun's disk, its outline appeared as a wavy line of black, that of the sun as a wavy line of red, and it was impossible to tell the exact moment of their separation. Had the atmospheric vibration occurred at totality we should have had an exhibition from this cause of Baily's Beads.

The phenomena visible at totality are the red flames, the chromosphere and the corona. A circle of light around the sun, in width equal to about one-eighth of the sun's diameter, marked the lower part of the corona. As a rule, this is the only circle seen, but on this occasion a sec-

ond circle less bright was noticed outside the first. Outside the chromosphere, which is the real atmosphere of the sun, the corona stretched out to a distance of about a diameter and a half in the direction of the sun's equator and to a smaller distance in the direction of its axis.

In the eclipse of 1869, the corona was sketched by several observers but the sketches differed widely. On this occasion, as has been said, the sketches agreed pretty closely, and two observers are confident that they saw the corona lengthen and shorten rapidly. As on the previous occasion three observers, placed side by side, produced widely varying sketches of its form, it is not impossible that the cosmical matter of which the corona is composed may be subject to sudden changes.

It has been thought that the corona and the zodiacal light may prove to have some physical connection, especially as the latter lies in the plane of the sun's equator. The zodiacal light was clearly visible on Santa Lucia on the evenings preceding the eclipse.

The corona shines partly by its own and partly by reflected light, and is therefore believed to be formed partly of solid particles which reflect the light, while the bright lines of its spectrum indicate the presence of gaseous vapors.

The chromosphere consists of the metallic vapors arising from the surface of the sun, but the chromosphere proper is only a comparatively thin stratum of one or two seconds of arc, or from one to two thousand miles thick.

The photosphere, or visible disk of the sun was, during totality, covered throughout with the mottlings known as "rice-grains." Among these were scattered those larger and more crooked lines of light known as "faculae." These "rice-grains" and "faculae" are the apices of bodies of flame shooting up from the surface of the photosphere, masses of flame which, when looked at edgewise during totality, appear as the magnificent "red-flames" which the spectroscopist determines to be incandescent hydrogen, magnesium, etc. The photosphere is in constant motion and spots and groups of spots are generated by the matter immediately around them rushing in with cyclonic action, and so quickly that while the sun's surface was under observation one of these spots was divided in two.

Various theories as to the constitution of the sun have been put forth by Secchi, Young, Faye and others, but the one which appears to account most rationally for the phenomena presented and for the conservation of the solar heat is a modification of that of Faye.

According to this theory, the sun is not a solid body. It has long been evident to students of physics that no solid body could continue to give out a constant and regular supply of heat and light to the whole solar system. No chemical action can account for the heat, and actual fire would soon burn itself out. But if the sun is gaseous, and continually contracting, it has been calculated that a contraction of four miles in its diameter in a century would be sufficient to account for the amount of constant radiant heat now given off from its surface.

The mass of the sun must thus consist of incandescent gases in a highly compressed state, unable to solidify because of the intense heat caused by the constant contraction. When this contraction ceases, liquefaction or solidification will commence, and the radiation of heat will rapidly diminish.

In the corona there is seen by the spectroscopist the green line called "1474," which occupies a position different from that of any line formed by the known elements of the earth; there is also present the helium line, preliminarily so called.

Several total eclipses will occur during the next twenty years, and will doubtless enable us to solve much that is now unknown in solar physics. The next total eclipse visible in the United States will be in the year 1900. The longest possible duration of a total eclipse is 7' 58", those occurring during the next twenty years will give us from three to six minutes of totality.—*Science Record.*

THE SOWERS.

Ten thousand sowers through he lan I
 Pass heedless on their way;
 Ten thousand seeds in every hand
 Of every sort had they.
 They cast seed here, they cast seed there,
 They cast seed everywhere.

The land a forest straightway grew,
 With plants of every kind;
 And kindly fruits and poisonous too,
 In that wood could you find;
 For trees grew here, and trees grew there,
 And trees grew everywhere.

Anon, as many a year went by,
 Those sowers came once more.
 And wandered 'neath the leaf hidden sky,
 And wondered at the store;
 For fruit hung here, and fruit hung there,
 And fruit hung everywhere.

Then plucked they many a berry bright,
 None could their right deny;
 And some ate to their long delight,
 And some ate but to die;
 While some plucked here, and some plucked there,
 And some plucked everywhere.

Nor knew they in that tangled wood
 The trees that were their own;
 But as they plucked as each one should,
 Each plucked what he had sown.
 So do men here, so do men there,
 So do men everywhere.

—Tinsley's Magazine.

VOICE OF SPRING.

Hearst thou those low, sweet, incidental tones that now and then find a trembling, quivering expression, mid the hollow, sepulchral notes of hoary winter, saying: I am the first-born of the seasons, queen of the year, yet am held in bondage by the icy fetters of winter's king. His frost palaces, crystal pillars, and snowy garments edged with glittering icicles, are a mockery to my chained powers and passive will; for to-morrow is March-day, and I, who am queen by birth, am yet a prisoner clasped to his icy breast. Though outwardly quiet, my bursting heart is not all passive and submissive. Already my thousands of bright envoys, gorgeously arrayed, are out rallying and arousing the inert subjects bound by the frozen chains of winter, and ere many hours they will be marshaled forth from their death-trance to the quickness of re-awakened life.

My coronation will be upon a bright golden and red morning. At my feet in liquid beauty will gleam the now crumbled crystals of icy monuments, and from this limpid element will be reflected a mossy, velvet-like robe, speckled with crimson and royal purple, with dottings of silvery white spangles and borderings of golden flossy fringe, while upon my brow will be woven a coronal of diamonds like beads, a most princely kiss, though given in the biting, freezing bitterness of a dethroned king. My prophesy is true, and I, a reigning queen, am clothed in all the regal splendor of my flower-clad court. On my aureoreal wings I hie me o'er hill and vale, hoisting in mid-air slender stems, bursting buds and delicate flowers as flags of peace between the mighty fallen and life-giving victor. Wild March winds and soft spring sighs are organs by which is written an obituary fitting to the memory of the deceased, wherein is shown the beauty and goodness of his stormy life in the kind guardian care and safe transposition of that sleeping life to my hands.

This hidden, sealed life 'tis now my mission to unlock and lead to the portals of light. Day beams are my drawn arrows, and bright tinted rays the quivers holding the dewdrop and sunbeam till I scatter them as life legacies to brighten with resurrecting beams the darker trailings of the robe of death. Day by day the bright sun with his artist, light, is slowly departing, yet I steal from his unshathed arrows many a silvery minute, transforming it into a sixtieth part of a golden circlet, weaving it into the web of day, making that much less the starry roll of light. I coax and lead the more direct lines of the day-orb into many a hitherto

sun-ridden and benighted fastness, dispelling by a sunny smile gathered mold and mildew of darkness, while I gently whisper to the buried seed its shackles are loosed, and in the twinkling eye of sunlight the embryo bud bursts its scaly shell, sending forth tiny leaves, whose chalices drink my nightly tears, and under the baptismal touch of the sunbeam soon is christened the perfect flower. I feed, nourish and watch these floral children with joy and pride, and 'tis with sighs and a saddened heart I list to the decree of Father Time, that these offspring must be matured 'neath the gentle influence of my sweet sister, Summer. 'Tis she that will see their perfected beauty, breathe the fragrance of their pure lives, and perhaps shroud them for the grave.

My commands are not always borne upon gentle zephyrs, nor is my voice ever pleasant and harmonious. Its soft-breathing sweetness and gentle influence oftentimes is lost in the mad, frolicsome gales of the storm-wind, or dispelled by the heating beams of noonday; burning rays and driving winds chase each other in mad career over lakes and rivers whose seething under-currents are bound and hedged in vise-like walls of masonry framed by winter's chief workman, Frost King; my perfumed breath slowly crumbles and undermines these vast architectural designs, and the strong fabric is swallowed by a crystal stream, drawing its most powerful icy pillars into fine misty threads and gauze-like curtains, which shade the dazzled eyes of mortals from the too gorgeous beauty of those castles standing upon the azure-tinted clouds of heaven.

I open wide the closed windows and drawn blinds of the sick-room, gently whispering to the invalid of growing seeds, springing buds, fragrant flowers, green fields, budding forests, and singing birds that are filling the world with beauty and harmony; his dull eye brightens, the pale cheek flushes with deceitful rosinness of health, as suffering senses are for the moment lulled into unconsciousness of pain; the panting soul is lost and bewildered in the sudden transition from the darkness of despair to the hopefulness born of springing life-scenes. I fan his fevered brow, kiss his thin lips, leave a shadowy blush upon the sunken cheek, toss his waving hair, idly turn the leaves of the open Bible, lose the page, and imperceptibly bring him to a silent communion with nature's God that may thereby be seen by spiritual sight the unwritten, unlettered expression of those glories felt but not seen. Thus to the dim, impaired sight of mortality, such lights may fall upon those virtues (faith, hope and charity), as form a rainbow of the soul, whose reflecting tints will seal a bond of peace between the lowly created and the exalted Creator.

I bid the mountains clothe themselves in life and beauty. This command is echoed and echoed through meadow, glen, uncultivated wilds, and through darkest forest fastnesses and rock-bedded canyons. From their echoing depths spring sweet blossoms, bright-eyed daisies, fleecy-crowned dandelion, while the verdant shrub wildly waves its bright plumes; these combined ecstatic motions produce vibrations in the scented air which touches the most callous heart and brings a melody, though it may be weird and uncanny, from discordant depths. Thus magically doth all nature put on her life-garments, while I forever sing of regeneration and resurrection.—*Maria B. Lander, in Rural Press.*

PECULIARITIES OF RAPID MOTION.—If a musket ball be fired into the water it will not only rebound, but be flattened; if fired through a pane of glass, it will make a hole the size of the ball without cracking the glass; if the glass be suspended by a thread it will make no difference, and the thread will not even vibrate. When a tallow candle is loaded in a musket and fired at a board of not too hard a wood, it will make a hole in the board. If a round disk of paper is turned very rapidly on a lathe, its edge will cut the fingers like a knife; and if such a disk of sheet iron is turned with sufficient velocity, it will even cut steel.

MRS. FLUTTER'S BREAKFAST TABLE.

Five o'clock! Everybody in Springdale knows that Mrs. Flutter opens the blinds of her bedroom window at precisely five o'clock in the morning. In five minutes after, by the clock, she will be flying around down stairs, slamming the doors, lighting the fire, dragging out the table, clattering the dishes, getting the breakfast ready; then, upstairs again, hustling the children out of bed, and bidding them hurry down to breakfast, for "it will be on the table in 10 minutes, and them that isn't ready to eat can do without." Sure enough, in just 10 minutes the coffee is smoking on the table, the "men folks" have answered the summons, the sleepy-eyed children come stumbling downstairs in the darkness, and Mrs. Flutter takes her seat at the table, admonishing everybody to "hurry up and eat their breakfast, for it's baking day, and there's them comforters to be tied, and Hezekiah's trousers to be patched, and the ironing to finish, and the milk-room to scour, and the lard to try out, and the souse to make, and the pickle for the pork to fix—and—dear knows what all to do."

"Now, Mary Flutter, why don't you eat your breakfast?"

"Don't see anything you like, eh? Pork and beans, rye bread, doughnuts, apple pie, coffee—my goodness! what does anybody want with any better breakfast than this, I should like to ask? Well! I don't suppose I can cook your breakfast and eat it for you too. Give me a pin, and go fix the fire while I pick up these dishes. Jack, there's a loose nail in that shed door—tore my dress on it—drive it in, and bring some kindling-wood when you come back. Emma, take those kittens right out of this kitchen. I hate cats! Jack, if you don't hurry up with that kindling, the fire will be black out. Run, Mary, there's Tom Quizzle's team coming down the road, and I want him to get me some brown sugar at the village. Mercy on us, child! he'll be out of sight before you get started; it does seem as though there isn't a soul to do anything in this house but just myself! There! he's going to stop anyway. Suppose he tho't I'd want something, and Hezekiah's always doing some errand for Miss Quizzle when he goes to the village.—You, Jack—Sakes alive, children, can't you keep out from under foot. Get out of the way, all of you! and don't let me see you again till dinner's ready, but mind you come then when you're called, sharp, or you can go hungry for all of me."—*Clara Francis, in Prairie Farmer.*

FARM SCHOOLS FOR GIRLS.—France has agricultural schools for girls. One of the chief is near Rouen, which is said to have been begun with a capital of one franc, by a sister of charity and two little discharged prisoner girls, and to be now worth \$160,000. The establishment has 300 girls from 6 to 18. The farm, entirely cultivated by them, is over 400 acres in extent. Twenty-five sisters form the staff of teachers. More than one medal of the French Agricultural Society has been awarded to this establishment at Darnetel, and the pupils are in great demand all over Normandy on account of their skill. They go out as stewards, gardeners, farm managers, dairy women and laundresses. Each girl has, on leaving, an outfit and a small sum of money, earned in spare hours. If they want a home, they can always return to Darnetel, which they are taught to regard as home.

DOMESTIC HAPPINESS.—The harmony of married life depends almost entirely upon dinners. It is not the state of the heart so much as the condition of the stomach which makes a man happy. It is better for a woman—rank heresy, we know—to be able to make a cheerful home than to talk Greek. Before marriage the ability to sing divinely, and to play impossible music are very attractive; but when two people settle down to the steady work of loving each other for 40 or 50 years, the kitchen inevitably emphasizes itself, and the chances of success are greater with a comely housewife than with an accomplished beauty, who knows everything except how to make the house attractive.

PLAYING AT HOUSEKEEPING.

The Boston correspondent of the Worcester *Spy* gives an account of a "Kitchen Garden," established for the benefit of poor girls at the North End, which we are sure will be read with interest. She says:

"The 'Kitchen Garden' was first established in New York city by Miss Huntingdon, an active worker in the mission to the poor. She says that she spent hours of thought by day and night trying to devise some means by which the drudgery of the toiling children might be lightened, and they come to like the work that then filled them with weariness and disgust. The problem for her was how to teach the mass of children to put courage into their drudgery.

"A kindergarten solved the problem for her. Instead of blocks and balls and colored paper, there should be brooms and dust pans and little beds; and instead of lessons in geometry, there should be object lessons in household work, given on the Froebel method, with music and songs. She tried her plan with such success, that she prepared a book with the music, the lessons and the household catechism that the children learn, to be used as a text-book by other teachers. She called her school a 'Kitchen Garden,' and her plan has already been adopted by 13 of the New York churches for their mission schools. Last summer a Boston lady established schools here, at her own expense, and they are now in excellent condition at the Children's Mission and at the North End Mission.

"A visit to one of them is very interesting and amusing. The class that I saw was of 24 little colored children, the eldest 10 or 11 perhaps, and even the youngest quite capable of helping a good deal at home. They had four teachers—one who played the piano or organ, one who led the singing, the principal teacher who gave the instruction, and an assistant who was learning the art of teaching. The first lesson was bed-making. On the long tables, with 12 children at each, were toy bedsteads about two feet long, each with a mattress, two sheets, two blankets, one spread, a bolster, two pillows, with pillow and sheet shams. The children marched in to gay music, and before they began their lesson they sang together the bed-making song:

When you wake in the morning,
At the day dawning,
Throw off the bedding and let it all air;
Then shake up the pillows,
In waves and in billows,
And leave them near windows, if the day is quite fair.

For beds made in a hurry,
A fret and a worry,
Are always unhealthful and musty, 'tis sure;
But left for airing,
Pains taking and caring,
And one must sleep sweetly, to know it is pure.

The rules for bed-making,
If ever forsaking,
You list to the careless and hurry them through,
They'll soon grow so matted,
So hard and so flatted,
You'd wished you had listened and kept them quite new.

"The beds are already made, and the first thing the children do is to prepare them for sleeping. Working together and keeping time to music, they take off the pillows and shams, turn back the spread, turn down the other clothes, and make the bed ready for its occupant. Then they take off the clothes, putting them on two chairs to air, turn the mattress over and round, and make the bed scientifically. The rules are to make it level, square and smooth, and they are taught how to do this. The children are not allowed to take a lesson unless or until their heads, faces and hands are perfectly clean, and this rule has been so thoroughly enforced, that the little bed-clothes, which have been in use since June, are still unsoiled and look as if they had just been done up. The questions and explanations take some time, and make a variety in the lesson.

"Then came a washing lesson. Each child got her toy tub in which was a bag of clothes, table and body linen, coarse towels, and colored

stockings, a wash-board and a bag of clothes-pins. No water is used; but the clothes are carefully sorted, the fine ones washed, or apparently washed without the board, then the coarser ones, and so to the end, the proper twist in hand-wringing being insisted upon; then the clothes are properly hung upon a line. A sweeping lesson is conducted in the same thorough way, each child having a broom, a brush, a feather duster, a cloth, a dust pan and small broom. Of course there is no limit to the lessons that can be given in this way. Miss Huntingdon's book has the songs and music for those I have mentioned, for setting tables and folding table linen, for dish-washing, and for simple lessons in molding butter pats, biscuits, etc., and for rolling out cookies. The kitchen garden is intended to be a sort of preparatory or primary school, fitting the pupils for a cooking school, or other advanced course of household education.

"There is nothing in our present methods of education to foster domestic life or household employment. To shirk work, go to school, and race through a series of out-door excitements, are found to be the daily routine of a majority of children, way down to those whose out-door employment is only rough street play; and this kitchen garden seems to be a way to lead them to interests at home, to wanting things in order, and to a willingness to help put and keep them so. There cannot be a child in the world who does not look with a sort of artistic satisfaction at the doll's bed which she has, with her own hands, made so square and smooth; and a majority of the children are eager to try the same thing on a grown-up bed at home. At any rate, the classes are a pleasant sight, and the plan is working well."

FARM LIFE.—On a recent Sunday evening the Rev. Washington Gladden had a talk with the boys of Springfield, Mass. By way of preparation he sent out a circular to 100 of the most conspicuous business men, inquiring about their homes during the first years of their lives. He received 88 answers, and of these 74 replied that they had had the training of farm life. There could not be a more hopeful indication of the prosperity of the country than an assurance that 74 out of 88 boys in a community were training for the farm life. It is a hard life; but it is an independent life, it is favorable to religious growth and a cultivation of Christian graces. Corporations fail, manufacturing becomes dull, storekeepers cease to do business, and the hum of the factory is stilled; stocks go down and banking houses close; but throughout all the panic and disaster the earth yields its fruits to the frugal and industrious laborer. There is a narrow tendency manifested by those engaged in professional life to underrate the importance of life on a farm; it is considered a half alive and dead sort of existence; but what can be dearer than the impecunious, hard-worked clerkships in the city, with exacting duties and little or no time for leisure or recreation? The hope of the country, next to religion, lies in its small farms, and consequently in bringing up the rising generation to work the farm. Bring up your children with just ideas of the independence, the resources, the utility of life on the farm. Farm life means hard work, but there is always time for rest and recreation, such as is afforded by no other occupation.

SANITARY ERRORS.—It is a popular error to think that the more a man eats the fatter and stronger he will become. To believe that the more hours children study the faster they learn. To conclude that if exercise is good, the more violent the more good is done. To imagine that whatever remedy causes one to feel immediately better is good for the system, without regard to the ulterior effects.

"My wife," remarked a prominent manufacturer, "never attends auctions. She went once, and seeing a friend at the opposite side of the room, nodded politely, whereupon the auctioneer knocked down a patent cradle, and asked her where she wished it delivered."

CRYING OVER SPILT MILK.

There are some people so unfortunately constituted that they cannot as easily appreciate the blessings that belong to them as those which they have missed; who are perpetually groaning over something lost, or denied, or wasted, to the disparagement of the goods the gods have provided. If a dish is broken or a garment rent, instead of quietly making the best of it, since no amount of chafing or crying will restore any injured article to its pristine glory, they recur again and again to the disaster, till one might suppose nothing less than a convulsion of nature would demand such a hue and cry. A stolen purse is a text on which infinite changes may be rung among this class; and one might believe that the loss of a night's sleep could be readily repaired by weeping and gnashing of teeth, while the lamentations of Jeremiah are weak compared to the bewailing they make over a ruined enterprise or a fickle lover. With all their howling, they only succeed in publishing their misfortunes to a world that thinks no better of them for suffering failures, and in annoying their friends, without mending their estate or recovering the lover.

"We have gains for all our losses," says the verse, but surely the gain is not to be secured by making ourselves and everybody about us miserable on account of our mishaps; the one who bears with fortitude calamities which, great or small, are beyond her control, wins whatever advantage there is to be derived from them, and makes adversities, no less than prosperity, minister to her development. If our friends disappoint us, bemoaning will not recompense us; if "youth, the dream departs," deploring it will only hasten the ravages of time; if moths corrupt our furs, fretting will not act as an exterminator; though the early frost kills our favorite roots, "for violets dead, the sweetest showers can ne'er make grow again."

Although we are well aware that crying over spilt milk is but so much wasted time and energy, yet many of us practice it with a total disregard of consequences, which would be heroic if used in a more unselfish cause. In the meanwhile there is a sort of hopeless pleasure in sorrowing over the spilt milk, which, however blue or sour it may have seemed when ours, becomes all that milk should be the instant it leaves our grasp. "Blessings brighten as they take their flight," and sometimes it is only when we have lost a thing that we grow capable of estimating its value, and discover how necessary it was to our well-being. It is cold comfort, perhaps, but one which we are apt to hug, to reflect with bitterness upon what a different aspect the world would wear for us if certain pails of milk we wot of had not miscarried; if Angelina had married old Goldpill, instead of a country parson; if Aunt Goodenough had remembered us in her will, instead of the Feejee Islanders; if the lover of our youth had proposed in person, instead of trusting tender avowals to the mercies of the postman.

WARM CLOTHING.—If you are apt to feel chilly dress warmly at home. A wadded coat will enable the chilly man to sit and work anywhere in doors, and so will an extra suit of thin flannel worn during the whole of the active day. Just let anyone who doubts what we say try the very simple expedient, when the chillness becomes unbearable, of putting on his dressing-gown over his ordinary clothing, and in five minutes he will be perfectly comfortable and ready for work, while he will not suffer as he fancies he will, when he goes out of doors. The popular notion upon that subject is a mere delusion. You are not strengthened for outdoor work by shivering indoors, but rather weakened; habitual warmth, if not too great, being one of the best preservatives of constitutional strength. Always try to remain moderately and healthfully warm.

THE TWENTY THOUSAND DOLLAR PRIZE FOR HARVESTERS.

The last mail from Australia brought us files of Adelaide exchanges which contain reports of the contest for the prize of \$20,000 offered by the government of South Australia for a combined reaping and threshing machine. It is somewhat disheartening to announce at the outset that the contest was only a partial success, so far as bringing to view a full-fledged and well-working combined machine is concerned. The magnificent prize has failed to secure the objects aimed at in its offering.

There had been 27 entries for the government prize of \$20,000, but at the roll call only 14 responded and brought forward their machines. Of these there was one from the United States, entered by S. L. Gaines, of Oregon; the others were of colonial invention. Mr. Gaines was obliged to retire from the field soon after starting up. His excuse was that he had lost a pulley from his machine on the voyage, and the smaller one with which he attempted to work would not serve the purpose. The colonial machines did better, and after making their rounds, the grain was poured upon a tarpaulin and examined by experts. One machine was found to crack the wheat, but otherwise to yield it clean and in marketable condition; but those following the machine found so much wheat on the ground that its "saving" qualities were rated low. Another machine, which the reporters describe as having the appearance of an "infantine dredger," yielded wheat not so badly cracked as the preceding, but it was not so clean. The third machine to finish its round produced "very clean grain, with little waste." The fourth machine, which is pronounced by the *Observer* to "stand a chance of distancing its competitors," was entered by Mr. Phillipson. It reaped, threshed and bagged the grain, and in "all respects did its work better than any other exhibited."

We shall select, from the list of machines exhibited, one on account of its American origin, and others because they succeeded in turning out threshed wheat on the trial field. Mr. Gaines' machine was an adaptation of the Californian header, with a threshing and winnowing attachment. From the header the grain is thrown back upon a "draper," or rather three "drapers." These are revolving endless bands of canvas; one at each side carries the heads, which are cut off to a central draper, which in its turn conveys them back to a threshing, which afterwards forwards the chaff and wheat into a winnowing arrangement, where they are separated, the chaff, straw and other rubbish being scattered over the field.

The machine which is spoken of above as wasting grain was planned in this way: On the "off" side of the arrangement is a Ridley reaper contrivance for stripping the grain and chaff off the straw, from whence it is thrown up into a chute, which conveys it to a winnowing machine, carried upon the "near" side, one pair of wheels and a very long and strong axle supporting both winnower and reaper. The driver occupies a place with respect to the reaper portion of the machine similar to what he would be if the winnower were absent; but on the platform, to the left of him, stands a man with a scoop, who continually gathers up the cleaned wheat from a receptacle in the platform beneath his feet, and deposits it in a bag hung up in front of him. This labor appeared to be very heavy, and the continual bobbing up and down seemed unsuited for very hot weather. The wheat and chaff is passed through a number of sieves until it is separated into fine wheat and refuse, and at the end of the round the wheat bagged by the second man is laid upon the ground, whilst the chaff, chogs and other waste is cleared out of the body of the winnower.

The machine which did the best work at the trial was made by Mr. Phillipson, of Victoria. The local report says: The grain passes into the machine the same as in the ordinary stripper. After passing through the beaters it

falls on to an apron which elevates it to the top of the machine, and whilst it is being carried up it is acted upon by the wind from the front fan, which blows a portion of the chaff out of chimney at top of machine. The grain and straw then fall on to a straw-carrier which carries away all the rough straw and discharges it at the back. The grain then falls through a hopper on to the riddles, and while falling is acted on by the wind from the second fan, leaving nothing but white heads and drake to be taken out of the wheat, which is effected by the riddles, the white heads passing out on the off side into a set of elevators which convey them back to the beaters to be rethreshed. The clean wheat passes out on the near side into a set of elevators, and is then elevated and discharged into bags which stand on a platform on near side of machine. The drake falls from the riddles into a box placed to receive it. The bags when full are sewn up and tipped on to the ground. The machine requires two men to work it.

Of the machines which were brought upon the ground, but for some reason or other did not start, there were various styles, and they are described as "like a dredger," "a threshing machine mounted on the back of an ordinary reaper," "like a smutter in a flour mill," "like an emigrant wagon," etc. There was to be another trial in the week following the one we have mentioned, and the next Australian mail will doubtless bring the results of it, and it is to be hoped that something more definite may be attained than was brought out at the first trial.—*Pacific Rural Press.*

ELECTRIC LIGHT.

American inventors are in the advance in discovering appliances by which electricity can be practically used for lighting, and the rapid progress made in this direction shows how indefatigable they are in such matters, and how capable they are to effect the purpose they have in view. They have ever evinced a wonderful degree of ingenuity in mechanical constructions, and their superiority has been acknowledged throughout the world by the readiness with which their inventions are adopted. It is truly said that "A prophet is not without honor, save in his own country," and the same axiom might be justly applied to new inventions.

In England and in Europe they are far ahead of our own people in applying our inventions to their own benefit. There are already three points on the English coast where the electric light is used in lighthouses. Two lighthouses are using it in France, and Russia has one at Odessa, and with all the progress already made in electric illumination, the United States have not yet placed it in any lighthouse.

In England, at Charing Cross, a 20-horse engine sustains 60 electric lights, of which 10 are at the Victoria station of the District railway, 40 on the banks of the Thames, and 10 on Waterloo bridge. There is a distance of over two and a half miles between their extreme points. The longest radius from the electric engine is a mile and a half, and this with the number of lights in proportion to the power of the engine, demonstrates that previous calculations as to the capability of this method of lighting have been greatly below what they should be.

The electric light has been recently introduced into some of the mines on this coast with very favorable results. It has given full satisfaction in one of the leading gravel claims in Nevada county, in this State. Now that a commencement has been made in its application to our mines, and also in a moderate degree in the illumination of some of our public buildings, we hope that we will soon outstrip our European brethren in putting into use this valuable light.

The Free library in San Francisco use

three electric burners, which give a strong, white light sufficient to illuminate the large room, and at a cost of about one-third of the gas heretofore used, with a far greater volume of light. The cost would be still less if the charges for light were confined to the actual time it is used; the Electric Light Co. charges for the whole time that the electricity is generated. The lamps are used from about 5 P. M. to 9:30 P. M., and the company charge the library for them until 12 midnight, which is two and one-half hours in which they are not used.

CATALOGUE OF THE PACIFIC COAST FUNGI.

Previous to the year 1876 nothing had been accomplished in the study of the fungi of this coast, with the exception of a few species collected by the Wilkes expedition, which were at that time referred to Professor Torrey for identification. But four or five of these were determined and of these but one or two can now be traced. Since that period, although the flowering plants have been most thoroughly studied, the fungi of this coast have been entirely neglected.

Fully realizing the importance of the undertaking, not only for its scientific value, but also from an economic standpoint, Dr. H. W. Harkness, of this city, and Justin P. Moore, of San Rafael, some four years since determined to devote their leisure to making a collection of the Pacific Coast fungi. These gentlemen have now published, under the auspices of the California Academy of Sciences, a catalogue, of which we have seen the proof-sheets. The list is the first of the kind ever published on this coast, and will be of great service, not only inciting many others to a study of this most interesting department of botanical research.

The authors do not claim that the catalogue contains anything like a full list of the fungi of this coast, or even of their own collection. It is merely a catalogue such as they know to be found here, and such as they have fully determined. A large mass of material still remains in their hands for study and determination, as leisure will allow. In the cave fungi, or fungi of our mines, comparatively little has been done. Want of literature on this subject has been a great hindrance to them in their work.

While they have not been able to visit every portion of the coast, a glance at the catalogue will show that their explorations have extended over quite a wide range of territory—from Mt. Shasta on the north to Fort Yuma on the south—from the seashore to the eastern limit of the Sierras.

In reference to the geographical distribution of the fungi, it is noted that most of our species found upon the low lands are common both Europe and America, whilst of those growing along the Sierras, many are the same as the Alpine species of Europe; others are peculiar to our own coast. Again, it will be seen that the hot and arid desert at the south yields species common to Africa. The distribution, the authors have aimed to make clear by giving in every instance the locality where found. They have, in the case of the Hymenomyces and other edible fungi, indicated the fact by appending an *E.* They have also added the habitat of our parasitic fungi, to aid the student, and have indicated the *new species*.

Messrs. Harkness and Moore have brought a great deal of intelligent labor to bear on their task. Both gentlemen are enthusiasts in their specialty, and the result of their work is a credit to themselves and the society under whose auspices the catalogue is published. They have followed in the first part the arrangement of the genera as given by Fries, in his *Hymenomyces Europæi*. For the rest they have adopted the order, as far as practicable, as given in Cook's *Hand-book*.—*Science Record.*

JAMES W. CLAYTON, for fourteen years clerk in the House of Representatives, died at Baltimore recently.

MEXICAN CLOVER AS A FORAGE PLANT.

In the last report of Gen. Le Duc, Commissioner of Agriculture, there is an engraving of the so-called "Mexican clover" (*Richardsonia Scabra*). It is an annual plant of the natural order Rubiaceæ, which contains the coffee, cinchona and ipecacuanha plants. It is a native of Mexico and South America, and has within a few years become extensively naturalized in some parts of the South. Under favorable circumstances it grows rapidly, with succulent, spreading, leafy stems, which bear the small flowers in heads or clusters at the ends of the branches and in the axils of the leaves. The flowers are funnel-form, white, about half an inch long, with four to six narrow lobes, and an equal number of stamens inserted on the inside of the corolla tube. The stem is somewhat hairy, the leaves opposite, and, like other plants of this order, connected at the base by stipules or sheaths. The leaves are oblong or elliptical and one or two inches long. Mr. Matt. Coleman, Leesburg, Sumter county, Florida, writes as follows to the Commissioner of Agriculture: I inclose a specimen of a plant called Spanish clover. The tradition is that when the Spanish evacuated Pensacola this plant was discovered there by the cavalry horses feeding upon it eagerly. It grows on thin pine land from four to six feet, branches and spreads in every direction, forming a thick matting and shade to the earth. One hand can mow as much in one day as a horse will eat in a year; two days' sun will cure it ready for housing or stacking, and it makes a sweet, pleasant-flavored hay; horses and cattle both relish it. The bloom is white, always open in the morning and closed in the evening. Bees and all kinds of butterflies suck the bloom.

This plant was brought to the attention of the department in 1874, and samples for analysis were sent from Mobile by Mr. Chas. Mohr and by Dr. J. F. B. Rohmer. Mr. Mohr's account of it and the chemical analysis made by Dr. McMurtrie were published in the annual report for that year. Mr. Chas. Mohr recently says of this plant: Along the seaboard of this State the so-called Mexican clover is found spreading extensively; it covers the sandy upland soils completely with its prostrate, succulent, leafy stems, bearing the small white funnel-form flowers in terminal heads and axillary whorls. In regard to its nutritive value, it is scarcely inferior to clover; horses, cattle and sheep are fond of it, particularly of the hay. As a green manure it is of the greatest benefit to the farmer in the lower pine region.

In addition to its value as a fodder plant it is believed to have much medicinal value. In Jamaica it furnishes what is called white ipecac, which has been used as a substitute for the genuine ipecac.

SODA FOR BURNS.—All kinds of burns, including scalds and sunburns, are almost immediately relieved by the application of a solution of soda to the burnt surface. It must be remembered that dry soda will not do unless it is surrounded by a cloth moist enough to dissolve it. This method of sprinkling it on and covering it with a wet cloth is often the very best. But it is sufficient to wash the wound repeatedly with a strong solution. It would be well to keep a bottle of it always on hand, made so strong that more or less settles on the bottom. This is what is called a saturated solution; and really such a solution as this is formed when the dry soda is sprinkled on and covered with a moistened cloth. It is thought by some that the pain of a burn is caused by the hardening of the albumen of the flesh which presses on the nerves, and that the soda dissolves the albumen and thus relieves the pressure; others think the burn generates an acrid acid which the soda neutralizes.

THE number of men available for military duty in the United States is stated by the Secretary of War to be 6,516,758.

CHANNEL OF THE MISSISSIPPI AND ITS TRIBUTARIES.—The improvement of the channel of the Mississippi and its tributaries, by an elaborate system of levees, is now being urged upon Congress. The House committee, to whom the subject had been referred, are reported in the public prints of the past week, to have taken a very sensible course in reference to it. The

dition of the river from its mouth as far up as St. Louis. Some difference is reported to exist in the minds of this body as to whether either the levee or the jetty system is the best method of attaining the desired end. The total cost of the proposed system of levees is estimated to be about \$60,000,000. Meantime, the "Mississippi River Improvement Convention" has met at

MEXICAN CLOVER.—*Richardsonia Scabra*.

committee, it is said, have concluded, after a thorough and careful consideration of the whole subject, that the best mode of ascertaining the necessities of the districts affected by the river will be by personal examination and inspection. They have, therefore, proposed to send a committee to visit the localities in question, and to obtain the opinions of experts, pilots, and others who are familiar with the physical con-

dition of the river from its mouth as far up as St. Louis. Some difference is reported to exist in the minds of this body as to whether either the levee or the jetty system is the best method of attaining the desired end. The total cost of the proposed system of levees is estimated to be about \$60,000,000. Meantime, the "Mississippi River Improvement Convention" has met at Quincy, Ill., and adopted a resolution appointing an executive committee to prepare a memorial to Congress, setting forth in detail the views of the convention on the subject of the improvement of the river channel, to collect and publish statistics bearing on this subject for the information of the people and the government, and to use all proper means to promote an early and favorable action on the subject by Congress.

ARTIFICIAL GEMS.

Dr. Percy writes to the London *Times* with regard to Mr. Maclean's alleged discovery: "I agree with Mr. Maskelyne in thinking there is reason to expect that the diamond will some day be artificially produced. But, if so, possibly a very long period will be required to form a crystal of sufficient size and quality to be of any commercial value. Alumina, the substance of sapphire and ruby, has long ago been crystallized, yet to this day no artificial sapphire or ruby worth a farthing has appeared in the market. The balas ruby, or red spinel, was formed about forty years ago by Ebelmen, in small but distinct crystals, of which I have specimens in my collection; yet, so far as I am aware, the natural gem is alone known to jewelers. The conditions under which nature has crystallized carbon in the cubical system must be extraordinarily rare, seeing that a small room would probably suffice to contain all the diamonds that have hitherto been discovered. The possessors of diamonds have not at present any reason to fear that the value of their property will be lowered by the crystallized carbon of the chemical laboratory."

In reply to Mr. Story-Maskelyne's letter on this subject, referred to in last week's *Iron*, Mr. McFear says: "I have just seen Mr. Maskelyne's letter in the *Times*, and am surprised to learn first from it of the negative results Mr. Maskelyne has obtained, while an interview between us, fixed by him for Tuesday, 6th inst., is still pending. The statements in his letter do not prevent me from affirming in the most positive manner that I have been able to produce carbon in the diamond modification. I have been able on the only two occasions I have tried the experiment to burn the small translucent particles in oxygen gas, and I have been able with the greatest ease to scratch deeply both amethyst and topaz with them. As I do not despair of convincing Mr. Maskelyne himself of his being, to say the least of it, premature in his conclusions as to the problem of crystallization of carbon having been successfully solved, and as it has been accomplished by means very similar to those which in the concluding paragraph of his letter he suggests as being possible, I trust the scientific world will suspend their judgment until more ample evidence has been laid before them." At a recent meeting of the Glasgow Philosophical Society, St. John Vincent Day read a communication from Mr. Robert Baxter, of Dundee, regarding the production of artificial diamonds. Mr. Baxter began to experiment in 1876, but did not obtain successful results till April, 1877, when pure crystals of carbon were produced. The crystals then obtained were all lost through careless handling. Mr. Baxter endeavored to procure more, but for several months did not succeed. His crystals had been tested in a manner leaving no doubt about their genuineness. He had tried without success to produce large crystals, but saw no reason to prevent their ultimate production.

MOTIONS OF THE GROUND.—It will be remembered that M. Plantamour directed attention some time since to certain displacements of the bubble in a fixed spirit level, indicating movements of the ground. He has now made a year's observations of these phenomena in a cellar at Secheron, with two spirit levels, one directed north and south, the other east and west. The result is the manifestation of periodic movements of rise and sinking of the ground, which, in a general way, appear to be determined by the exterior temperature. After that the configuration, and, perhaps, also the nature of the ground, probably affect the intensity of the movements.

A NEW kind of crockery, designed to fill the place of earthenware to some extent, has recently been introduced. It consists of cotton pulp, or felt, glazed with a composition into which dissolved glass largely enters. It is a durable, elastic material, possessing neither the great weight nor brittleness of earthenware; but it has yet to undergo the test of general use.

PAPER HANGING.

Paper-hanging is quite a modern invention, after all; that is, in its Western use. In the East wall-papers had been known from time immemorial; but it was only toward the end of the seventeenth century that they were brought from China, imported into England and Holland along with a multitude of other indianes and chinoiseries. France took hold of the idea and perfected it, and has hitherto produced the best, while Germany and Belgium have given the cheapest papers; but England has lately come to rival France. There is now a vast variety to choose from everywhere; mounting from the rough kitchen fourpenny paper that, put on wrong side out, when its pattern is but slightly stamped, presents a uniform gray surface like something a great deal more expensive, and where the pattern is heavily stamped, presents a damascened gray surface, to those elaborate in art and material, whose use in a single room requires an expenditure of a small fortune.

There are the common satin-faced ones, the gilded, silvered and bronzed grounds, embossed gilt and mica, imitation of silks and tapestries, cretonnes and chintzes, raised and stamped velvets; there are some like delicate muslins embroidered in chain stitch and lined with color, at six dollars a roll and upwards; others like the dark, old, embossed Spanish leathers buttoned to the wall, from nine to twelve dollars a roll, according to present prices; there are the thick, Japanese papers, where the black ground riots in fantastic assemblage of all rich colors, where a gold ground carries birds and butterflies and fans in charming profusion, and those of lighter, less marked and less agreeable characteristics, at about the same price as the leather papers; others yet more expensive, thick and heavy, a finely-glazed porcelain-like representation of tiles of all sorts, for those who will have them in imitation; and in addition there are the frescoed papers, and those for ceilings, for dadoes and for friezes. It would be hard if out of such a variety one could not get up rooms that would be satisfying to the most demanding sense of the beautiful.

KILLED BY A METEOR.—As David Meisenthaler, the well-known stockman of Whitestone township, was driving his cows to the barn about daylight this morning, he was struck by an aerolite and instantly killed. It appears as if the meteor had come from a direction a little west of south, and fell from an angle of about 60 degrees, for it first passed through a tall maple, cutting the limbs as clean as if it had been a cannon ball, and then struck him apparently on or under the shoulder, passing clean through him obliquely from below the right shoulder to above the left hip, and buried itself about two feet in the soft black ground. The poor man's head and legs were uninjured, but the greater part of his body seems to have been crushed into the earth beneath the terrific aerolite, which is about the size of a common patent bucket, and apparently of a rough round shape. It appears to be formed of what is called iron pyrites.—*Bucyrus (O.) Journal.*

ALUMINIUM TELEGRAPH WIRES.—German telegraph engineers have lately been experimenting with aluminium as a material for telegraph wires. This metal can easily be drawn out to a very much finer gauge than is possible with iron, and its conductivity is twice as great as that of iron wire. Its excessive cost has hitherto prevented its use for the purpose indicated, but it is found that an alloy of aluminium and iron can easily be made, which will produce a wire both finer and stronger, and less susceptible to atmospheric changes than iron wire, while it is much superior as a conducting medium.

MAGNITUDE OF LABOR.

There is nothing that has ever attained the vast proportions that labor has acquired. It extends over the entire globe, so far as the operations of man are concerned, and throughout the seemingly unlimited realms of space, under the exertions of the Omnipotent Creator. Leaving out of consideration the wondrous array of stellar systems, and narrowing the view to the work of the human race, the field is still too ample for a detailed narration. It can, even in this scope only, be treated of in generalities. The animals labor, but it is only to the extent of self-preservation. The beaver builds his dam across the running stream; the birds construct their nests in the branches of the trees; the burrowing animals dig into the surface of the earth; and the insects spin their webs or construct their fragile cells—each and all guided by the natural law of permeation of their progeny.

The labors of man extend to a higher and nobler plane. Originating in self-preservation and protection of offspring, they have risen to the more elevated rank of a creative power, which has encompassed the earth and left no spot upon its surface undisturbed by their multifarious results.

In every phase of social life labor holds the sole sustaining influence, deprived of which the fabric of society would meet with annihilation, and man descend to a scale below the beaver and the bird in practical utility. In the advancement of the well-being of the human race, labor has ever been the motive force which has accelerated its progress. It has stimulated the intellect, and conferred aptness upon muscular manipulations. It has given ideas to the brain, and deftness to the hand. Its results have pointed out new methods of attaining them, which have required less muscular action and more brief periods of time, with greatly increased results.

Nothing can be effected without labor; with it, all things can be accomplished. When in operation, it is vitality; when inactive, it becomes inertia and death. It crosses continents in its gigantic strides, steps over oceans and traverses the globe, carrying with it beneficial results, and imparting as it goes, ardent desires for a continuing increase of its blessings.

It points out the track of the seemingly erratic comets; it maps out the path of the sun, moon and stars; it measures the far-distant worlds, and weighs them with positive accuracy. It has constructed instruments by which their constituent forms of matter are made known. It overleaps the confines of the earth, and extends its efforts to the remotest regions of stellar existence.

It razes mountains to the level of the plain, or cuts its passage through miles of their base. It deepens rivers, fills up lakes, makes fertile the desert. Earth is but one of the compartments of its workshop, and in every section of that compartment it demands and compels activity. Its avocations are unlimited, extending from the least to the greatest productions, from the sharpest point of a needle to the massive form of the pyramid; operating upon the formations of bodies almost too fragile to be touched, and working upon others of adamantine durability.

It is a magnificent temple of God-like proportions, so vast, so extended that it embraces the whole realm of creation; so perfect in its construction that defects are unknown; so enduring in its material, that it will still exist when earth shall have passed away; so wisely planned that beauty and harmony are presented at every point, and its resultant will be the advanced welfare of man. Omniscience only could have invested labor with its grandeur and greatness, and have stored it so fully with benefits and blessings. Its dome rises to the highest heavens and is lighted by the stars; its walls contain all created matter, and its foundations rest upon unswerving utility. Into this vast hall all must enter and perform their task, which to some will be hard to accomplish, to others, easy of performance. There is no exemption from this duty.—*Mining and Scientific Press.*

THE PROGENITOR OF OUR HORNED STOCK.

An interesting book was lately published in England, entitled "The History of the Wild White Cattle," written by Rev. J. Storer, of which the special purpose was to trace back the ancestry of ancient herds of white cattle in Great Britain, of which there are still remaining bands which have been kept free from admixture of other blood. With this special design of the writer we have nothing particular to do at this time. It is rather from the fact that his researches led him to a race of cattle, the blood of which probably was a factor in the establishment of our best known domestic breeds, that we give his conclusions and a drawing which presents the outlines of the original type as nearly as they can be portrayed.

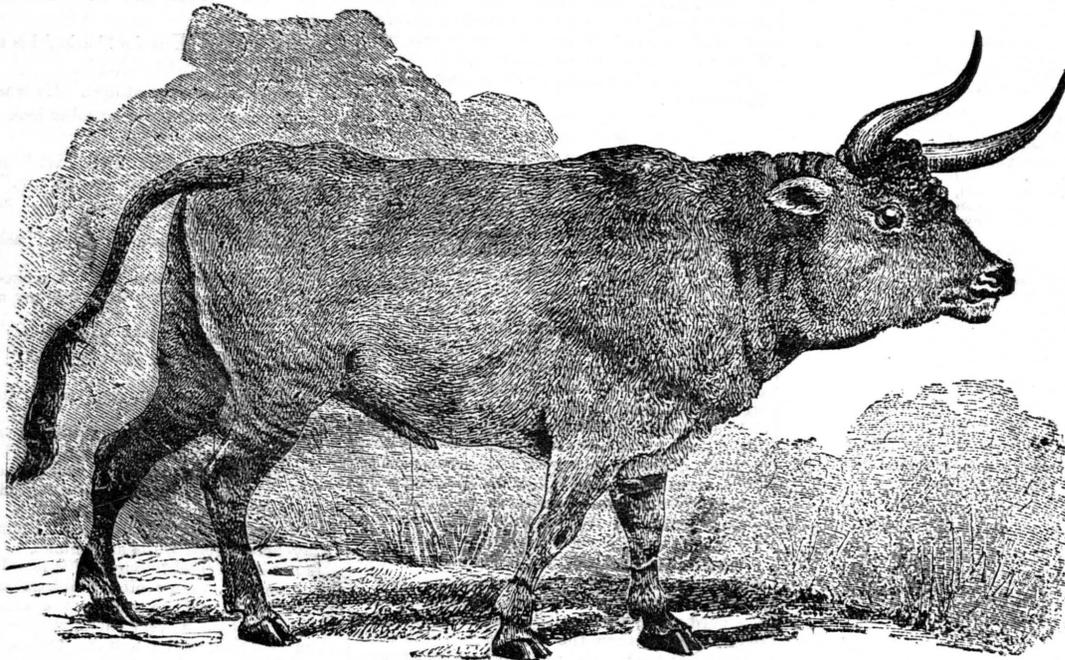
Mr. Storer believes that the *Bos Urus* was first introduced into Europe during the Pleistocene age, which includes the Drift epoch and cave deposits and bones, which are a part of

low parts of many Swiss lakes, there are those of the wild bull." It is also "beyond question that towards the close of the stone and beginning of the bronze period the lake dwellers had succeeded in taming that formidable brute the *Bos primigenius*, the Urus of Cæsar." "In a tame state its bones were somewhat less massive and heavy, and its horns somewhat smaller than in wild individuals. Still, in its domesticated form it rivaled in dimensions the largest living cattle, those of Friesland in North Holland for example. When most abundant it had nearly superseded the smaller race." (The above quotations are all taken from Sir C. Lyell's "Antiquities of Man," fourth edition, 1873, chap. ii., where will be found fuller information on this interesting subject.) Readers will not fail to observe the speedy change which in some respects was produced in the wild bull by domestication.

When we advance farther, and come to historic times, we find frequent notices of the Urus, or wild bull. Herodotus, writing 400 years B. C., tells us that when the army of Xerxes was passing through a part of Pæonia

pire, the Urus still held his ground, though in decreasing numbers, as a wild animal on the Continent of Europe. The martyr Saturninus was attached to the horns of a wild bull, and dragged to death at Toulouse, on the spot, where afterward one of the most ancient churches of Gaul was built, named *du Taur*. It is said that the Spanish bull-fights took their rise from the chase of this animal in the Pyrenees. The Urus is also mentioned as existing in the Vosges mountains, and in the Ardennes; and it was hunted by Charles the Great, near Aachen. Still through the mediæval period the *Bos Urus* lived, but within much circumscribed limits, principally in Poland, Lithuania and Muscovy, whose writers speak of it, till, in the 15th or 16th century, the wild bull became finally extinct in Continental Europe.

A REMEDY MAKING SPECTACLES UNNECESSARY.—Dr. W. Cheatham writes to the Louisville *Medical News*, that he has found that the use of the sulphate of eserine makes it unnecessary to use spectacles in case their use is called



IDEAL SKETCH OF THE ANCIENT WILD BULL OF EUROPE—*Bos Urus*.

the post-tertiary of the geologist. It was everywhere abundant as a wild animal, both on the continent and in the British Isles, and in later, though prehistoric times, still existed in both, as its fossil remains everywhere testify, though perhaps more sparingly in Britain. On the continent the Urus was well known during the historic era. Everywhere through what may be called Central Europe we find this gigantic ox wild. Mount Hæmus, the Carpathians running through the middle of Europe, and the Hyrcanian forests, continuing from them almost through Germany, and connecting them with other mountain ranges, were his favorite haunts; from Scythia, Sarmatia, and the Black sea to Denmark and the shores of the Northern ocean—everywhere we find him. During the later stone age, in the shell mounds or *kjokhennodding* (kitchen-middens), consisting of immense heaps of refuse shells, thrown up on the shores of nearly all the Danish islands by the Danish aborigines, "the remains of the wild bull (*Bos Urus*, Linn.; *Bos primigenius*, Bojanus) are found in such numbers as to prove that the species was a favorite food of that ancient people." "Prof. Rutimeyer, of Basle, has shown that among the remains of wild animals dredged up from the ancient Swiss lake dwellings, built on piles in the shal-

and Æstonica, which lay between Southern Thrace and Macedonia, and indeed formed part of the latter, the country abounded with wild bulls, which must have been animals of great power, for the same country was infested by lions so ferocious that they attacked at night the camels carrying the provisions of the army. The existence of these wild bulls is confirmed by Hippocrates, a writer who shortly followed; and subsequently, Philip of Macedon is said to have hunted and destroyed on Mount Orbelia, in consequence of its devastations, a beast of this description, and to have hung up its spoils in the vestibule of the temple of Hercules. During the time of the Roman Empire, which extended itself to the barbarous regions north of Italy and Greece, the native country of the Urus on the Continent, this animal was well known, and is mentioned by various Latin writers, too numerous to quote. Pliny says: "Germany, conterminous with Scythia, produces two kinds of wild cattle—one, the Bison, distinguished by his name; the other, of excessive strength and swiftness, the Urus, to which the ignorant vulgar gives the name of Bubalus;" and he says that "both of these animals were carried to Rome and viewed by the people in the circus."

In the troubled ages which accompanied and followed the decline and fall of the Roman Em-

for by a flattening of the cornea from old age—a very common ailment, called presbyopia. He states that this drug possesses the property of acting especially on the ciliary muscle, and contracting it, which contraction increases the convexity of the cornea. He recommends dissolving one gram of the sulphate of eserine in one ounce of water, and putting one drop in each eye at bed-time. It produces at first the opposite defect—a too great convexity of the cornea, which is called myopia, or near-sightedness, which, however, soon passes away. He thinks the use of this remedy perfectly safe, and also adapted to cases of glaucoma and other inflammations of the eye, in cases of weakness resulting from overwork, general debility, diphtheria, etc. He says that notwithstanding the use of spectacles in case of presbyopia gives comfort to the eyesight, there is also, however, always some trouble connected with them, which patients are often anxious to dispense with, and thinks they should be humored in this respect. While this may be very true, we advise caution in using this new remedy, because, as the effects are only temporary, a continuous use is of course intended, and experience has not yet shown what secondary effects may result from often repeated applications.

GOING HOME.

Kiss me when my spirit flies—
Let the beauty of your eyes
Beam along the waves of death,
While I draw my parting breath
And am borne to yonder shore
Where the billows beat no more,
And the notes of endless spring
Through the groves immortal ring.

I am going home to-night,
Out of blindness into sight,
Out of weakness, war and pain,
Into power, peace and gain;
Out of winter, gale and gloom,
Into summer breath and bloom;
From the wand'rings of the past
I am going home at last.

Kiss my lips and let me go—
Nearer swells the solemn flow
Of the wondrous stream that rolls
By the border-land of souls—
I can catch sweet strains of songs
Floating down from distant throngs,
And can feel the touch of hands
Reaching out from angel bands.

Anger's frown and envy's thrust,
Friendship chilled by cold distrust,
Sleepless night and weary morn,
Toil in fruitless land forlorn,
Aching head and breaking heart,
Love destroyed by slander's dart,
Drifting ship and darkened sea,
Over there will righted be.

Sing in numbers low and sweet,
Let the songs of two worlds meet—
We shall not be sundered long—
Like the fragment of a song,
Like the branches of a will
Parted by the rock or hill,
We shall blend in tune and time,
Loving on in perfect rhyme.

When the noon-tide of your days
Yields to twilight's silver haze,
Ere the world recedes in space,
Heavenward lift your tender face,
Let your dear eyes homeward shine,
Let your spirit call for mine,
And my own will answer you
From the deep and boundless blue.

Swifter than the sunbeam's flight
I will cleave the gloom of night,
And will guide you to the land
Where our loved ones waiting stand,
And the legions of the blest
They shall welcome you to rest—
They will know you when your eyes
On the isles of glory rise.

When the parted streams of life
Join beyond all jarring strife,
And the flowers that withered lay
Blossom in immortal May—
When the voices hushed and dear
Thrill once more the ruptured ear,
We shall feel and know and see
God knew better far than we.

—James G. Clark.

HOW A BOY BECAME A PAINTER.—Mr. S. G. W. Benjamin, in the last *Harper*, says of Benjamin West, the great painter: At nine years of age he drew hairs from a cat's tail, and made himself a brush. Colors he obtained by grinding charcoal and chalk, and crushing the red blood out from the blackberry. His mother's laundry furnished him with indigo, and the friendly Indians who came to his father's house gave him of the red and yellow earths with which they daubed their faces. With such rude material the lad painted a child sleeping in its cradle, and in that first effort of genius executed certain touches which he never surpassed, as he affirmed long after, when at the zenith of his remarkable career.

ONE of the lady teachers in a Reno public school, a few days since, was laboring with an urchin on the science of simple division. This is what came of it: "Now Johnny, if you had an orange which you wished to divide with your little sister, how much would you give her?" Johnny: "A suck."

A SMALL boy could not see why the "leaves" of tables, not resembling any leaves with which he was familiar, should be so called. At last he found it out. "I know," he cried. "They are called leaves because you can leave them up or you can leave them down."

THE FOX AND THE MASK.

I will tell you a very old fable which I think a very clever one:

A fox once happened somehow to get into a theater; and on the floor was lying a very handsome mask, made to be worn by some actor when he played the part of a hero.

Among the ancient Greeks—and this fable was written by one of them—actors always wore a mask, which was made beautiful or ugly, serious-looking or comic, to suit the character.

Now a fox is a clever, prying fellow; he turned the mask over and over; he looked at the outside, and looked at the inside. The outside was beautifully painted, and smooth, and come plete; the inside was hollow.

"A fine, handsome head!" said the fox, "What a pity it is there are no brains."

Now there are some little girls and boys who think a great deal more about the outsides of their heads than the insides; who do not learn their lessons properly, nor care about improving their own brains. If they spend so much time and thought on their looks, they will be just like the mask, and people will think of them as the fox thought: "What a fine head this is!" What a pity there are no brains in it!

Pray, my little friends, think of this.—*Little Wide Awake*.

THE TYRANNICAL HUSBAND.—Amongso-called gentlemen there is often the overbearing, tyrannical husband, at whose voice children and servants flee; soured, probably, by difficulties in his business or profession, but surlily keeping his trials from his wife, and snappishly resenting all her attempts to win his confidence. Who so capable as she to soothe and to aid, by her womanly tact and discrimination, made keener by its concentration in her little world—home; and have we not sacred warrant that the wife is a helpmeet for the man, not a slave to minister to his material wants only, whilst he grudgingly doles out his money, never dreaming that the order of his house is only arrived at by a thousand little domestic cares, so heavy in the total, yet a labor of love when lightened by kind, husbandly interest. This man acts as if he were devoid of affection himself, and grossly presumes on his wife's early inculcated sense of duty.

"ORIENTAL" CURTAINS.—Take cream-colored cotton. At the top and bottom put first a strip of black calico or alpaca, about a quarter of a yard wide; then a little wider strip of dark red or yellow, then the black again, the same width as at first. The top and bottom must be alike, and the strips neatly stitched together on the wrong side. Very handsome heavy curtains are made of coarse ladies' cloth, or rep dress goods. This being double width, only one strip is required for a window. They are especially designed for parlors or dining rooms, something lighter being prettier for the common sitting or sleeping rooms. It is well to line them, for instance with rose-colored or yellow silesia (which you can get for fifteen cents a yard), putting gimp or fringe on the edge or not, as suits your fancy.

"GOING to leave, Mary?" "Yes, mum; I find I am very discontented." "If there is anything I can do to make you comfortable, let me know." "No, mum, it's impossible. You can't alter your figger to my figger, no mor'n I can. Your dresses won't fit me, and I can't appear on Sundays as I used at my last place, where missus's clothes fitted 'xactly."

GRANDMA (with whom the girls have had a slight difference of opinion): "I'm sure, girls, I don't know where you get your nasty temper from." Nellie: "Certainly not from you, grandma, for you have never lost any."

"WHAT a beautiful sight!" exclaimed Mrs. Jones, rapturously, as she looked out over the beautiful scenery from a Pennsylvania railroad car. "Yes," replied Jones, without raising his eyes from his paper—"anthracite."

A SCARECROW NOT A SCARECROW.

An umbrella for a scarecrow
Was in a corn field placed,
And with loud caws the sty old crows
Around it gravely paced;
When suddenly a shower fell,
And under it they went,
And staid until the rain had ceased,
As in a little tant.
And said they, as they all trooped out,
"That man's a jolly feller;
Not only plants the corn for us,
But lends us his umbrella!"

—*Harper's Young People*.

"SORRY IS NOT 'NUFF."

"Allan! Where is Allan?"

A moment ago he was playing with his little cart in the yard, hauling dirt to the currant bushes. I cannot tell how many cartful he carried. He was as busy as a little man. But Allan was gone; there is his cart.

"Allan! Allan!"

"I'se here," at last said a small voice from the back parlor.

"What are you there for?" asked his mother, opening the door and looking in.

Allan did not answer at first. He was standing in the corner with a very sober look on his face.

"Come out to your little cart," said his mother; "it is waiting for another run."

"I'se not been in here long 'nuff," said the little boy.

"What are you here for at all?" asked his mother.

"I punishing my own self. I picked some green currants, and they went into my mouth," said Allan.

"Oh, when mother told you not to! Green currants will make my little boy sick," said his mother, in a sorry tone.

"You needn't punish me," said Allan. "I punish my own self."

His mother had often put him in the back parlor alone when he had been a naughty boy, and you see he took the same way himself.

"Are you not sorry for disobeying mother?" she asked Allan.

"I sorry, but sorry is not 'nuff. I punish me. I stay here a good while and thinks."

Is not Allan right? Sorry, if it is only sorry, is not enough. How often children say they are sorry, and yet go and do the same thing again! That is a very short, shallow sorrow. Allan felt this; so he was for making serious work of it.

AN old farmer out in Indiana says that for his part he don't know where the present rage for trimming bonnets with birds is going to end. Only four or five years ago he bought his daughter a humming bird, next year she wanted a robin, the next a pheasant, and this season he declares he had to chain up his Thanksgiving turkey or she'd have had that perched on top of her head.

A MAN, passing through a gateway in the dark, ran against a post. "I wish that post was in the lower regions!" was his angry remark. "Better wish it was somewhere else," said a bystander. "You might run against it again, you know."

A MAN who had \$65 stolen from him received a note with \$25, saying: "I stole your money. Remorse naws at my conshens, and I send some of it back. When remorse naws again I'll send some more."

IMMENSE WAGONS.—Three immense wagons to be used in the mines of Colorado are being made in Chicago. The back wheels are six feet three inches in diameter and the tire is five inches wide. The wagons, including box, are nine feet high. They are each to be drawn by twenty yoke of oxen, and are capable of carrying ten tons each.

NEW INVENTIONS.

We publish descriptions of the following new inventions, obtained through Dewey & Co., Mining and Scientific Press Patent Agency, San Francisco:

HAY UNLOADER.—Jerry Tyler, Milford, Lassen Co., Cal. Patented Dec. 30, 1879. No. 223,082. The methods ordinarily employed for unloading and stacking hay and grain are: First, the employment of two-part nets, which lie in the wagon to receive the load. These nets are elevated bodily with their load by the aid of a derrick, and swung around to the place of deposit, when the fastenings are unlatched and the net allowed to part and drop the load. The second consists in connecting one side of the wagon net (which is made entire) with an unloading rope and pulleys, so that the load is rolled out of the wagon instead of being lifted, and thus much power is saved which was used in the first described method to lift the load. This method, which will serve to unload grain upon the table of a threshing machine, or upon a low platform or stack, cannot be employed to advantage in filling a barn or in building high stacks without the aid of other apparatus. This invention consists in the employment of a mast or support, having pulleys and hoisting ropes which are operated by a windlass, in combination with a continuous wagon net, which is adapted to receive the load, and which may be connected with the hoisting ropes when the wagon is brought to the barn or place of deposit, so as to roll the load up to any height desired without undue friction or pressure upon the side of the barn or stack. In combination with this, rollers or pulleys are employed, which are connected with the inner edge of the net, and by which sufficient tension may be brought upon the net to prevent the overturning of the wagon by the action of rolling the load out. By this construction, stacks may be built with a comparatively narrow base and very high, so that they present but a small area to be protected from the weather.

STEAM GENERATOR AND SUPERHEATER.—John B. Ward, 202 Sansome street, San Francisco. Patented Jan. 27, 1880. No. 223,825. This invention relates to an improved steam generator and superheater; and the improvements consist in mounting in the fireplace of the boiler a superheating or generating cylinder or chamber so constructed as to answer either the purpose of generating or superheating the steam as desired. This chamber is so connected with the interior of the boiler by pipes that at each stroke of the piston of the engine a supply of steam is admitted to the superheating chamber, in which it spreads in a thin annular sheet in such a manner as to admit of all the watery particles being immediately converted into dry elastic steam; but before being so highly heated as to injure the valves by burning out the lubricants, it is discharged into the engine cylinder. The chamber is of a proper size to hold about as much steam as the engine cylinder will take for each stroke, and at each stroke of the piston a fresh supply of wet steam fills the space in the chamber vacated by the dry steam, which has entered the cylinder.

COAL-OIL COOKING STOVE.—W. H. Wiester, S. F. Patented Jan. 27, 1880. No. 223,829. In this invention the improvements consist in the application of a single-sheet extension or heating plate to the top of the chimney in such a manner that when not in use the plate will not be heated, but when it is necessary to heat this plate to keep articles warm, the heat will be deflected so as to heat it from below without in any way affecting the draft.

THE combined length of new railroads projected in this country during 1880 will be 9,000 miles.

FRAUDULENT REPRESENTATIONS IN MINING.

When any great channel of enterprise is successfully inaugurated, all legitimate industries accessory to it are destined to flow in its course. They are the sustaining streamlets that supply the current of the channel. It is where they rightfully belong. It is where they should be found. The channel would be inoperative if they were not present. They constitute the arterial blood, which, flowing through it, imparts life and energy to it. In strict accordance with the laws of adaptation, they, while there, are in their true sphere.

But fungi will always be found upon the richest soil, and parasites will ever thrive upon the most nutritious vegetation. So in all channels of intrinsic value, there will be found schemers and fraudulent designers, who, going with the current, will hold forth illusive projects to ensnare the unwary, and by deception and falsehood inveigle their victims into disastrous speculations. If the loss entailed upon the unwary was the only evil arising from their pernicious operations, it, perhaps, would not be much of a matter of regret. It might in the end be a benefit by inculcating the growth of caution and due investigation. But, unfortunately, such is the fruit which matures from deceitful transactions. The deception which has led them into losses, to them appears but a natural result of the operations which legitimately belong to the channel upon which they have embarked with their venture. They do not discriminate between the false and the true; overlooking their own credulity and incautiousness they condemn all that is worthy of approbation. They are like the navigator who, lured by false lights, should anathematize all light-houses; or like the merchant, who, smarting under an ill-advised speculation, should declaim against all commercial transactions.

In no field of enterprise are the above remarks more appropriate than in that of mining. Properly conducted mining is not only a legitimate industry but it is also a profitable one. Its inducements for the investment of capital are greater in the way of profit than that of any other industry. Unfortunately, many who desire to avail themselves of its benefits are incapable of deciding between true and false statements in mining narrations. Knowing the desire of the many to engage in prosperous undertakings, the schemer ever stands ready to mislead them by false and glowing statements of the value of mines that are really worthless. Their only aim is to possess themselves of the money of those who listen to their lying assertions. There is not a mining district in the world but bears irrefutable evidence of the false representations of this class of men. The result has been that others who would operate in mines and bring intelligence and capital to aid in their development, are restrained from doing so by the wails of the losers. As far advanced as mining is at the present day, it would be still further on the way of successful operation, were it not for the result of the frauds that have been perpetrated by these schemers, who have placed lights where they would allure their victims to ruin.

It is the duty of the press to take a bold and firm stand against these artful and dishonest manipulators. Wherever a fraud is instituted it should be promptly exposed. If the papers in the locality of these mining claims that are so falsely overrated would at once decry the intended wrong they would ultimately reap the benefit of such a course. A few such errors, if allowed to culminate, would at last ruin the reputation and retard the progress of really good mining camps. They would keep capital away and would dishearten and discourage men of enterprise and ability from investing there. If they were checked in their incipency and put down by just exposure, the evil they would have produced would be averted. A condition of prosperity and success would exist, where, else, ruin and failure would ensue. In the dissemination of the truth, the local journal would

have strengthened its own foundation; while in abstaining from telling it, or in aiding in the fraud, it would certainly be weakening and undermining it. For a temporary gain it would establish a permanent evil. The journals in mining camps, particularly, should be like the beacons on the coast, warnings of the dangers to which the venturesome are liable.—*Scientific Press.*

PLUMBAGO AS A LUBRICATOR.—The *Engineer* gives this example of the value of black lead as a lubricator: "A fly-wheel shaft bearing, eight inches in diameter and 10 inches long, carried a load of nearly 10 tons. The bearing was supported on a box girder, and was lined with good brass. The engine could not be run, as this bearing invariably got nearly red-hot after a few revolutions; various oils, tallow, sulphur and gunpowder were tried with most indifferent success. By using a mixture of tallow and sulphur the engine could be run half an hour at a time, and once or twice has run a whole day, the shaft making 60 revolutions per minute. It was determined to have a new crank shaft with a longer bearing, but as at the last moment the use of black lead and tallow was suggested, a package of the ordinary black lead used for stoves was worked up with some tallow, the bearing carefully wiped, and the grease box on the cap filled with the mixture. The bearing never heated again unless oil was allowed to get access to it. The success of the plumbago as a lubricator was perfect. It should be added to the foregoing that while the principle of lubricating by graphite, or plumbago, is scientifically correct, and has in thousands of instances been practically illustrated, it has been damaged seriously by the use of impure graphite. For perfect success the graphite should be absolutely clean.

WHY DOES STEEL HARDEN?—Mr. James Nasmyth opens up a very interesting question in the following letter recently published in *Engineering*: "In these days of earnest scientific investigation, it is to me a matter of surprise that no special attention has been given to one of the most vitally important subjects, namely, 'the reason why' steel becomes hard on being suddenly cooled down from a red heat by plunging it into cold water. On this one simple but wonderful property of steel depends the entire range of those mechanical arts which lie at the basis of civilization, and by whose exercise we are enabled to rise above the savage condition. It occurs to me that it is from the want of due consideration of the enormously important consequences that arise from this wonderful, yet simple, property of steel, that the causes of so remarkable a change as respects hardness which results on suddenly cooling it from a red-heat condition, has prevented the subject from receiving special attempts to investigate its nature. While in these days the most powerful and active intellects are occupied in physical investigations, in searching into the nature of those actions in matters which are ever in progress around us, so far as I am aware no one has made an attempt to enter upon this vitally important subject. It is in the hope that these remarks may chance to direct the attention of some one who may have the ability and opportunity to enter upon the investigation to do so.

TO WASH FLANNELS.—Take soft water, as warm as you can bear your hands in. Make a strong suds, well blued. In washing fine flannels, wet but one piece at a time; soap the dirty spots and rub with the hands, as washboards full the flannels. When half clean, add three times as much blue as for cotton clothes. Use plenty of soap. When clean, have ready a rinse of the same temperature as the suds, rinse well, wring tight, shake briskly for a few minutes, hang out in a gentle breeze. When nearly dry, roll smooth and tight for an hour or two. Press with a moderately hot iron. If embroidered, press on the wrong side. Flannels washed in this way will look white and clean when worn out, and the quality will look better than when new.

HOW A GIRL HELPS HER MOTHER.

I have come to the conclusion that every girl at some time or other gets a scolding. Mother says I am the worst girl she ever knew. One day I felt so disconsolate at being in such a predicament, that on reaching school I immediately quizzed some of my school chums on the matter. To my great relief I found that they, too, were subjected to the same compliments from their mothers.

As we were going to move into a new house last fall, I left the district school, or, as I jokingly called it, I graduated to help mother in the turmoil of moving. After we had settled down in our new home the kitchen department was assigned to my care; for mother intends to make me a good cook and housekeeper. Having hot and cold water in the kitchen, I found it quite an easy though constant task. But after a month or two the novelty of cooking, even in a new house, wore off, although I had been honored with the name of cook.

One bright December morning I arose feeling anything but in sympathy with the weather. I had a headache and felt quite miserable. Mother came in when I was getting breakfast. "Now Mary," said she, "I see that you are not capable of doing the kitchen work alone. I have a plan which I think will be worth trying. We will change work once a week." This suited me better than I can tell.

"Why, is Mary sick?" asked father as he came into breakfast.

"No," said mother, "but we are going to change work once a week, commencing this morning." Father said he thought it was a very good plan indeed.

"You will see how the men will long for my week to come after this," said mother at breakfast time. I laughed and replied that I thought I would long for it as much as they did.

Mother always thinks she can do everything so much better than I can, and takes every opportunity to point out my failures and her successes. I tell her that when I have a success I am too modest to boast about it, and therefore she thinks I have all failures. I found my new duties quite refreshing after my former ones. They consisted of the week's washing and ironing, several beds to make and some sweeping. I hurry through the washing and ironing the first two days of the week, and except for about an hour each for the days following I have nothing to do until Saturday but what my fancy dictates. Then I have my company and play company myself. Send in my orders for dinner, and have nothing to do but to eat it when it is ready. I take real comfort knowing that after a meal I have not to get up and clear the table and wash dishes.

At the end of the week I again took my place in the kitchen. As I was cooking the breakfast my sister and brother came in.

"How do you like cooking, Mary, how do you like cooking?" they asked. I had to laugh. One would suppose that it had been years since I had been near a stove instead of cooking on one the week before. Though mother would not confess it at first she now says she is glad when her week in the kitchen comes to an end.

—*Mary J. Carter, in Pacific Rural Press.*

DISCIPLINE IN THE HOUSEHOLD.—"The mistress of a household," says Caroline E. Stephen, "has, before all things, to rule. I can believe that a mistress who was not loved might yet, by a firm, wise and just rule, maintain a wholesome moral atmosphere in her house; but a mistress who was not obeyed, however personally winning and popular, would, as mistress, be a mere disastrous failure and cause of failure in others. In practice we all know that fear and love can scarcely be altogether separated; a reason the more for giving fear its proper place."

It is very difficult to find fault with a dear little three-year-old who buries his head under the clothes and sings: "Now I lay me down to sleep, Pop goes the weasel."

THE DOG "LYON."

Mr. J. J. H. Gregory, of Marblehead, Mass., has a dog, Lyon, which, according to the stories told of him, is a wonderful dog.

Lyon is called a St. Bernard, but his body is white while his head is black; which, of course, renders pure blood impossible. However, in build, size, carriage and intelligence he is out and out St. Bernard. He carries himself with great dignity, trots right along, paying no attention to the most alluring whistle or call, further than to turn for a moment a reproving eye on the wicked interloper. Lyon's chief business is to take care of the cows; it is a business he himself has assumed, and he spends the days lying on the hillside, keeping them in full view, and should any intruder approach, his deep bay informs his master. He spends the night in the barn sleeping in front of them, varying the monotony by occasionally kissing the cows, when they in return kiss him. The going to or coming from pasture is frolic time, when he runs bounding ahead with loud barks of joy, and woe be to any other animal, dog, cow or oxen, that happen to be along the route, for Lyon rushes at them with the greatest fierceness, and though never doing any real injury, with loud bark keeps them imprisoned in some corner until his herd has safely passed. So much for a general introduction to dog Lyon; now for anecdotes illustrating his great intelligence:

A neighbor, well acquainted with the dog, was passing along the public road near by where the cows were pastured, when Lyon came bounding up to him with a whine. The man patted the dog on his head, calling him by name, and walked on. The dog followed after, continuing to whine, and after a minute or two seized the man by the coat and gently led him. The man stopped, when the dog dropped his hold on the coat, ran back a step or two, looked around and whined. Struck by the singular actions of the animal, "What is it, old fellow?" said he, and turned and followed him. The dog ran bounding forward with every demonstration of joy, led the way over a wall and down a precipitous ledge of rocks, to a piece of bog. Then he ran barking to one of the cows of his herd that in some way had strayed from the flock. The bog was almost inaccessible, and the man found a good deal of difficulty in getting the cow out and back to her pasture. When he had succeeded, Lyon leaped upon him with great joy; "he almost knocked me over," the man said.

A man called to deliver a load of coal at the barn. The man used his own shovel, and Lyon looked quietly on while the coal was unloaded. The teamster, having driven his cart from the barn, on looking back noticed that some coal had fallen between his cart and the step; he jumped out of the vehicle, and running back to the barn, entered, and glancing around for a shovel found one, and catching it up walked hastily towards the door, Lyon following close after. Just as he was about to step outside the dog quietly seized him by his pants, and held him fast and firm, and would not let him go until he dropped the shovel, when the dog instantly let go his hold. The driver then went to his cart, took out his own shovel, returned and threw in the scattered coal, at which Lyon made no objection.

While the dog was eating his dinner, a two-year-old child kept tormenting him. Lyon bore with the little one for some time with commendable patience, but finally looked up, and without either snarl or growl, quietly lifted one of his huge fore paws, pushed the baby gently down on its back on the grass, and with one paw used to pin the young tormentor to the earth, went on eating his dinner.

"FOREGOES" was the word given out at a written spelling exercise recently, and one little boy handed in, "Go, go, go, go."

DOMESTIC RECIPES.

STEWED BEEFSTEAK.—Dissolve some butter in a stewpan, and brown the steak on both sides, moving it often, that it may not burn; then shake in a little flour, and when it is colored pour in gradually sufficient water to cover well the meat. As soon as it boils, season with salt, remove the scum, slice in onion, carrot and turnip; add a bunch of sweet herbs, and stew the steak very gently for about three hours. A quarter of an hour before you serve stir into the gravy two or three teaspoonfuls of flour mixed with cayenne, half a wineglassful of mushroom catsup and a little seasoning of spice.

APPLE FRITTERS.—One pint of milk, six eggs, flour enough to form a stiff batter, a pinch of salt, half a teaspoonful of carbonate of soda, a teaspoonful of cream tartar; then slice some sour apples rather thin, and mix in the batter; fry in hot lard, browning them nicely on both sides. They are nice made of raisins or currants instead of apples, delicious, if made of canned peaches, and the juice of the peaches, well sweetened and poured over them when served, for sauce.

ROCK CREAM.—Boil a teacupful of the best rice till quite soft in new milk, sweetened with powdered loaf sugar, and pile it upon a dish; lay on it, in different places, square lumps of either currant jelly or preserved fruit of any kind; beat up the whites of five eggs to a stiff froth, with a little powdered sugar, and flavor with either orange-flower water or vanilla; add to this, when beaten very stiff, about a table-spoonful of rich cream, and drop it over the rice, giving it the form of a rock of snow. This will be found to be a very ornamental as well as delicious dish for a supper table.

SNOWBALL PUDDING.—Boil one quart of rich milk, and then thicken it with a table-spoonful of flour or arrow-root. Beat up the yolks of four eggs with three table-spoonfuls of white sugar. Then pour the milk slowly into the eggs and sugar, stirring all the time. Pour this custard into a pudding dish and brown it slightly. Beat up the whites to a stiff froth, adding four table-spoonfuls of sugar, and flavoring with lemon. Drop it on the custard (when browned) in the form of balls as large as an egg. Set it back in the stove to brown a little.

BEEF LIKE GAME.—Cut some slices of beef in square pieces, put on each a strip of bacon, dredge flour over them, skewer them into a rolled shape; fry them in butter; when brown, add shallots, a slice of lemon-peel, a spoonful of capers, two bay leaves, salt, spice, a wineglass of vinegar, and a glass of wine and a little water; stew still tender.

ESSENCE OF CELERY.—This is prepared by soaking for a fortnight a half ounce of the seeds of celery in a quarter pint of brandy. A few drops will flavor a pint of soup or broth equal to a head of celery.

BROILED POTATOES.—Parboil large potatoes, peel, and cut them into thick slices. Broil the slices on a gridiron over a clear fire until brown on both sides. Serve on a hot dish with pepper, salt and butter.

THE NOISE OF THE FINGER.—In the current number of the *Medical Record* Dr. Hammond says that when you poke the end of your finger in your ear, the roaring noise you hear is the sound of the circulation in your finger; which is a fact, as anyone can demonstrate for himself by first putting his fingers in his ears and then stopping them with other substance. Try it, and think what a wonder of a machine your body is, that even the points of your fingers are such busy workshops that they roar like a small Niagara. The roaring is probably more than the noise of the circulation of the blood. It is the voice of all the vital processes together—the tearing down and building up processes that are always going forward in every living body from conception to death.

BEE STINGS.

Nearly twenty years ago I lived in western Ohio. Our family consisted of my wife and myself, a little girl about three years old, and a little boy, a babe. One day my wife started on a visit on horseback, intending to return in the evening. I helped her on the horse, and went probably about thirty rods distance with her to let down the fence for her to pass through. During the time we left the children in the house, thinking they would not be likely to receive harm till I came back; but, to my great surprise, on returning to the house I found that the little girl had made her way to the bee-hives, and, I suppose, had thrust out one of her arms into a hive, as it stood up some distance from the ground, and in this way had stirred up the bees. When I took her into the house she was suffering extremely from the great number of stings which she had received. I took her upon my knee, and counted the number of stingers as I pulled them out from her face, arms and neck—I found 33—and afterwards discovered that there were as many more in her hair. Of course this looked to me like a very serious injury—enough to cause her death, if I could not adopt some mode of treatment that would be very effective. I had not been in the habit of using medicine in my family in a long time, but depended entirely upon water. After pulling out the stingers, I stripped the child, filled a tub half full of water, right cold from the well, and placed her in it for about a minute; then took her out and wrapped her in a sheet, and put her in the cradle. I repeated this process, bathing her about three times, ten minutes apart, and had the satisfaction of seeing it alleviate her suffering. After I had bathed her three times and wrapped her up warmly in the sheet, she dropped to sleep and did not wake up for about 20 minutes. Then the fever and pain woke her up, and I bathed her again. After two more baths she slept soundly, and on waking seemed to be nearly recovered. By the time her mother came home that evening, she was able to be around, with scarcely any marks of the stings upon her person. I do not believe that any other than water treatment would have brought about such a good result in so short a time.

BENEFITS OF EXERCISE.—In addition to the physical benefits derived from athletic exercise, it has a moral value; it affords a diversion and a vent to those animal energies which otherwise are sure to explode in debauch and all kinds of vicious excesses. The sympathetic thrill by which the mind accompanies a daring gymnastic feat, and the enthusiasm of athletic contests form the most salutary and, perhaps, the only normal gratification of that love of excitement which is either the legitimate manifestation of a healthy instinct, or else a wholly irremediable disease of our nature. The soul needs emotion as the body needs exercise—a fact we do not, as a people, realize. In times of scarcity the paupers of China and Siam silence the clamors of their hungry children by dosing them with opium; and for analogous reasons millions of our fellow citizens seek relief in alcohol.

BENZOATE OF SODA FOR DIPHTHERIA.—Prof. Klebs, of Prague, announces that the benzoate of soda is the best antiseptic in all infectious diseases. It acts, as the experiments of the author show, very powerfully. It is claimed that a daily dose of from 30 to 50 grammes to a full-grown man will render the poison of diphtheria inoperative. The benzoate is prepared by dissolving crystallized benzoic acid in water, neutralizing at a slight heat with a solution of caustic soda, drying, and then allowing the solution to crystallize over sulphuric acid under a bell glass. Large doses do not appear to be absolutely necessary. Good results may be obtained by the daily administration of about 12 grammes.

HOME-MADE ORNAMENTS.

"Bessie Victor" writes, for an exchange, an interesting article regarding home-made ornaments. "Rustic adornments," she says, "if thrown together indiscriminately, without regard to order or taste, will not only spoil the effect intended, but the article will be worthless. Those materials which differ in color should never be used on the same piece of work. Corn, beans, and other light-colored materials, if used on frames for bead-work, should be stained some dark color and varnished. The nicest way I ever saw them used, however, is to string them and form into baskets; and they can be formed into such a charming variety of shapes that their diversity is almost endless. They are beautiful used as fringes for baskets, corner-shelves and what-nots; and if painted dark brown and varnished resemble closely very handsome carvings.

"Oak bark is very pretty for rustic frames—in fact, any rough bark looks nicely made into frames. They need not be stained, as their natural color is the best, and a coat of varnish gives a beautiful finish. The corners can be ornamented by groups of acorn cups. To hang a rustic frame, string acorns on a stout linen thread, making tassels of allspice, trimmed with a gilt-paper band. A strip of gilt inside the frame is an improvement. If your picture is dark use a light frame; if light, a dark frame.

"While visiting a friend last week I saw a work-basket, the edge of which was beautified by a crocheted border in shell pattern. This was first starched very stiffly, tacked in place, pulled out smoothly and left to dry; afterward stained and varnished. The effect was beautiful. This style of ornamentation might be duplicated in frames for photos, borders for shelves, brackets, boxes, etc.

CHIPS.

THERE are no sweets in family jars.

"MAN," says Victor Hugo, "was the conundrum of the eighteenth century; woman is the conundrum of the nineteenth century." An American editor adds: "We can't guess her, but will never give her up—no, never!"

"WHY, Dick," said a lady teacher the other day, "you are getting to be an awfully good boy lately; ever so much better than you were last year. How is it?" "Oh! pshaw! Miss Hetty," said the youngster, "I don't have so much tum-tick-ache now."

At a municipal election—First voter: "I've just been and plumped for Carter." Second voter: "Plumped for Carter! Why, I don't believe you know him." First voter: "No; that's why I vote for him. He may be an honest man. I know the others."

"Now, Johnny, you've had a merry Christmas, and you must be good till next Christmas to pay for it." "Oh yes, of course, be good. I don't b'lieve you can hire me to be good for a year for a tin horse and story book just like what Bill Jones was going to trade me for three marbles. Not much."

INTERESTING DISCOVERY.—Considerable excitement is said to have been caused in Lyons by a discovery which purports to give to flax all the qualities and appearance of silk. It has long been known that silk is soluble, not only in powerful acids, but also in soda and chloride of zinc, and it is said that these qualities are made use of in the new process. A company is being formed with a capital of \$6,000,000 for the manufacture of the new textile.

ETCHING ON GLASS.—Etching on glass is performed by laying on the glass a ground of bees-wax, and drawing the design thereon with the needle, as in etching upon copper. Sulphuric acid is then poured on, and fluor spar sprinkled on it. After four or five hours it is taken off, and the work cleaned with oil of turpentine.

A DAILY action of the bowels, says *Hall's Journal of Health*, is essential to good health under all circumstances; the want of it engenders the most painful and fatal diseases. Nature prompts this action with great regularity, most generally after breakfast. Hurry or excitement will dispel that prompting, and the result is, nature is baffled. Her regular routine is interfered with, and harm is done. This is a thing which most persons do not hesitate to postpone, and in the case of riding to town, a delay of one or two hours is involved. This never can occur with impunity, in any single instance, to any person living. This very little thing—postponing nature's daily bowel actions—failing to have them with regularity—is the cause of all cases of piles and anal fistulas, to say nothing of various other forms of disease: fever, dyspepsia, headache, and the whole family of neuralgias. A man had better lose a dinner, better sacrifice the earnings of a day, than repress the call of nature; for it will inevitably lead to constipation, the attendant and aggravator of almost every disease. To arrange this thing safely, breakfast should be had at such an early time as will allow of a full half hour's leisure between the close of the meal and the time of leaving for the cars.

WHAT SMOKING DOES FOR BOYS.—A certain doctor, struck with the large number of boys under 15 years of age he observed smoking, was led to inquire into the effect the habit had upon the general health. He took for his purpose 38 aged from 9 to 15, and carefully examined them. In 27 he discovered injurious traces of the habit. In 22 there were various disorders of the circulation and digestion, palpitation of the heart, and a more or less taste for strong drink. In 12 there were frequent bleedings of the nose, 10 had disturbed sleep, and 12 had slight ulceration of the mucous membrane of the mouth, which disappeared on ceasing the use of tobacco for some days. The doctor treated them all for weakness, but with little effect until the smoking was discontinued, when health and strength were soon restored. Now, this is no "old wife's tale," as these facts are given under the authority of the *British Medical Monthly*.

STEAM HEATING.—The idea of heating buildings over a large area by steam from some central source seems to be gaining favor. There is probably more in it than the public in general are aware of. The experiment of steam heating has been tried in Detroit, and pronounced a success, since which time several cities have granted privileges for the improvement, among them Cincinnati. A select committee of the Board of Aldermen of that city, appointed to investigate the subject, concluded their work by agreeing unanimously to report the bill authorizing the laying of pipes under the streets, which the Board of Councilmen have already passed. The Committee made inquiries about the working of the system in Detroit, and all the information they received was favorable to it.

TESTING CELLARS FOR DAMPNESS.—Provide yourself with a thermometer, a glass tumbler filled with water; and a piece of ice; then notice how low your thermometer, when placed in the tumbler, has to sink before any moisture begins to show itself on the outside of the vessel of cold water. The lower the temperature to which the thermometer has to sink before moisture is precipitated, the less there is of it in the moisture of the cellar.

A MONUMENT is to be erected in commemoration of Gen. Stark's victory over the British at Bennington, Vt.

THE total coinage of the United States Mints during January was \$9,576,500.

THE Leopold Cross has been conferred upon Rosa Bonheur by the King of Belgium.

AZTEC RUINS IN NEW MEXICO.

The fame of the Aztec empire has been sounded by poet, novelist and historian ever since the vestiges of their ancient civilization first came to the eyes of modern explorers. Of late years science has applied its severer methods of analysis to the ruins of their prehistoric greatness, and though much has been learned concerning Aztec habitations and the minor materials which entered into their life methods, there is much still to be discovered. The latest investigation relating to these matters was made by the Government Survey of New Mexico, in 1877, results of which have been lately published. We shall present to our readers a few engravings showing the ground plans of the most notable ruins which were discovered in the Chaco canyon in New Mexico. These ruins are pre-eminently the finest examples of the numerous and extensive remains of the works of unknown builders to be found north of the seat of the ancient Aztec empire in Mexico, and of which there is comparatively but little known even in this day.

The Pueblo Pintado, shown in the engraving on this page, is the first run of any extent met in an approach from the southeast. Referring to the ground, which is the result of careful measurements carried mainly over the floor of the second story, it will be seen that the principal portion consists of an L-shaped building, the two wings of which, facing south and east within 20 degrees, measure upon their exterior surfaces 238 and 174 feet. The extremities of these wings are connected by a wall or row of small houses springing in an arch from one to the other. Many of the small apartments in this row have their walls so well preserved that they can be readily measured.

Almost the entire area of the court thus inclosed, approximately 200 feet by 160 feet, presents a very irregular and broken surface, as though it had been nearly all occupied by underground apartments, the roofs of which falling in produced the great depressions and mounds which now exist. The two outer walls, which are now standing in places about 30 feet in height, indicate an original elevation of at least 40 feet, unbroken by any apertures excepting the smallest kind of windows. The northern walls present the largest unbroken surface. The northwest corner and the western wall are much more broken down. The two interior longitudinal lines of wall in both wings are intact throughout most of their length to the top of the second and third stories, while the wall facing the court barely extends up into the second story.

Twelve miles from the Pueblo Pintado, and on the north side of the canyon, are the next important ruins, although there are several small ones on the way. The Pueblo Weje-gi, as Simpson calls it, is situated close under the bluff, and is a rectangular structure built around three sides of an open court which faces almost due south. Its exterior dimensions are 224 by 120 feet. The walls are still standing to a considerable height, and indicate at least three stories. They are built in much the same style as those of the Pueblo Pintado, of small tubular pieces of sandstone arranged with a beautiful effect of regularity and finish. This ruin is remarkable for the perfect symmetry of the arrangement of the rooms and of the *estufas*, a close scrutiny and careful measurement failing to detect any deviation. The rooms are small, the largest being 8 by 14 feet, and the smallest 8 feet square. The *estufas* are each 30 feet in diameter, and are placed just within the two elbows of the building.

THE Pacific Mail Co. have announced passenger rates from New York to San Francisco. The rates for passage have been fixed at \$75 for first-class, and \$35 for steerage. In opposition, the Railroad companies offer the following rates: First-class, \$100; second-class, \$75; third-class, \$45.

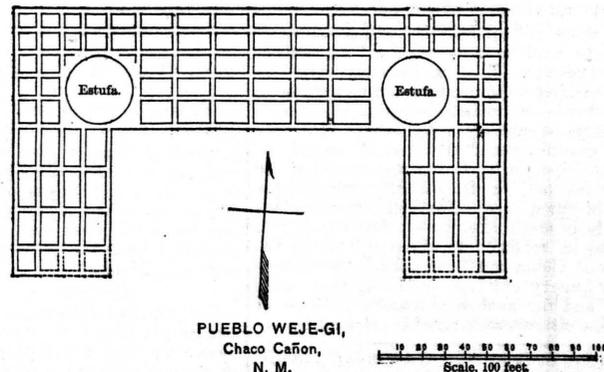
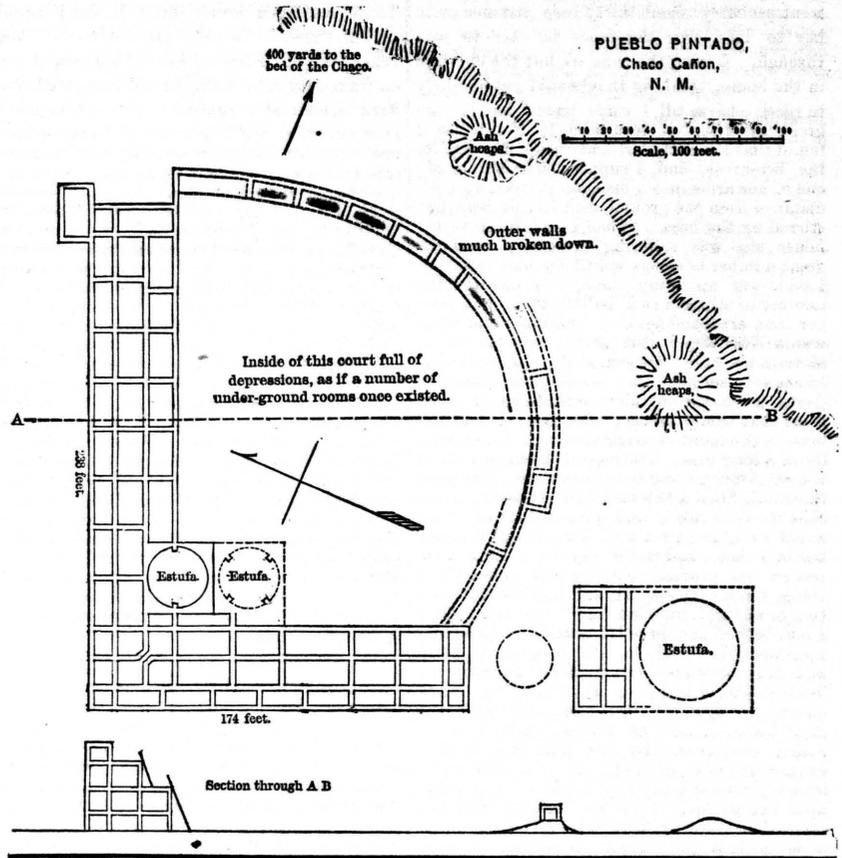
BLACKSMITH'S HAMMER SIGNALS.

When the blacksmith gives the anvil quick light blows it is a signal to the helper to use the sledge, or to strike quicker. The force of the blows given by the blacksmith's hammer indicates the force of the blow it is required to give the sledge. The blacksmith's helper is supposed to strike the work in the middle of the width of the an-

vil, and when this requires to be varied the blacksmith indicates where the sledge blows are to fall by touching the required spot with his hand-hammer.

If there are two or more helpers the blacksmith strikes a blow between each helper's sledge hammer blow, the object being to merely denote where the sledge blows are to fall.

When the blacksmith desires the sledge blows to cease, he lets the hand-hammer head fall upon the anvil and continues its rebound



GROUND PLANS OF AZTEC RUINS IN NEW MEXICO.

vil, and when this requires to be varied the blacksmith indicates where the sledge blows are to fall by touching the required spot with his hand-hammer. If the sledge is required to have a lateral motion while descending, the blacksmith indicates the same to the helper by delivering hand-hammer blows in which the hand-hammer moves in the direction required for the sledge to move. If the blacksmith delivers a heavy blow upon

upon the same until it ceases. Thus the movements of the hand-hammer constitute signals to the helper, and what appear desultory blows to the common observer, constitute the method of communication between the blacksmith and his helper. An amendment to the Constitution has been adopted by the Iowa House of Representatives making women eligible as members of the Legislature.

DEEP-SEA SOUNDINGS.

Great difficulty is met with in taking deep-sea soundings by ordinary methods when there are strong undercurrents, owing to the fact that the line is carried away by the currents to such an extent that the length of line paid out affords no measure of the actual depth. Sr. Henrique de Lima has recently devised an apparatus to remedy this defect, a description of which was recently read by that scientist before the Lisbon Academy of Sciences. The apparatus appears to have some valuable features. It is based on the effects of atmospheric pressure, and consists of a cone of sheet copper, having for its base a diaphragm of the same metal, which screws into the bottom of the cone so that it may be readily removed when necessary. In this movable base there are six small holes, which allow the ingress of the sea to the interior of the cone; and to the center of its upper surface there is soldered a small vertical wire of pure silver, which occupies the axis of the cone.

To prepare the apparatus for use the silver wire is moistened with nitric acid, which results in the production of a thin film of nitrate of silver. The base being screwed on, the cone if suspended by means of a ring at its apex, and sunk by means of two separate weights or stones suspended by cords or chains depending from three rings attached to the perimeter of the cone. To insure a vertical position to the apparatus, and to prevent it from being easily turned from its course, a small float is attached just above the suspension ring at the apex of the cone. As the apparatus sinks into the sea the water penetrates into it through the orifices in the diaphragm and gradually rises in proportion as the pressure increases during the descent. The salt water acts on the thin coating of nitrate of silver on the wire, and turns it perfectly white by the production of chloride of silver as far as immersion has taken place. By this means it is determined to what height the water has risen in the cone, and consequently what the pressure has been; and from these data the depth to which the instrument has descended is easily determined by simple formulae. The author suggests that by suspending the lower weight by means of an apparatus which would detach it on striking bottom, the apparatus would ascend to the surface of itself, thus dispensing with the use of a line.

Another device has recently been brought before the Geographical Society of Berlin, which is not only designed for indicating the depth of water, but also its current-direction and temperature at any particular depth. This instrument consists of a brass box hermetically closed, and having attached to it an apparatus resembling a vane or rudder. Within this box a thermometer and a magnetic needle are contained, behind each of which is placed sensitive photographic paper, and in front of each of which is a small nitrogen vacuum tube. The box also contains a small induction coil. When the apparatus is lowered to the required depth, the rudder causes it to take a direction parallel to the current there existing, and hence a definite direction with reference to the needle within. The thermometer soon acquires the temperature of the water outside, and becomes stationary. At this instant an electric current is sent to the box, which, by means of the induction coil inside, lights up the little nitrogen tube, the violet light of which, photographically very intense, prints, in about three minutes, the position of the needle and the height of the mercury column upon the prepared paper. The current is then intermitted, the apparatus raised, the photographic tracing fixed, examined, and placed upon record.

WILLUM: "Not quite as active as you was twenty years ago, Tummies." TUMMAS: "No, I baint, Willum; I find I can't run up a score lately, but if onybody asks me to 'ave a drink, I jumps at the offer."

PROF. TYNDALL'S LATEST WORD.

If asked whether science has solved, or is likely in our day to solve, the problem of the universe, I must shake my head in doubt. Behind and above and around us the real mystery of the universe lies unsolved, and, as far as we are concerned, is incapable of solution. The problem of the connection of body and soul is as insoluble in its modern form as it was in the prescientific ages.

There ought to be a clear distinction made between science in the state of hypothesis and science in the state of fact.

And inasmuch as it is still in its hypothetical stage, the ban of exclusion ought to fall upon the theory of evolution.

After speaking of the theory of evolution applied to the primitive condition of matter, as belonging to the dim twilight of conjecture, the certainty of experimental inquiry is here shut out.

Those who hold the doctrine of evolution are by no means ignorant of the uncertainty of their data, and they only yield to it a provisional assent.

In reply to your question, they will frankly admit their inability to point to any satisfactory experimental proof that life can be developed, save from demonstrable antecedent life.

I share Virchow's opinion that the theory of evolution in its complete form involves the assumption that, at some period or other of the earth's history, there occurred what would be now called spontaneous generation. I agree with him that the proofs of it are still wanting. I hold with Virchow that the failures have been lamentable, that the doctrine is utterly discredited.

SCIENCE AND THE BIBLE.

The *Christian Advocate* says, in reference to the first of the above paragraphs ("That there ought to be a clear distinction between science in the state of hypothesis and science in the state of fact"), that "no doubt there is that distinction, and no doubt, either, that forgetfulness of this truth is the reason why so many premature assaults have been made on the teachings of revelation, in the name of science. 'Science, in the state of fact,' is no more antagonistic to the truths of the Bible than one ray of the solar spectrum is inconsistent with the other."

THE THEORY OF EVOLUTION.

The *Advocate* further says: "Prof. Max Muller makes the following strong point against Mr. Darwin's 'Theory of Evolution.' He insists that philology points out the real specific difference between man and the lower animals. It erects a barrier which has never been passed. He says: 'I cannot follow Mr. Darwin, because I hold that this question is not to be decided in an anatomical theater only. There is, to my mind, one difficulty which Mr. Darwin has not sufficiently appreciated, and which I certainly do not feel able to remove. There is, between the whole animal kingdom on the one side, and man, even in his lowest state, on the other, a barrier which no animal has ever crossed, and that barrier is language. By no effort of the understanding, by no stretch of imagination, can I explain to myself how language could have grown out of anything which animals possess, even if we granted them millions of years for that purpose.'"

TEMPERATURE OF BATHS.—A cold bath should not vary much from 75° Fahr.—under rather than over. A temperate bath is from 75° to 85°; tepid, 85° to 95°; warm, 95° to 100° and over. The temperature of the body, in health, is about 98°. For cleansing purposes a hot bath is most desirable, but should be indulged in only occasionally, and for a very few minutes at a time. A hot bath excites and increases the circulation, a warm bath soothes and tranquilizes, and decreases the pulse.

IRON IN BRIDGE BUILDING.

The use of iron in bridge construction has produced a boldness of conception in the present generation of engineers which casts the performances of their predecessors entirely in the shade. A half century ago such spans as the fallen ones of the St. Charles and Tay bridges, for the loads that they were calculated to support, were impossible. Now they are far from being of the first magnitude. There are 10 truss bridges across the Mississippi above St. Louis, which are not regarded as very wonderful structures, and yet seven of them have spans as long as those of the Tay bridge.

The bridges at Winona, LaCrosse, Dubuque, Keokuk and Hannibal, have spans of 240, that at Rock Island of 250, and that at Louisiana of 256 feet. The span which gave way at St. Charles was 320 feet in length, yet the same bridge has two spans 406 feet long. Over the same river is a truss bridge at Leavenworth, with three spans of 340 feet, and another at Glasgow with five of 315 feet. Across the Ohio there is a truss bridge at Steubenville with a span of 320 feet, one at Parkersburg of 350, one at Cincinnati with a span of 515 feet, the longest truss yet built, and one at Louisville with a span of 400 feet. The truss bridge over the Kentucky river, on the Cincinnati and Southern railroad, has three spans 375 feet in length, resting on iron piers 175 feet high. The proposed bridge over the Hudson at Poughkeepsie has five spans of 500 feet with piers 135 feet above high water.

In Europe there is a truss bridge over the Vistula at Graudenz with 12 spans of 300 feet. The truss bridge of Lessart, in France, has a span of 314 feet, and was pushed across from one abutment to the other after being put together. The bridge over the Rhine at Wesel, has four spans of 313 feet. The Kulenberg bridge in Holland, which was the monarch truss before the construction of the Cincinnati bridge, has a span of 492 feet.

From these examples it would seem that the St. Charles and Tay bridges, instead of being risky engineering ventures, are entirely within the domain of experience. But, nevertheless, the fact remains that, notwithstanding the boldness with which the engineers of the present day meet the exactions of the locomotive, they are comparatively novices in the use of iron. The first iron bridges were of cast-iron, and soon proved to be too lightly proportioned. The first suspension bridges were similarly defective. Does it remain to be proved that the wrought-iron work of the past 20 years betrays too great a confidence in the material? Were the St. Charles and Tay disasters unaccountable accidents, or were they fair tests of current engineering theories? These are questions which engineers would do well to discuss.—*St. Louis Globe.*

AFTER COAL, WHAT?—At the last meeting of the Liverpool Engineering Society, a paper was read touching the probable exhaustion of coal, in which the author advocated the substitution of the tides as a producer of motion which would outrival all other sources of mechanical power. A correspondent of the *Builder*, too, is of the same opinion. A compressed air chamber filled by the tide at Brighton, for instance, would, he is confident, run an atmospheric railway, such as Brunel invented, from that place to London. If the tides could be thus utilized, all our railways and factories, in fact, all the work now done by the steam engine, could be performed by them. There would, moreover, be no jerk, no steam, no smoke, no noise. Apart from the fact that the present generator of steam will in time cost more to produce than it is worth, coal has so many disadvantages that no one will regret to see the time when it will be supplanted by another agent. When this is to be, is the question of the future.

CORK AND ITS VALUE.

The constantly increasing demand for cork for bottling and other purposes, together with the fact that the cultivation of the tree is sadly neglected, threatens to cause a serious dearth of the article. Yet no other substance has been discovered that will serve as a substitute for cork in many of the uses to which it is applied. Cork is worth 11 times what it was a century ago, and its market value is continually increasing. The American Commissioner of Agriculture has satisfied himself that the cork tree can be successfully cultivated in various parts of the United States, and in his report for 1878, just issued, recommends that the Government offer premiums to those who, within a reasonable specified time, shall have obtained the best results in cork culture. In Sicily, Sardinia and the kingdom of Italy, great plantations of cork trees have been destroyed to obtain the tannin from the bark. After having been stripped of their bark, the trees were burned, in order that the carbonate of soda might be extracted from their ashes. In 1822 the French government began to nurture this important interest, and France now has about 500,000 acres of cork plantations in Algeria. The tree grows as high as 65 feet, with a diameter of from 3 to 5 feet, and will live and yield cork from 150 to 200 years. In a dry, sandy, siliceous soil, at an altitude of from 1,600 to 3,200 feet, and not further north than the 45° of latitude, cork plantations will flourish. The tree does not, however, yield valuable cork until it is towards 15 years old.

TO DYE STRAW.

Magenta Red.—The first operation for dyeing this or any other color on straw is to steep the latter in a bath acidulated with sulphuric acid for 12 hours. For magenta, take an acid bath of 4° to 5° Be. The straw after washing is immersed for 12 hours in a bath kept at 30° to 40° C., containing the necessary amount of dye. Now wash well and dry. Other aniline colors do not dye straw with the same facility.

Maroon, with Logwood.—Clean the straw by boiling with a solution of carbonate of soda, then steep in a bath of logwood for two hours. To give a bluish tint, add some bluestone to the bath; if too much of the latter is used the straw will have a greenish hue. This is a loose color, only employed on account of its cheapness.

Coffee and Chocolate Stains.—If the coffee or chocolate contains milk, the stains produced are more pronounced than if prepared with water only, but they are also more easily removed. To remove them, the stains are washed with a mixture of yolk of egg in tepid water. If with this treatment they still remain, add a little spirit to the mixture, and rub with a hard brush.

Blue Linings for Hats.—In producing these the cloth is not dyed, but the thickened color is applied to it in the following manner: Prepare the color with 22 gallons of water, 30 pounds starch, 2 pounds tallow, 44 pounds ultra-marine blue; mix, boil, pass through sieve; print on the roller first on one side, then on the other, and dry on the cylinder.

TO REMOVE NITRATE OF SILVER STAINS.—Dr. Krætzler, of Leipzig, proposes, as a substitute for potassium cyanide in the removal of stains made by lunar caustic or silver nitrate, the following mixture: 10 grammes ammonium chloride, 10 grammes corrosive sublimate, dissolved in 100 grammes of distilled water, and preserved in a glass-stoppered bottle. He says that with this solution the black stains may be removed from linen, woolen and cotton goods perfectly, without injury to the goods. It will also remove stains on the skin, but, although less poisonous than the cyanide, it must not be forgotten that it is a corrosive poison. For the skin we prefer to apply tincture of iodine, or a solution of iodine in iodide of potassium, followed by strong aqua ammonia; if slower, it is safer both to use and to keep in the house.

THE U. S. FISH COMMISSION ON THE PACIFIC COAST.

The *Mining and Scientific Press* of recent date says:

Prof. David Star Jordan, Assistant U. S. Fish Commissioner and in charge of the investigations into the fish and fisheries of the Pacific coast, U. S. A., the results of which will be incorporated with the census of 1880, has lately paid this city a flying visit.

Prof. Jordan is one of the best known and most accomplished ichthyologists of the United States, and a most persevering and thorough worker. He has probably done more than any other man living to increase our knowledge of the fresh-water fishes of the country, and there is no doubt that his labors upon this coast will result in the accumulation of a vast number of fresh facts, of economic as well as of scientific interest, about the habits, geographical distribution, variations and value to mankind of the as yet only imperfectly known fish-fauna of our shores.

He is accompanied by his pupil and secretary, Mr. Gilbert, a young man who has already made his mark in ichthyology.

Prof. Jordan and Mr. Gilbert commenced their work at San Diego, where the weather is more favorable for procuring specimens than it is here, and are gradually working their way up the coast to San Francisco, where they will arrive in April or May, and will probably make that city their headquarters for two months or thereabout.

Altogether they will spend nine months upon the coast. During the two days of their visit, a considerable quantity of fishes were purchased in our markets, to be packed in ice and sent in a fresh condition to the Smithsonian Institution, where life-size casts will be taken, and colored so as to become an exact fac-simile of the living fish.

Prof. Baird, writing some time ago, stated that 600 of these casts had already been taken, and our State Fish Commissioner, Mr. B. B. Redding, who has lately paid a visit to Washington, speaks in glowing terms of their accuracy and beauty.

This is the only method by which the exact form and true coloration of a fish can be preserved for examination, as alcohol destroys or changes the colors and more or less shrivels and contracts the tissues, and a skin cannot be relied on for color or shape.

The Fish Commission desire to obtain at least 50 specimens of every species inhabiting the west coast of the United States, so as to have a series sufficiently large to show all variations due to age, sex or habitat. The greater portion of these will be preserved in alcohol for anatomical examination; but, if the first attempt to transmit fresh fishes in ice across the continent proves successful, the experiment will be repeated with examples of other species, as it is the desire of Prof. Baird to enrich the National Museum with casts of every form found in the waters of the United States.

A NEW BOOT SOLE.—A Chicago boot manufacturer, Mr. Goodrich, has introduced what he is pleased to call an indestructible sole, in which nickel-plated steel rivets are embedded in the leather. These rivets are forced through perforations from the inside of the sole to its outer surface, and being less in length than the thickness of the leather, the head is securely embedded, and does not drop out as the sole becomes worn. Owing to the nickel-plating, it is claimed there is an entire absence of rust.

IRON PROTECTED BY GUM.—Sheet iron covered with gum of the euphorbiaceae, common and luxuriant in tropical climates, was immersed in Chatham, England, dockyard, where everything rapidly becomes foul, and when taken out was found quite clean. The gum is intensely bitter and poisonous; hence marine animals avoid it.

HEAT IN THE SILVER MINES.

Those who have never personally inspected the lower levels of our mines may obtain some idea of the degree of heat to be found therein by visiting the Savage works at the change of shifts. The men—packed together as close as they can stand on the cage—are popped up out of the shaft all steaming hot, for all the world like a bunch of asparagus just lifted from the pot. They make their appearance in a cloud of steam that pours up continuously from the "depths profound," and are dimly seen until they step forth upon the floor of the works. As the men land and separate, each carries with him for half a minute his little private cloud of vapor. As this passes off the man is seen to be naked from the waist up, his skin as wet as though he had just been lifted out of a pool of water. The men bring up with them—besides the steam—an amount of heat that may be felt by the spectator as they pass.

All this is at the top of the shaft, where it is considered quite cool—what, then, must it be hundreds of feet below, where the men started from—down where the water stands at 157° Fahr.? Down there no steam is seen—it is too hot for it. It is only when the hot, moist air coming up from the lower regions strikes the cool air towards the top of the shaft that it takes the form of steam. Down where the men come from you must keep your hands off the pump column and the pipes, and if you pick up any iron tool you will at once put it down without being told to do so. Down there they handle things with gloves on, or wrap rags about the drills they are guiding and iron apparatus they are moving; and down there, too, you will learn to keep your mouth shut after you have drawn a few mouthfuls of hot air into your lungs. Perspire? It is no name for it. You are like a sponge that is being squeezed. You are ready to believe that you have 10,000,000 pores to every square inch of surface, or as many more as any authority may mention, and that all these pores are as big as the cells of a honey-comb. You go for ice water, and it almost seems to hiss as it passes down your throat—you keep going for it, and thus, in a short time, find out what becomes of the tons and tons of ice that are daily consumed in the mines. Remain below among the miners for an hour or two, and when you are finally popped out at the top of the shaft, all red hot and steaming, among the other asparagus sprouts, you will appreciate the beauty, the light, and the coolness of the upper world.—*Virginia Enterprise.*

SKELTON LEAVES.—The following method has been communicated to the Botanical Society of Edinburg, by Dr. G. Dickson: A solution of caustic soda is made by dissolving three ounces of washing soda in two pints of boiling water, and adding one and a half ounces of quick-lime previously slacked; boil for ten minutes, decant the pure solution and bring it to the boil. During ebullition, add the leaves, boil briskly for some time, say an hour, occasionally adding hot water to supply the place of that lost by evaporation. Take out a leaf, put it into a vessel of water, and rub it between the fingers under the water. If the epidermis and parenchyma separate easily, the rest of the leaves may be removed from the solution and treated in the same way; but if not, then the boiling must be continued for some time longer. To bleach the skeletons, mix about a drachm of chloride of lime with a pint of water, adding a sufficient acetic acid to liberate the chlorine. Steep the leaves in this until they are whitened (about ten minutes), taking care not to let them stay in too long; otherwise they are apt to become brittle. Put them into clean water, and float them out on pieces of paper. Lastly, remove them from the paper before they are quite dry, and place them in a book or botanical press.

THE OREGON STATE FAIR FOR 1880.

The 20th Annual Fair of the Oregon State Agricultural Society, will be held at the Fair Grounds, near Salem, commencing on July 1st and continuing until Thursday evening, July 8th. The celebration of the 104th Anniversary of our National Independence, will be duly observed by a special programme for Monday, July 5th, ending with a fine display of fire-works in front of the grand stand on the race track. Half fare rates have been secured on all the railroads and steamer lines in the Pacific Northwest; in fact, nothing will be left undone to make the Fair of 1880 a success. Already, Mr. M. Wilkins, the President, and Mr. E. M. Waite, the Secretary of the Society, are hard at work arranging and planning for the enjoyment and comfort of visitors. In this connection, we take pleasure in calling attention to the Society's premium list, which every intelligent farmer ought to at once send for. Besides the premium list, and list of awards of 1879, the pamphlet contains a valuable paper on "Agricultural Education," by Prof. B. L. Arnold, of Corvallis, and one on "Natural History as applicable to Agriculture," by Prof. O. B. Johnson, of Salem.

CROPS NEVER FAIL IN OREGON.

J. C. Geer, Esq., recently celebrated his 85th birthday at the old homestead, near Butteville, Marion county, Oregon. Thirty of his descendants were present to offer their congratulations to the old gentleman, who has been a resident of this State since 1847. One hundred and sixty-four of his direct descendants, even to the fifth generation, are residents of this coast. We enjoy the pleasure of an intimate acquaintance with quite a large number of them, and can congratulate the old patriarch of Butteville that he has no reason to feel ashamed of even one of his family of 164. As fine specimens of manhood, we believe the Geers cannot be beat on this coast. As for instance, the Hon. Ralph C. Geer, of the Waldo Hills; Cal. Geer, Esq., of Silverton; and L. C. Geer, of Walla Walla. Four of the thirty in attendance at the birthday party, weighed over one thousand pounds.

Noah was the first man who strictly obeyed Lent. He lived on water for forty days and forty nights.

THE OREGON RAIN.

Ho! the rain, the Oregon rain!
Over the mountains, over the floods,
Over the valleys, over the woods,
Spread the falling mists again.

Falleth the rain, the Oregon rain,
Enriching again the fertile soil,
For all the blithesome sons of toil,
Assuring harvests of golden grain.

True Webfeet like the Oregon rain;
For our work is done until spring,
And we fiddle, and dance, and sing,
And "visit our Castles in Spain."

Cold and phthisic, cough and catarrh,
Follow sure the frost and the cold,
Which the rain cures, as balm of old,
As a balm from Gilead afar.

Under the wings of our upper deeps,
With our whispering woods and bays,
And scents of poppy from far Cathays,
No wonder the virtuous Webfoot sleeps.

H. B. L.

FOREST GROVE, Feb. 14, 1880.

REMEDY FOR DAMP WALLS.

So much sickness, too often fatal, results from damp walls, that every precaution should be taken to remedy the evil. Interested readers may be benefited by heeding the following remedy from one who evidently knows whereof he affirms: "Moisture may be kept from a brick wall by dissolving three-quarters of a pound of mottled soap in one gallon of boiling water, and spreading the hot solution steadily, with a large flat brush, over the surface of the brickwork, taking care that it does not lather. This is to be allowed to dry for twenty-four hours, when a solution formed of a quarter of a pound of alum dissolved in two gallons of water, is to be applied in a similar manner over the coating of soap. The soap and alum mutually decompose each other, and form an insoluble varnish which the rain is unable to penetrate. The operation should be performed in dry, settled weather."

THERE is a story on record, somewhere, of a London cigar-seller, who was prosecuted by the authorities for defrauding the revenue. The tax on tobacco, imported into England, is excessive, nearly a thousand per cent. In his defense, the cigar-maker maintained, and proved so conclusively to the authorities that he used no tobacco in the manufacture of his wares, that he was discharged. They were made entirely of oak leaves, cabbage leaves and similar materials.

To like effect, the makers of all kinds of intoxicating drinks could easily plead, if any confidence can be placed in the numerous hand-books, openly advertised and sold, which profess to teach the mystery of compounding liquors with such skill as to deceive even the most practiced judges.

VENTILATION IN OUR DWELLINGS.

Ventilation in dwelling houses is important at all seasons, and especially during Summer. In discussing the general subject the London *Lancet*, high authority on all hygienic topics, pertinently remarks that, if a man were deliberately to shut himself for some six or eight hours in a musty room with closed doors and windows (the doors not being opened even to change the air during the period of incarceration), and were then to complain of headache and debility, he would be justly told that his own want of intelligent foresight was the cause of his suffering. Nevertheless, this is what the great mass of people do every night of their lives, with no thought of their imprudence. There are few bedrooms in which it is perfectly safe to pass the night without something more than ordinary precautions to secure a fresh inflow of fresh air.

Every sleeping apartment should of course have a fire-place with an open chimney, and in cold weather it is well if the grate contains a small fire, at least enough to create an upcast current and carry the vitiated air out of the room. In all such cases, however, when a fire is used, it is necessary to see that the air drawn into the room comes in from the outside of the house. By an easy mistake it is possible to place the occupant of a bedroom with a fire, in a closed house, in a direct current of foul air drawn from all parts of the establishment.

Summer and Winter, with or without the use of fires, it is well to have a free ingress for pure air. This should be the ventilator's first concern. Foul air will find an exit if pure air is admitted in sufficient quantity, but it is not certain pure air will be drawn in if the impure air is drawn away.

So far as sleeping rooms are concerned, it is wise to let in air from without. The aim is to accomplish the object without causing a great fall of temperature or a draft. The windows may be drawn down an inch or two at the top with advantage, and a fold of muslin will form a ventilator, to take off the feeling of draft. This, with an open fire-place, will generally suffice and produce no unpleasant consequences, even when the weather is cold. It is, however, essential that the air should be pure.

The peacock feather is in China always the sign of high rank. No official save that of the highest degree is permitted to wear it, and no lady would dare to wear it unless of the very bluest blood.

Even a hen has brains enough to scratch.

An ex-cell-ent man—A pardoned convict.

BUT NO BREAD TO FEED THE POOR!

BY L. P. VENEN.

I.

Gold for rouge, point-lace and brooches,
Hounds, fast horses, yachts and coaches,
Butler, cook, and lady's maid,
Pseudo-grandeur, false parade,
Wedding grand and bridal tour,
But no bread to feed the poor!

II.

Waste enough in trailing dresses
To retrieve a world's distresses;
Pride without and pride within
Lacketh never gold to sin;
Pittance asked from door to door,
But no bread to feed the poor!

III.

Gold for wassail, joust and races,
Gay turnouts and wat'ring places,
Huge bonanzas, bonds and stocks,
Wall street swindles, marble blocks,
Gold to deck the swagg'ring boor,
But no bread to feed the poor!

IV.

Scores of dextrous craftsmen busy
Working till the brain is dizzy;
Drained by tariff, rent and tax,
Sheriff sales that ne'er relax,
Vexed by overwhelming care,
All to make a millionaire!

V.

Lo, a thousand haggard dwellers
Housed in garrets, hovels, cellars,
Eking out an aimless life,
Stupefied by want and strife,
Loathesome through disease and pain
That a fool may count his gain!

VI.

Toil and weep, O wretched mother,
Hung'ring father, sister, brother;
Wail, O babes of squalid birth
Offspring of unholy death.
Know ye not that want of yours
But the rich man's wealth secures?

VII.

List, O strickens, and ponder,
In our Father's house, up yonder,
Stint of food shall never be
Throughout God's eternity;
Toiling, hung'ring nevermore,
Bread of life shall feed the poor!

STINGY MEN.

I despise a stingy man. I don't see how it is possible for a man to die worth \$5,000,000 or \$10,000,000, in a city full of want, when he meets almost every day the withered hand of beggary, and and the white lips of famine. How a man can withstand all that and hold in the clutch of his hand \$20,000,000 or \$30,000,000, is past my comprehension, I do not see how he can do it. I should not think he could do it any more than he could keep a pile of lumber when hundreds and thousands were drown-

ing in the sea. Do you know I have known men who would trust their wives with their hearts and their homes, but not with their pocketbooks—not with a dollar. When I see a man of that kind, I always think he knows which is most valuable. Think of making your wife a beggar! Think of her asking you every day for a dollar or two dollars, or to humbly beg for fifty cents. "What did you do with that dollar I gave you?" Think of having a wife that is afraid of you! What kind of children do you expect to have with a beggar and a coward for a mother? Oh! I tell you, if you have a dollar in the world and you have got to spend it, spend it like a king; spend it as though it were a dry leaf and you the owner of unbounded forests. That's the way to spend it. I had rather be a beggar and spend my last dollar like a king, then be a king and spend my money like a beggar. If it has got to go let it go. Get the best you can for your family—and look as well as you can yourself. When you used to go courting, how nice you looked! Ah, your eye was bright, your step was light, and you just put on the very best you could. Do you know that it is insufferable egotism in you to suppose that a woman is going to love you always, looking as bad as you can. Think of it! Any woman on earth will be true to you forever when you do your level best.

"A LASS! I am no more," as the girl said when she got married.

He who swears informs us that his bare word is not to be credited.

Can any one improve his condition by whining? if not, whine not.

"Do you think your father is going to move out soon?" inquired the owner of a rented house of the son of his tenant. "Reckon so," was the reply "we've begun using window-frames for firewood."

An old gentleman who is getting "thin at the top," says, "Always pick out a bald-headed barber to shave you, because he can't consistently ask you to buy any hair restorative."

Little things should not be despised. The little toe is the smallest on the foot, but it always has the largest corn.

It is believed that Jacob was the first Indian agent, for the Bible represents him as saying: "Lo I have served him these many years."

A REMINISCENCE OF EARLY DAYS IN THE MOUNTAINS.

BY DR. T. T. CABANISS.

In the month of May, 1852, a man named Hinckley, who carried an express between Shasta City and Yreka, *via* the Sacramento river trail, (the one then mostly travelled by those who passed between those points) brought a message to me from a party of miners, or rather prospectors, who were then encamped on the Sacramento river a mile beyond the "Sugar Loaf," a high and conical peak, as its name would indicate, which was separated from the "Devil's Backbone," by a creek that flowed into the river. This "Devil's Backbone" was a ridge which ran parallel with the river for several miles, and was vertebrated—that is, had a succession of high points and depressions, alternately.

Along this Backbone the trail passed, and over it all of the goods for Yreka were carried on mules. On this trail Indians would lie in ambush and attack the trains. Men and mules were often killed, and nothing but the indomitable pluck of the early Californians saved anything which was in their care. It was a common occurrence for a few men armed with pistols to conduct a large train along this route, and defend it against bands of Indians, who at that time were armed with bows and arrows—the wounds of which were always fatal if a vital part was reached, as the head of the arrow came off when the sinew with which it was fastened would become softened by the warm blood.

The messenger stated that a man named James Faulds (from Louisville, Kentucky,) had been shot by an Indian thirty miles from Shasta, and that he wished me to go to him. He had been wounded three or four days, but the danger of traveling this trail was so great that no one of his party would venture to leave, and waited until the expressman came along. Between the place and Shasta there was not a habitation at that time.

Having bought a horse I made my arrangements to leave the next morning. James Coates, brother of Thomas Coates, who was a Representative in the State Legislature from Siskiyou, in 1852, also hired a mule for a man named Bill Hooper, who mined and dealt monte, accordingly as one or the other "panned out." At any rate, he was at this time mining on Dog creek, fifty miles above Shasta, and wanted to go to his claim, as some of the sharp ones—"Keno Sam" perhaps one of the number—had drawn "waxed cards" on him and "cleaned him out to the bed-rock."

Bill Hooper was an honest man, according to the estimate then put upon people. He would gamble—and win, if he could. If he lost he would pay,

and like nearly all then in California, would go to the mines to recuperate. When fortune favored him again he would return, pay his hotel, gambling and other bills like an honest man, and perhaps lose the balance. He was as brave as Julius Cæsar, and if you got into a "tight place" you could depend on his staying with you.

None but the old settlers in this country can appreciate the difference which existed in all the elements of honesty and true nobility of soul in favor of the pioneers against the subsequent immigration to California. Propriety would forbid comparisons being drawn, and therefore I will not do so. They came to a wild and unknown country, exposed to all dangers incident thereto, and with pick, shovel, axe and rifle, opened an empire for others to follow and reap all the profits from their labor and hardship. All honor to the pioneers of California! and may the day come when their services and sacrifices will be appreciated.

Bill Hooper and myself left Shasta City in the morning and took the trail for the upper Sacramento. Nothing transpired to attract attention until we had gone about half the distance from one end to the other of the "Devil's Backbone." As we turned a point in the trail we saw two Indians coming towards us, apparently unconscious of our being near, and as it was then considered fair to shoot any or all Indians who might be found in that part of the country, preparations were made for that purpose.

Concealing ourselves behind some bushes at a turn in the trail, we drew our pistols and awaited the approach of the Indians. On they came, each one with a short pole on his shoulder. When within a few yards of us we saw that they were dressed in the clothing of white men, and we knew in a moment that they were not hostile, as the Indians at that time were in a nude state, except having a deer skin thrown over their shoulders. These men had been up the river with a pack-train, and were now on their way to Cottonwood, in Shasta county. The poles were the representatives of guns, and were to deceive the wild Indians, as General Macgruder did General McClellan at Yorktown with cannon made of logs.

Continuing on our route we at last came to the end of the Backbone, and descended it to a creek. There we ascended the "Sugar Loaf," and crossing it halted at the foot. Here we fed our animals some barley, and then as the sun was down, and we had not found the party of miners, discussed their whereabouts. Hooper thought that they must be about ten miles away, and that we would have to travel on.

We resumed our journey, and going a few hundred yards saw a fire on a

large flat to the right of the trail. To this we rode, and there were the men whom we sought. I found Faulds shot in the stomach, and suffering intensely with hiccough. Having administered something to relieve him, we then listened to the recital of the affair. The party had encamped on this flat, and had when night came tied their animals to trees near by. Two fires were made, one at either end of the camp, and Faulds and Bill Fox stood guard.

Just before day Faulds heard the horses at his end of the camp make a noise, and went to them. He stood within the light of the fires, and was visible to any one on the outside. He thought he saw an object moving along the flat towards a large tree near by, and he brought his gun to his shoulder. The object was stationary, and he might be deceived. The gun was dropped across his arm, and again the object moved. The second time he failed to shoot, and the gun was dropped as before. At that moment he felt a stinging pain, and heard the rebound of the bow. An arrow had pierced his body. As quick as thought he drew it from his body, but the barb remained buried within his stomach. No surgical aid could relieve him, and he was destined to fill a grave near the banks of the Sacramento, one of the hundreds of victims to Indian arrows, many of whose bones lie scattered in the gulches and on the mountains of California.

The day following Faulds died, and we dug a grave for him. Wrapping the body in his blankets, we lowered him into his resting-place, and then partly filled the grave with stones and logs, that the coyotes and Indians might not disturb his remains.

The task being done, it was necessary for me to return to Shasta. To go alone was not very pleasant, and filled with much danger. While thinking of the best thing to be done, three sailors came along, *en route* for Shasta, and they would act as an escort. We started, and proceeded on the way without anything of note to disturb us until we reached the "Backbone." At the foot of this we had dismounted and prepared to walk to the top. Being in advance of the party, I had reached the ridge, and there to my surprise and apprehension found a fence, made of poles and brush, across the trail. The tracks of Indians were fresh and numerous, and it was evident they were near by. In a moment I took shelter in a cluster of manzanita bushes, and stood on the defensive, awaiting the attack. None was made, and my companions coming up we wended our way along the trail. Having gone a few miles we met a party of men, Major Lane and Grant Aury, now in Arizona, among them, who were on their way to Oregon to purchase cattle. Two of my companions

remained with this party, and with the other I continued the trip. We came to Squaw Creek, and left the trail to give our animals a little grass. Here we remained for a few minutes, but as if some guardian angel had whispered to me, the thought occurred that we were in a dangerous situation. We left the place and made our way back to the trail. In a moment afterwards we heard a voice, and looking up to the side of the mountain, and within a few hundred yards, sat an Indian watching, with the intention of ambushing us as soon as others would join him, had we remained near the river. We reached Shasta safely that night. Before we did so, however, we met a large pack train on the way up, and knew then why the Indians had made the fence, and why they had not attacked us. They were expecting the pack train, and when the mules came to this fence they would huddle together, and in the confusion some would be killed or stampeded, and the Indians would get the goods.

A few days after the events here narrated, Dr. Horsley was going up to Yreka, and having camped on the flat upon which Faulds was buried, found his body above ground, and his blankets taken away. The Indians had done this, and there he remained until the doctor and his party re-interred him. A few days after the Indians again went to the grave, and with sharp sticks dug to his body, and finding no blankets left him to rest.

Of the eighteen men who composed the party with Faulds, Olmstead, of Yreka, is the only one living

Renowned as the Egyptian ladies are for the richness of their attire, they would regard it as highly indecorous to display upon the street the magnificence of their dress. When they go about the streets of Cairo on shopping expeditions, they cover themselves with a dismal robe of black. As a general rule, whatever they are compelled to exhibit to the public gaze is simplicity itself, while that they reserve for private inspection is gorgeous in the extreme.

CURIOUS BELIEF.—The natives on the Niger believe that when their great men, such as kings, chiefs, and other persons of note, die, they go to the white man's country, become white men, travel with them, and adopt their habits; hence they regard Europeans and Americans as their countrymen who have died, and they fear them.

"You here, Jones? How the mischief did you find your way out?" "Find my way out! what do you mean?" "Why, the last time I saw you, you were lost in slumber." "Ah, well, I rode out on a nightmare."

A fortune-hunter went courting the daughter of a rich whisky distiller, and he sang, "I see her still in my dreams."

WELLS' Station, on the extension of the Western Oregon railroad, offers splendid inducements for permanent settlement to a few industrious mechanics. The place has just been laid out by W. A. Wells, enterprising farmer, who will, early this spring, erect there a warehouse, 50 x 100 feet, and capable of holding 75,000 bushels of grain. Wells' is centrally located, in a rich agricultural section, between Corvallis and Independence, eleven miles from the former and ten miles from the latter place. It is also eight miles from Albany. A general merchandise store, a boot and shoe maker, a blacksmith and wagon maker, etc., etc., would do well there.

The Willamette Farmer, the only reliable agricultural journal published in the Pacific Northwest, has entered its twelfth volume, and we are glad to hear that it is in a prosperous condition. That veteran of Oregon journalists, Mr. S. A. Clarke, is still its chief editor and sole proprietor, and if there is a newspaper man entitled to the full confidence of farmers, he is certainly the man.

"The Settlement and Early Settlers of Coos Bay," a neat 38-page pamphlet bearing the above title, has just been published by a pioneer resident of the bay, and is a valuable addition to the historical literature of Oregon.

If Idaho Territory had nothing else to recommend her, the magnificent climate would alone be a sufficient inducement to all who delight in living in a country exempt from extremes in heat or cold and where all the natural conditions for healthfulness so certainly exist.

This is leap year, but girls should look before they do.

Folks are very foolish to take a fresh cold. If you must get 'em get 'em cured.

The march of improvements shows that many waist places of the past are now occupied by wide belts.

Man can subdue the elephant, the lion and the rhinoceros, but the tiger generally gets the best of him.

"Have you in your album any original poetry?" asked one lady of another. "No," was the reply, "but some of my friends have favored me with original spelling."

The firm of **Martin Hecht & Co.**, wholesale dealers in Boots and Shoes, at No. 1 and 3 North Front street, have the largest stock in their line in Oregon. Their intimate relations with Eastern and San Francisco manufacturers, enables them to offer superior inducements to country merchants, who will do well to visit their establishment when in this city. As the firm is one of the most reliable in Portland, dealers may safely intrust them with orders by mail, which will be filled with the utmost care and under the personal supervision of one of the firm.

Breeders of fine poultry will find pleasure in visiting the extensive yards of Mr. W. S. Failing, at Milwaukie. He makes a speciality of Brown Leghorns, Plymouth Rocks, Houdans, Malay Games (direct importation from Yokohama,) Bronze Turkeys, and Pekin Ducks. Mr. Failing has, we believe, the purest strains in Oregon, and will be ready to dispose of a limited amount of eggs during the coming month.

The old, reliable firm of **E. J. Northrup & Co.**, deal extensively in all kinds of Hardwood Lumber and Wagon and Carriage Hardware, carrying the largest stock in this line of any firm in the Northwest. Blacksmiths and wagon-makers in the country will do well to send their orders to them direct.

We take pleasure in calling special attention to the advertisement of **Wm. Beck & Son**, a firm established here for nearly thirty years. People in the Northwest commit a very foolish act to send money back East to unknown firms for sporting implements, when we have so reliable a firm as the above-mentioned in our midst. Their stock is very large, and they can and do sell fully as cheap as the same quality of goods can be bought elsewhere.



D. W. PRENTICE & CO.
General Agent for the Unrivalled
Weber, and Haines Bros. Pianos,
And Celebrated
Standard, and Estey Organs,
107 First-st., bet. Stark and Washington,
Portland, Or.

E. de JONGH,
Oculist and Optician,

Has Removed to
153 First Street,
Northwest Corner Morrison,
ROOM 22.

Pfunder's Greenhouses and Nursery!



The Largest in Oregon,
Are now located on the block bounded
by Ninth and Tenth, Stark
and Washington Sts.

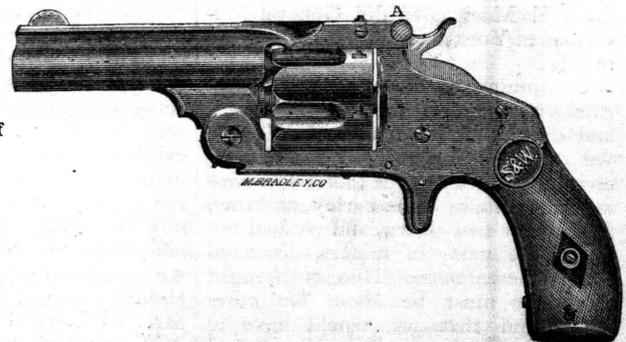
Having superior facilities, I am prepared to furnish the very latest varieties of Greenhouse Plants and Shrubbery, especially tried and acclimated to the Pacific Northwest. A magnificent assortment of Shade and Fruit Trees, Evergreens, Roses, all tropes, F. chisla, Geraniums, Azaleas, Bouvardias, Begonias and other Flower Plants on hand. Small plants, for sending through the mail, now ready. Seeds and Bulbs, of all kinds, of the very freshest and choicest varieties. Address all orders, **L. G. PFUNDER,** Florist and Horticulturist, Portland, Oregon.

J. KOHNS
CLOTHING
PALACE
FIRST AND MORRISON STS. PORTLAND

ESTABLISHED 1852.
SPORTSMEN'S EMPORIUM!
William Beck & Son,

IMPORTERS AND DEALERS IN
Guns, Rifles and Revolvers, of Every Description.

- Fine Cutlery,
- Fishing Tackle,
- Archery,
- Hazard's Powder, of all kinds.
- Croquet Games,
- Base Balls,
- Boxing Gloves,
- Velocipedes,
- Etc., Etc.,



Cor. Front & Alder and Third and Morrison streets, - Portland, Oregon.
[Those writing, please mention that you see this advertisement in THE WEST SHORE.

SPECIAL PREMIUMS

For the Month of March.

We have a beautiful lot of Ornamental Iron Ware, which we will give free of charge to any one making up a club of subscribers to the WEST SHORE for 1880. Names forming a club may come either from one or more than one post office, as every paper will be sent in a separate wrapper. Every member of a club will be entitled to our mammoth 160-page paper, free of charge. All articles will be carefully packed, and delivered free of charge, either at our office or on board of any steamer or railroad line in this city.

For a club of six, at \$2 each, we will send two magnificent Flower Brackets, valued at \$5, or a handsome Bracket Aquarium (see engraving)—globe to hold one gallon of water.

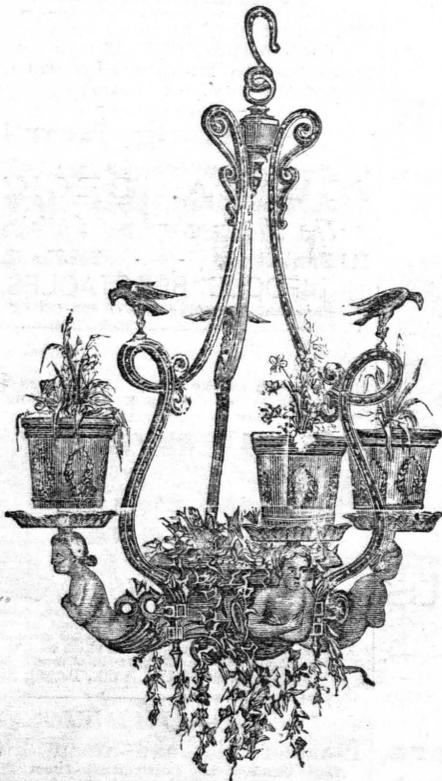
For a club of ten, at \$2 each, we will send a beautiful Chandelier (see engraving), painted green and gold and highly ornamented, valued at \$10.

For a club of fifteen, at \$2, we will send the same pattern Chandelier, two sizes larger, to hold nine flower pots.

For a club of thirty, at \$2 each, we will send a magnificent Flower Stand (see engraving); it is 42 inches in height, has revolving shelves, and will accommodate twenty-five flower pots; is especially intended for a bay window, but will look well in the centre of a well lighted room.

To any one who may prefer an Aquarium, we will send a recently patented one, made of heavy French plate glass, iron part painted blue and gold, with four eagles on top; holds twelve gallons of water; has a beautiful centerpiece, representing a castle, for the fish to hide in; will comfortably accommodate twenty-five fish; valued at \$30.

For further premiums, see page 63.



Given away for a Club of Ten Subscribers, at \$2 each.



Given away for a Club of Six Subscribers, at \$2 each.



Given away for a Club of Thirty Subscribers, at \$2 each.

Removed to No. 162 First Street

NEUMEYER,

The well known

Merchant Tailor,

RECEIVES BY EVERY STEAMER,
Splendid Assortments of

Fall and Winter Goods,

NEW STYLES AND NEW PATTERNS.

HENRY FISHER,

CALIFORNIA CANDY FACTORY.

Wholesale and Retail Dealer in

Confectionery, Foreign and Domestic Nuts,
138 J ST. SACRAMENTO.

Oregon Transfer Company.

General Forwarding and Commission.

Freight and Baggage Forwarded
and Delivered with Dispatch.

Pianos and Furniture Moved.

Orders for HACKS promptly at-
tended to, Day or Night.

Office—Southwest corner Second and Stark Sts.
Mark—Care O. T. Co.

Oregon Steamship Company.

Pacific Coast Steamship Comp'y

ONLY DIRECT LINES

Between San Francisco, Cal. and
(Portland), Oregon and Wash-
ington and Idaho Territories.

The Steamers engaged on this route are the

New and Powerful Iron Steamships

"OREGON,"

"GEORGE W. ELDER,"

"STATE OF CALIFORNIA."

Steamer leaves San Francisco and Port-
land every five days,

Connecting at Portland with the Oregon and
California and Oregon Central Railroads for all
points in the Willamette, Umpqua, and
Rogue River Valleys and Southern Ore-
gon. With the Oregon Steam Navigation Com-
pany's boats for all points on the Upper Col-
umbia River, Eastern Oregon, and Wash-
ington and Idaho Territories, also, with a
regular line of Steamers to Victoria, V. I.,
Fort Wrangel and Sitka, Alaska Territory.

Tickets to all points on the O. & C. R. R. and
O. C. R. R. sold at reduced rates.
To save expense and detention, parties
should be careful to ask for tickets by this route.

G. W. WEIDLER, Agent O.S.S. Co.,
Cor. F and Front Sts., Portland, Ogn.

J. McCRAKEN & Co., Agents P.C.S.S. Co.,
60, 62 and 64 North Front St., Portland, Ogn.

H Dayton & Hall,
Dealers and Importers in
HARDWARE
Sporting Goods
and Scroll Saws,
Cor. First and Taylor Sts., Portland, Or.

H. Hanson,
NURSERY & SEEDSMAN.

Seedstore and office, 84 Front st., Portland, Ogn.
Catalogues free. Nursery, East Portland.

NEW YORK HOTEL,
Deutesches Gasthaus, 17 N. Front St., oppo-ite
Mail Steamship Landing, Portland, Or.

H. ROTHFOS & CO., Proprietors.
Board per week \$4; Board per week, with Lodg-
ing, \$5; Board per day, \$1; single meals, 25 cts.
lodging, 25 cts.
Baggage conveyed to and from the House free of
Charge. No Chinamen employed.

PILES.

Pfunder's Oregon Pile Salve is
a Simple but Certain Cure for
all forms of this annoying dis-
ease. Try it. All druggists sell
it. Price, \$1.



HARD Wood
ware.
EXCLUSIVELY
CARRIAGE AND WAGON
E. J. NORTHRUP & CO.,
Cor. First and Main Sts., PORTLAND, OGN.

F. R. CHOWN,
Importer and Dealer in
HARDWARE
243 First Street, near Main,
PORTLAND, OREGON.

ASSAYERS
AND
METALLURGISTS
No. 33 Stark Street, - - PORTLAND, OREGON.
Highest price paid for Gold Dust.
Tests made with care, and Analysis of all
kinds of Ores, Metals, etc.

SMITH & ALDEN,
Dentists
167 First St., between Morrison and Yamhill,
Portland, - - - Oregon.

J. DILL DUBOIS, W. B. KING.
DuBOIS & KING,
Wholesale Grocers,
Shipping and Commission Merchants,
112 and 114 Front St., PORTLAND,
416 Battery St., SAN FRANCISCO.
Special attent on given to the sale of Wool,
Grain, Flour and Produce in Portland and San
Francisco.

DONALD MACLEAY, KENNETH MACLEAY, Portland.
WM. CORBITT, 202 Sacramento St., San Francisco
CORBITT & MACLEAY,
13 & 15 Front St., and 10 & 12, First St., Portland, O
WHOLESALE GROCERS,
Shipping and Commission Merchants.

Importers of
TEA, TOBACCOS, &c,
Exporters of
Wheat, Flour, Wool, and all kinds of Ore-
gion Produce.
Liberal Cash Advances on Consignments.

A. H. JOHNSON,
Stock Broker, wholesale Butcher and
Packer, and dealer in all kinds of
Fresh and Cured Meats, Bacon,
Hams and Lard.
Special Attention given to supplying Ships.
Stalls 26, 27 and 28, Central Market.
Portland, Oregon.

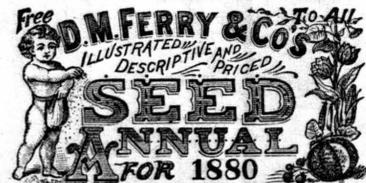
W. D. Prettyman. J. Campbell. W. F. Creitz
PRETTYMAN, CREITZ & Co.,
Real Estate, Collection and Employ-
ment Office.
FARMING PROPERTY A SPECIALTY.
Farms and City Property for sale.
1 St., near Fourth, East Portland, - - Oregon.

Silk Hats. The largest
and best
assortment
at
Meussdorffer's Hat Manufactory,
151 Front and 162 First Sts., Portland.

Employment and Real Estate Office
N. W. cor. Second and Taylor Sts.,
PORTLAND, OREGON.
Work furnished at short notice, Col-
lections promptly attended to.
Real Estgte Bought and Sold, by
M. B. WALLACE, Constable. F. STRONG, Solicitor.

Something New !
AT
JOHN A. BECK'S,
The Watchmaker and Optician,
149 Front Street, - - PORTLAND, OR.
BIFOCLE SPECTACLES,

For near and far-seeing—TWO FOCUS IN ONE
GLASS—in gold, silve, and steel frames. Don't
fail to see them.
Also, a fine line of American Watches, gold
and silver cased, direct from the East, at prices
that will defy competition. Watch work a spe-
cialty, and guaranteed to give satisf-ction.



Will be mailed FREE to all applicants, and to customers without
ordering it. It contains four colored plates, 600 engravings,
about 200 pages, and full descriptions, prices and directions for
planting 1500 varieties of Vegetable and Flower Seeds, Plants,
Roots, etc. Invaluable to all. Send for its Address,
D. M. FERRY & CO., Detroit, Mich.

THOS. VARWIG,
Plumber, Gas and Steam Fitter,
And dealer in Lead and Iron Pipe,
Copper Bath Tubs Coppe- Balls, Copper
Boilers, Brass Cocks, Closet Bowls, Pat-
ent Closets, Marble Basins, Rub-
ber Hose.
No. 73 Washington St., be. Thi d and Fouh,
PORTLAND, OREGON.

10 CTS. will pay for that valuable relic, a copy of the "Oregon Spectator," dated Oregon City, Feb. 5, 1846—the first number of the first newspaper ever printed on the Pacific coast. Address L. Samuel, Portland, Oregon.

OREGON STEAM NAVIGATION CO.

Navigating the Columbia River.

 **BOATS OF THIS COMPANY RUN** as follows:

Between Portland and Astoria,

Daily (except Sunday),

Connecting at Kalama with Northern Pacific Railroad, and connecting lines to Olympia, Seattle, and all points on Puget Sound, and Victoria B. C.

Connecting at Astoria with lines of travel to Shoalwater Bay, Fort Stevens, Cape Disappointment, &c.

Between Portland and The Dalles.

Daily (except Sunday.)

Passing through some of the finest scenery in the world, and connecting at The Dalles with stages for Canyon City and all points in Eastern Oregon.

Between The Dalles and Wallula,

Semi-weekly,

Connecting at Umatilla with daily stages for Grand Ronde Valley, Boise City, and the Central Pacific Railroad.

Connecting at Wallula with railroad for Walla Walla and daily stages to Lewiston.

For Lewiston—and points on Snake River weekly, during the boating season.

The daily Portland papers contain advertisements giving passenger schedules and hours of leaving Portland for various points.

OFFICE, at Portland.—S. E. corner Front and Ash streets, up stairs.

GEO. J. AINSWORTH,
Gen'l. Supt.

The Latest Styles of elegant **DRESS HATS** can be had only at

Meussdorffer's Hat Emporium,

J. S. KELLER,

Butcher and Packer,

DEALER IN

Beef, Pork, Mutton, Veal, and Corned Meats of all kinds.

Cor. First and Madison Str., PORTLAND, OR.

EMPIRE BAKERY.

CARL VOSS,

Manufacturer of

Bread, Cakes, Pastry, Pilot Bread,

Soda, Picnic, Butter, Boston,

Sugar and Shoo-Fly Crackers,

Jenny Lind Cakes, Ginger Snaps, Etc.,

42 Washington Street,

PORTLAND, OREGON.

Orders from the Trade solicited and promptly attended to.

CHAS. HIRSTEL & CO.,

Importers and Wholesale Dealers in

Books & Stationery,

NOTIONS, TOYS, Etc.,

106 First and 107 Front Street, PORTLAND, OR.

AGENTS FOR

John Foley's Gold Pens and Pencils, Thomas' Ink, Cairo Papers, Perfumeries, Wostenholm's Celebrated Cutlery, School Books and Toys, Yankee Notions.

WHALLEY & FECHHEIMER.

Attorneys at Law,

Rooms Nos. 7 and 8 in Glisan's Building, corner First and Ash Streets, Portland.

A RARE CHANCE

TO OBTAIN ANY NUMBER OF NEWSPAPERS AND MAGAZINES FREE OF CHARGE.

Determined to introduce THE WEST SHORE (Oregon's illustrated newspaper) into every family circle on the Pacific Coast, the proprietor has made arrangements with the leading publishers in the United States whereby he is enabled to give away one year's subscription to any paper or magazine to any one who will make up a club of subscribers to The West Shore, as follows:

Club 1 consists of 3 subscribers at \$2.00 each, to the getter-up

We will send free for one year, postage paid, any of the following publications: American Agriculturist, American Poultry Journal, Jolly J. Ker, Budget of Fun, N. Y. Sun, Herald, World, Cincinnati Gazette, Times, Commercial, Boston Traveler, Globe, or Journal, Baltimore American, or Sun, Omaha Republican, St. Louis Globe Democrat, Journal, Republican, Times, Hall's Journal of Health, Chicago Young Folks' Monthly.

Club 2 consists of 4 subscribers at \$2.00 each, to getter-up

We will send free for one year, postage paid, any of the following: Burlington Hawkeye, Chicago Ledger, Inter-Ocean, Danbury News, Detroit Free Press, Gleason's Pictorial, Peterson's, Godey's Leavenworth Times, Springfield Republican, or Union, Philadelphia Sunday Mercury, American Rural Home, American Bee Journal, American Poultry Journal (colored plates), Chicago Drover's Journal, Indiana Farmer, St. Louis Journal of Agriculture, Prairie Farmer, Western Rural, Chicago Alliance, Masonic Review, Dwight's Journal of Music, Wide Awake, Youths' Companion, Nursery, American Journal of Education.

Club 3 consists of 6 subscribers at \$2.00 each, to getter-up

We will send free for one year, postage paid, any of the following publications: Demorest's Fashion Magazine, Arthur's Home Magazine, N. Y. Ledger, Appleton's Journal, Good Words, Sunday Afternoon, Sunday Magazine, N. Y. Weekly, Popular Monthly, St. Nicholas, Detroit Medical Review, Dental Cosmos, U. S. Medical Investigator, Mining Review, American Builder, Voice of Masonry, The Methodist, Illustrated Christian Weekly, Golden Rule, Chicago Standard, Advance, New England Farmer, Kansas Farmer, Rural New Yorker, Gardener's Monthly, Cultivator and Country Gentleman, S. F. Chronicle, Bulletin, Cincinnati Gazette, Chicago Semi-Weekly Inter-Ocean, N. Y. Semi-Weekly Post, Times, Tribune, World, American Union, Boston Pilot, or True Flag, Chicago Journal of Commerce, Educational Weekly, Irish World, Saturday Night, Yankee Blade.

Club 4 consists of 8 subscribers at \$1.75 each, to getter-up

We will send free for one year, postage paid: S. F. Argonaut, Harpers' Weekly, Monthly, or Bazar, Atlantic Monthly, Scribner's, Lippincott's Scientific American, Frank Leslie's Illustrated Paper, Chimney Corner, Ladies' Journal, Illustrated Times, Ladies' Magazine, Chicago Field, N. Y. Clipper, Forest and Stream, Wild Oats, Chicago Semi-Weekly Inter-Ocean, American Naturalist, Engineering and Mining Journal, N. Y. Medical Journal, Philadelphia Medical Times, N. Y. reprint of Westminster Review, Edinburg Review, London Quarterly, British Quarterly.

Club 5 consists of 10 subscribers at \$1.75 each, to getter-up

We will send free for one year, postage paid, any of the following publications—Waverly Magazine, Eclectic, North American Review, Popular Science Monthly, American Journal of Medical Science, and the Medical News and Library, American Law Times, International Review, Young Ladies' Journal, Magazine of American History, Turf, Field and Farm, N. Y. Spirit of the Times, Chicago Tri-Weekly Journal, or Tribune, St. Louis Tri-Weekly Republican, Detroit Daily Evening News, or Telegraph, The Nation.

Club 6 consists of 15 subscribers at \$1.50 each, to getter-up

We will send, postage paid, for one year any of the following publications: Littell's Living Age, N. Y. Daily Sun, St. Louis Daily Times, S. F. Daily Chronicle, Post, or Sacramento Daily Bee.

Club 7 consists of 25 subscribers at \$1.50 each, to getter-up

We will send, postage paid, for one year: N. Y. Daily Illustrated Graphic, Portland Daily Oregonian, S. F. Daily Bulletin, or Alta, N. Y. Daily Times, World, or Herald, St. Louis Daily Globe-Democrat, or Republican, Cincinnati Daily Times, Enquirer, or Gazette, Detroit Daily Free Press, or A handsomely bound copy of Webster's Unabridged Dictionary of 1878. Retail Price, \$12.00.

RULES GOVERNING CLUBS:

Names for clubs may come from any postoffice, as every paper will be sent in a separate wrapper. Any person wishing to obtain 2, 3, or more papers, can do so by simply securing the necessary number of names for each, for instance—you wish the N. Y. Sun and Godey's—all it will be necessary for you to do is to make up a list of 7 subscribers—as the Sun is found in club one, and Godey's in club two. Now we will say you want Scribner's (club 4), Peterson's (club 2), S. F. Chronicle (club 3), you have but to get 18 subscribers to THE WEST SHORE and all of the three publications will be sent to you free for one year.

Now is the time to make up clubs. We have taken this method of distributing good wholesome literature free of charge, believing that on the whole it will be found more valuable and pleasing than the clap-trap usually given as premiums by publishers.

THE WEST SHORE

Is now a large 32-page paper, handsomely illustrated, ably edited, and is sent out stitched and enveloped in handsome granite cover. No family should be without it.

The Hon. H. H. Bancroft, who is considered one of the very best authorities on literary subjects in the United States, says of it: "As a historical and practically scientific periodical, I regard THE WEST SHORE as by far the best published on the Pacific Coast."

Dr. J. A. Richardson says: "You deserve the endorsement of every man who has the good of his State at heart. Consider me a perpetual subscriber."

Hundreds of other testimonials and endorsements are on file at our office. The people's endorsement—"THE WEST SHORE has the largest circulation of any publication in the Pacific Northwest."

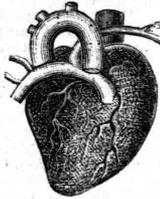
ROLL IN YOUR CLUBS.

Address: **L. SAMUEL, Publisher, Portland, Or.**

First premium awarded to Abell for the best cabinets, cards, and retouched photographs, at the late State Fair.

The light running "New Wilson" still remains the favorite amongst Sewing Machine buyers. John B. Garrison, at No. 149 Front street, tells us that they can't be beat.

Buchtel, the "old stand-by" of photographers, is still on deck at his elegant gallery, corner First and Morrison streets, where he is prepared to take all kinds of pictures, in the most approved style of the art.



King of the Blood

Cures all Scrofulous affections and disorders resulting from Impurity of the blood. It is needless to specify all, as the sufferer can usually perceive their cause; but *Sall Rheum, Pimples, Ulcers, Tumors, Goitre, Swellings, &c.*, are the most common, as well as many affections of the *Heart, Head, Liver and Stomach.*

SCROFULA.

Wonderful Cure of Blindness.

D. RANSOM, SON & Co.: For the benefit of all troubled with Scrofula or Impure Blood in their systems, I hereby recommend King of the Blood. I have been troubled with Scrofula for the past ten years, which so affected my eyes that I was completely blind for six months. I was recommended to try King of the Blood, which has proved a great blessing to me, as it has completely cured me, and I cheerfully recommend it to all troubled as I have been.

Yours truly,
MRS. S. WEATHERLOW, Sardinia, N. Y.

\$1.000

will be paid to any Public Hospital to be mutually agreed upon, for every certificate of this medicine published by us which is not genuine.

Its Ingredients.

To show our faith in the safety and excellence of the K. B., upon proper personal application, when satisfied that no imposition is intended, we will give the names of all its ingredients, by affidavit. The above offers were never made before by the proprietor of any other Family Medicine in the world.

Many testimonials, further information, and full directions for using will be found in the pamphlet "Treatise on Diseases of the Blood," in which each bottle is enclosed. Price \$1 per bottle containing 12 ounces, or 40 to 50 doses. Sold by druggists. D. RANSOM, SON & Co., Prop'rs, Buffalo, N. Y.

J

USTICE'S

In addition to a large stock of Legal Blanks such as Deeds, Mortgages, Note and Order Books, and all forms for Sheriffs, County Clerks, Circuit and Probate Courts, Business Men, etc., I keep a full supply of all forms for Justice's Courts. Send by postal card for Catalogue and Price List. Everything in Printing line at lowest rates. E. M. WAITE, Salem.

BLANKS.

Bound Volumes.

Neatly bound volumes of the "West Shore," containing one year's complete numbers, are now ready for delivery and will be sent, postage paid, to any address on receipt of \$2.

Every Physician, whose name appears in this column, is a graduate of a reputable Medical College.

T. T. Cabaniss, M. D.

OFFICE—Cor. First and Main Sts., over Plummer's Drug Store.

H. Carpenter, M. D.

(Late of Salem.)

OFFICE—First and Morrison street, up-stairs.

Residence—375 Fourth Street, corner of Montgomery.

Wm. B. Cardwell, M. D.

OFFICE and Residence—Southwest corner First and Morrison streets.

J. A. Chapman, M. D.

OFFICE—Strowbridge Building, corner First and Alder.

Residence—Cor. First and Market.

F. B. Eaton, M. D.

(Diseases of Eye and Ear.)

OFFICE—Southeast corner First and Morrison streets.

Residence—Corner East Park and Yamhill.

E. P. Fraser, M. D.,

OFFICE—Northwest corner First and Stark streets—Union Block.

Residence—274 Second str. et.

R. Glisan, M. D.

OFFICE—Strowbridge Building, corner First and Alder streets.

Residence—Northwest corner Tenth and B.

J. T. Ghiselin, M. D.

OFFICE and Residence—Room 3 Ankeney's Block, First Street, between A and Ash

R. G. Rex, M. D.

OFFICE and Residence—Southwest corner First and Morrison streets.

Curtis C. Strong, M. D.

OFFICE—No. 3, Dekum's Building.

Residence, 225 West Park street.

W. H. Saylor, M. D.

OFFICE—Rooms 1, 2 and 3, Union Block, cor. First and Stark streets.

Office Hours—9-10 a. m., 1-4 and 7-8 p. m

Holt C. Wilson, M. D.

OFFICE—151 First Street.

Residence—Corner Fourth and B Streets.

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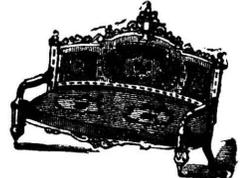
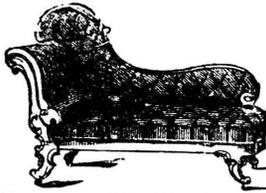
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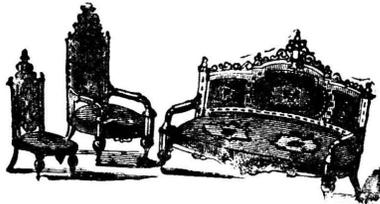
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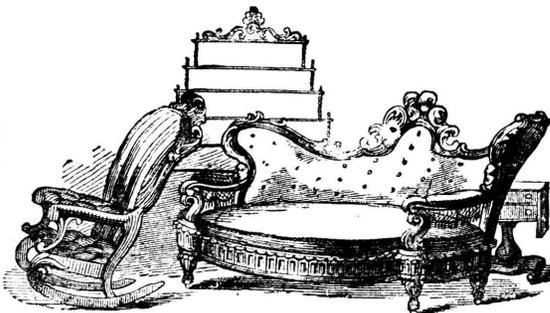
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