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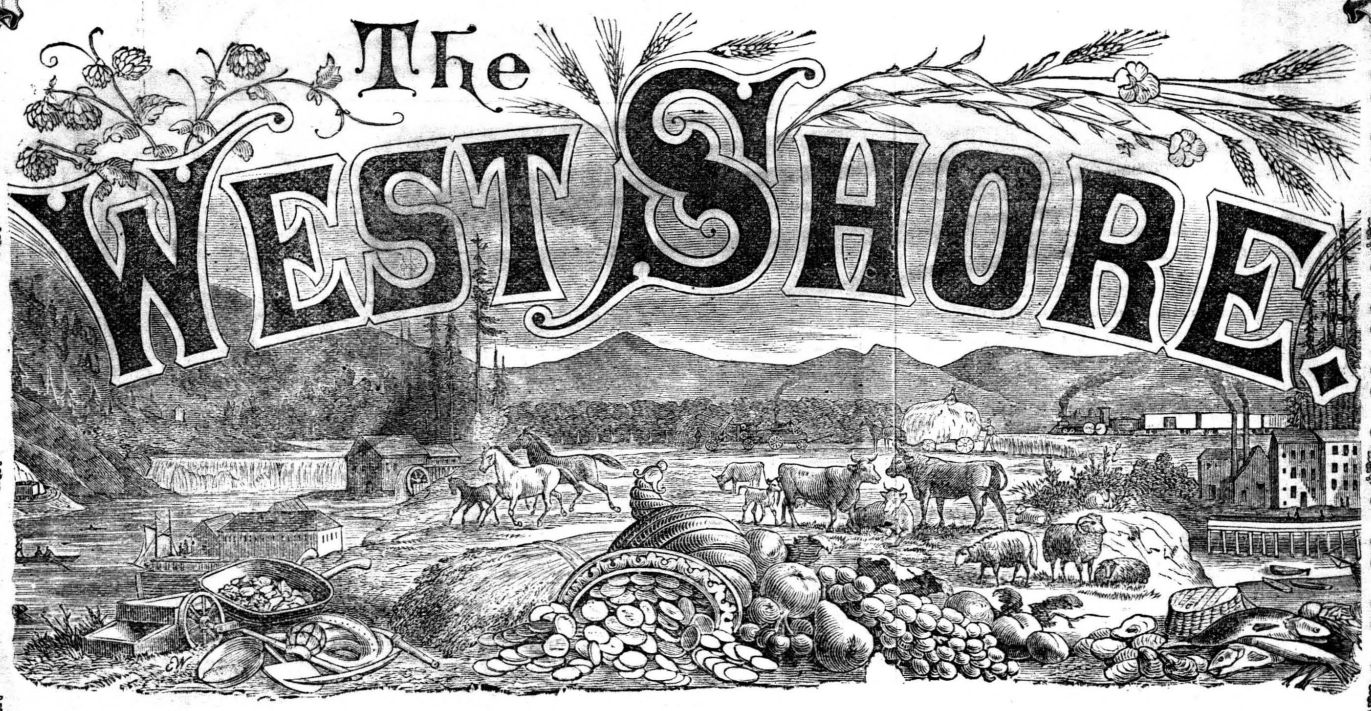

A FAMILY PAPER,

DEVOTED TO

LITERATURE, SCIENCE, ART,

AND THE

RESOURCES OF PACIFIC NORTHWEST.

Published by
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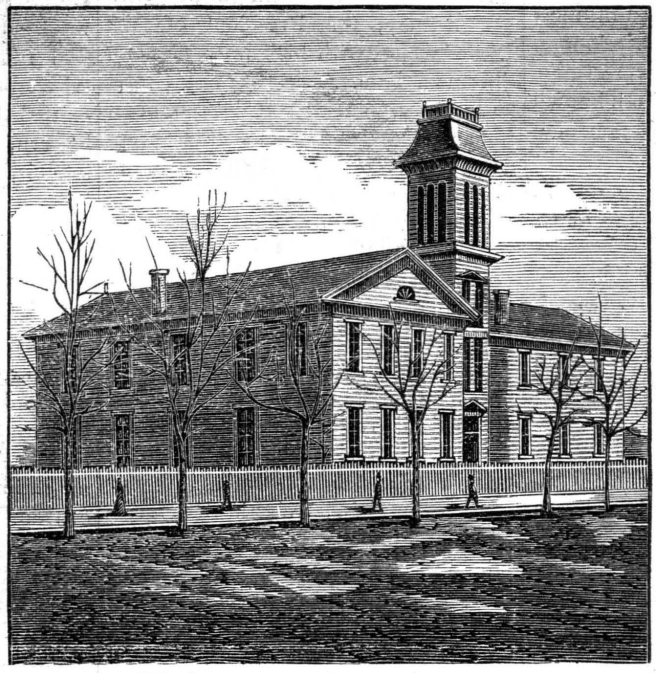
THE WEST SHORE.

VOL. 6—No. 9. { L. Samuel, Publisher, 5 Washington St, Portland, Oregon, October, 1880. Per Annum, $2.00. { Single copies 25 cts.

OUR EDUCATIONAL INSTITUTES.

In THE WEST SHORE for September we furnished our readers a most excellent view of the State University at Eugene City. We now present THE AGRICULTURAL COLLEGE at Corvallis, an institution possessing a thorough corps of professors, among whom we are pleased to notice, B. L. Arnold, President; Jos. Emery, Prof. of Mathematics; B. J. Hawthorne, Prof. of Languages, and E. B. McElroy. The college is beautifully located in the thriving city of Corvallis, in the very heart of the Willamette valley, and is connected by rail with Portland, as well as the principal towns in Washington, Yamhill, Polk and Benton counties. Corvallis has regular steamboat connection with Portland and all the towns lying on the banks of the Willamette river—in fact, no better spot could possibly have been selected for an agricultural college. A well conducted experimental farm adjoins the College grounds. There are at present 57 agricultural students enrolled—the law, however, provides for the free tuition of 60 scholars. The total number of students enrolled is 160, of which about 50 are young girls. between 13 and 18 years of age.



OREGON AGRICULTURAL COLLEGE AT CORVALLIS—Photo by Dr. Heslop.

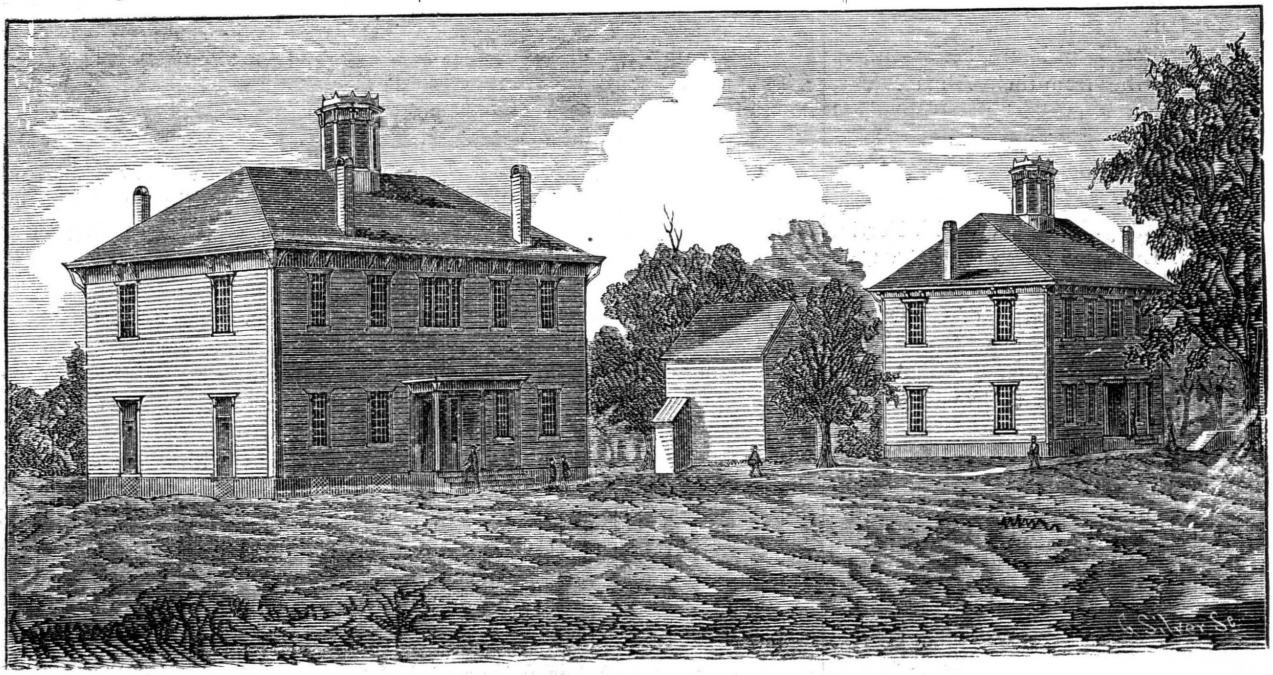
The fee for paying students is from $16 to $40 per year.

PACIFIC UNIVERSITY, FOREST GROVE.

The germ of this institution was a boarding school established by Mrs. Tabitha Brown, nearly thirty-five years ago. With very inefficient materials, and often under the most discouraging circumstances, this pioneer educator of the "Plains" clung to her design of establishing a permanent center of religious and social influence for this community.

The next stage in the growth of the institution was due to Rev. Harvey Clark. He was the real founder of the school as it now exists; for though closely connected by sympathy of design with Mrs. Brown's school, there was no legal connection between the two.

It is now more than thirty years since



PACIFIC UNIVERSITY AT FOREST GROVE, OREGON.—From a Photo by Robert Shane.

Mr. Clark brought his design into coherent form. He gave most liberal donations of land, which, together with similar gifts from Messrs. Walker, Naylor and Stokes, have been of most essential service to the school. Among the teachers of those times were Judge Shattuck and Capt. Keeler, both known by all old Oregonians and by many new ones.

Twenty-seven years ago, the institution became divided into the two departments, academical and collegiate, of which it now consists, and became regularly incorporated. Rev. S. H. Marsh was inaugurated at that time as the first president. Five years later, Rev. H. Lyman became a professor. His presence enabled Dr. Marsh to visit the East for the purpose of raising funds. Since that time, Pacific University has been on a firm though not very wide financial basis. Many excellent teachers, among whom we may particularly mention Prof. Tanner, now of Illinois, and Prof. Anderson, now of Seattle, have contributed their noblest efforts to the establishment of a thorough and a Christian institution.

Though in quantity not great, the quality of Pacific University's graduates has been such as to leave an impress on this entire State. Among its graduates and students may be mentioned H. W. Scott, Judges Watson and Stott, Messrs. Killin, Bell and Durham of the Portland Bar, Messrs. Bilyeu and Barrett of the Oregon Legislature, besides many others farther from their Alma Mater, useful in the medical, pedagogic and ministerial professions.

The following is the present corps of teachers: Dr. Herrick, President; J. W. Marsh, J. D. Robb, W. N. Ferrin, W. D. Lyman, Professors; Miss Carson, preceptress. The military department is under charge of Capt. Wilkinson.

The beautiful surroundings and pleasant society of Forest Grove render it peculiarly adapted to an institution of this kind.

GRANGE City contains six buildings used for warehouse purposes, two dwellings, two families, one livery and feed stable, one blacksmith shop, two hotels, two saloons, and one of the finest water privileges in the Territory. It is also expected that the steam ferry will be running before snow flies. Lots are selling for $50 each and those in choice locations are held at $150.

EVENTS OF THE MONTH.

The first part of the month or rather the last day of September, brought to this city some very distinguished visitors, namely, the President of the United States with his family, General Sherman, Hon. Alex. Ramsay Secretary of War, General McCook, the great Indian fighter, and others. The reception in this city was, for a loyal and wealthy place like Portland, a very tame affair. The cannons didn't go off at the right time, and the procession proceeded piecemeal, the whole arrangement lacked a leader, a Sanborn, who has heretofore made a success of similar demonstrations here. The President was everywhere else enthusiastically received, the city of Walla Walla with its 5,000 inhabitants, making by far the finest demonstration in honor of the event, of any city in the Northwest.

The second important event was the adjournment of the Legislature. It is something to be especially thankful for that if they did no good, they did but little harm. The Mechanics' Fair in this city continuing for 15 days was a grand financial success, and closed on the evening of the 23d. Oregon Manufactures were well represented, and the efforts of the management to amuse and instruct visitors deserved all the liberal patronage bestowed on the institution. The floral department especially was a pleasant place to while away a leisure hour.

The most important events of the month for residents of this city and surrounding country was the beginning of building the bridge across the Willamette. Stephen Maybell's poem will no longer be quoted, and before another twelve month passes, ferry boats in this locality will cease to be paying property. Fifty men are now employed in the preliminary work of pile-driving and building cribs for the foundation of this important structure. The pillars will be constructed of iron and filled with cement and rock, giving them an almost everlasting durability. Over these pillars Morrison street will be continued and merge into N street on the East Portland side. A draw 240 feet long having a revolving swinging motion will be constructed in the center, allowing a passage on each side one hundred feet wide. It is calculated that the entire time taken up in opening and closing the draw will be just three minutes.

EAST OF THE CASCADES.

Persons who have traveled in Eastern Oregon and Washington even as late as two years ago, would on their return to the same localities to-day find remarkable changes. In places where but unsubdued government lands existed then, well tilled farms are now to be seen, and neat villages with their schools, churches, etc., in close proximity. We remember traveling east of the Cascades five years ago, when the now famous wheat lands east of Walla Walla first attracted attention, and when new comers were cautioned against settling on them because they were away from markets. When we revisited the same locality two years ago we found the people more neighborly. They were glad to have immigration come in and settle near them, or from 50 to 150 miles above them, as best suited the wants of each. To-day immigration is pouring in there faster than ever, and yet there is room for more. Eight years ago we heard complaints of the bunch grass being all eat off from the beef-making hill lands east of the Cascades. The same cry has been going on ever since, yet thousands of dollars are annually realized by the cattle kings of that favored locality, and on our recent trip there, traveling over eight hundred miles by stages and wagons, we were pleased to note that the thousands of cattle and horses we saw had glossy, well-stretched coats on them, and were in no immediate danger from starvation.

In driving across the country from Pomeroy to Colfax, a distance of about fifty miles, we measured bunch grass in many places over three feet in height. The people of Eastern Oregon and Washington do not as yet seem to realize the era of prosperity about to open to them. At present the country is being honeycombed by railroads; this will create a market for cereals where none existed before. The year 1881 will witness the opening of the several roads with their feeders, and this will without a doubt be the most prosperous season ever experienced by Eastern Washington.

The Northern Pacific from Ainsworth to Spokane Falls will be finished in time to move the crop of 1881. The Oregon Railway & Navigation Co., is pushing its roads in all directions. The road from the Cascades to the Dalles is

located and the right of way secured, this road runs up on the Oregon side, tapping the farming section on Hood River. From the Dalles the road is finished to John Days, and graded to Umatilla. Track is now laid from a point fifteen miles below Umatilla to Walla Walla, and the road in full operation between Umatilla and Walla Walla. Track laying is being pushed ahead from both ends of the road. Grading is also completed from Walla Walla to Waitsburg and Dayton. At Junction—four miles from Waitsburg, a branch road will run to Grange City, here it will cross Snake River and run by way of Taxsas Ferry to Colfax. Four miles above Grange City a road will leave the main branch, proceed up the Pataha towards Lewiston, passing one of the most fertile regions in Eastern Washington.

A road is also located from Umatilla across the blue mountains towards Baker City. This road goes through Idaho and will finally connect with the Union Pacific. Below Taxsas Ferry the Government is improving the navigation of Snake River, so that hereafter the suspension of navigation on that River will be unheard of.

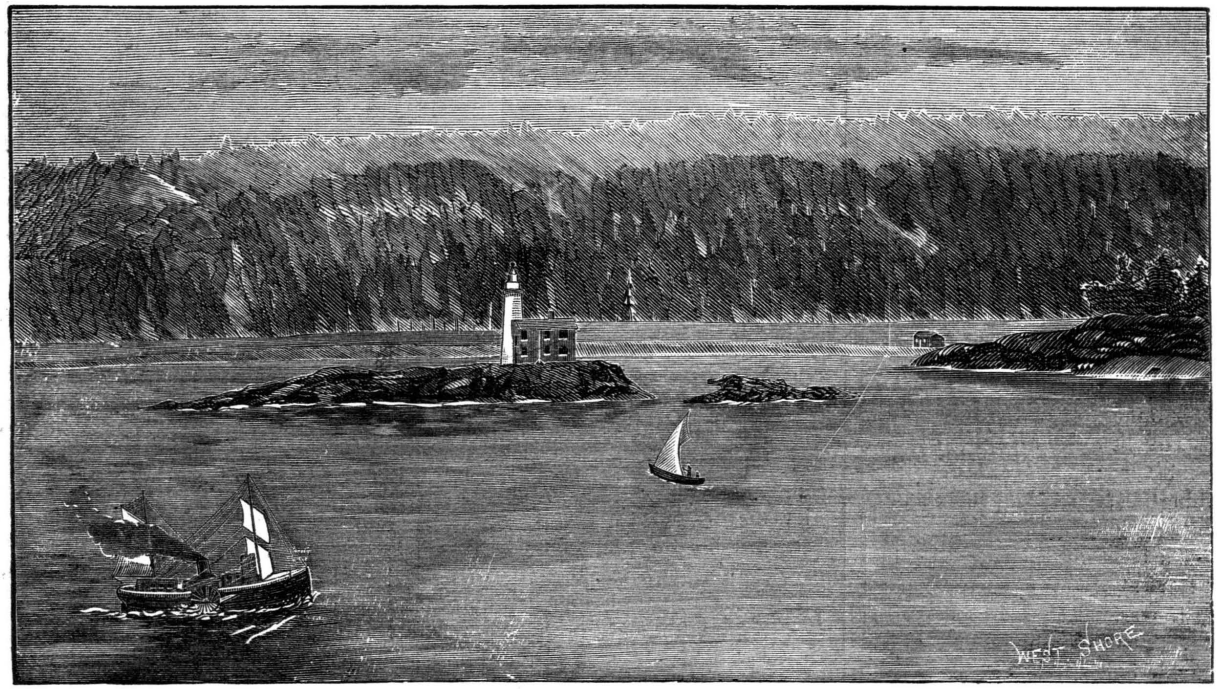
THE Kittitas valley and its tributaries are rapidly settling up, and many new improvements are being made in various parts of the valley.

BRITISH COLUMBIA.

Times generally are improving in British Columbia. Settlers are going in and availing themselves of the extraordinary liberal inducements of the Government, and gradually wild lands are being subdued both on the island and mainland. Altogether the outlook for our Canadian neighbors is rather encouraging.

FITZGUARD LIGHT.—At the entrance to Esquimalt Harbor, B. C,, is one of the neatest and best arranged light houses on the Pacific. This is a very important point for the English Government, their Navy Yard and Supply Station are located here and the construction of the Graving Dock now being pushed forward with all possible dispatch will add still more to the importance of the harbor and light.

A NOVEL SIGHT.—The Snake and Clearwater rivers, for a distance of 100 miles above Lewiston, and from there down to Taxsas Ferry, presents at present the rather novel appearance of a floating wood yard. Since the suspension of steamboat navigation on the Snake river, Mr. S. R. Smith, the proprietor of the Taxsas Ferry sawmill, has been floating down timber, but not in booms as is usually done. The timber is simply pitched into the river and begins its march of 150 miles to the sawmill. Thirty-five men are employed to start the pieces when any get stranded on the banks. At the sawmill a boom stretched across the river prevent the further progress of the timber. Since the first of September, when the first float commenced, 29,000 sawlogs, 40,000 R. R. ties, 1,200 cords of wood and several thousand telegraph poles have come down. The mill which is in charge of Mr. J. A. Lesourd, formerly of this city, has a cutting capacity of 100,000 feet in 24 hours, and from November first will run night and day in order to supply the large number of orders for lumber now ahead. This demand for the lumber is one of the best evidences of the prosperity of the upper country.



FITZGUARD LIGHT—ENTRANCE TO ESQUIMALT HARBOR, B. C.—From a Photo by R. Maynard.

GUMPTIONVILLE is the name of a pretentious village (?) on the Columbia River. The proprietor of this burg isn't at all stingy about the size of his town lots. Every lot is said to have 100 feet river frontage, with a depth of from four to five miles, and can be bought at from 50 cents a piece upwards. Any one purchasing two dollars and fifty cents worth of town lots at one time is presented with a handsome chromo worth more than the lots. This is the spot where the Weidler Sawmill is located.

EASTERN Oregon and Washington shipped nearly 70,000 tons of grain to Portland last year.

UP THE COLUMBIA BY LAND.

W. D. LYMAN.

To one having seen the shores of the Columbia from the steamer only, it never occurs that those towering cliffs are really pieces of rock, that those trailing spray clouds are actually water, or that those passing evergreens are composed of pitch, bark and fiber—a phantasmagoria of sky, rocks and water! A kaleidoscope fifty miles long, pointed at the morning sun and curtained by the mists of the ocean! Such is the Columbia between Cape Horn and Hood River. Can a man walk behind the scenes? Can such a puny thing set foot on those shining crags or quaff the froth from the waterfalls bubbling out of those goblets of the gods? Could I, for instance, enter into that land of stone giants and frozen temples two thousand feet high, and come forth alive?

Such were the thoughts that agitated my brain one August afternoon, when after having left the effete and enervating civilization of Portland in the early morning; after having ridden through the great dairy farms eastward therefrom; after having put behind me the river Sandy, stained with the dregs of Mt. Hood's morning cup; after having crept through ten miles of jungle stretching eastward from the Sandy, I suddenly emerged and stood on the edge of a beautiful plateau, five hundred feet above the sacred waters. There it was. The land of the unknown. The soft alluvial soil with its vine-maple jungles, the cheese-factories and cow pastures, the houses, barns and fences, were all behind.

Before us was the first of those gigantic piles of basalt which from the deck of the steamer had seemed so picture-like, so fantastic, so unreal.

We were actually behind the scenes. Now we can see what hands shift the scenery. Now we can find the pots of colors where the changing hours dip their brushes. Now we can see where the waterfalls get their wondrous whiteness, and where the rainbows hide. Now we can enter the dressing-room of the pine trees where they deck themselves with moss and sunbeams. The first scene is Rooster Rock and the lofty cliff behind it which has no name, but might be called Cape Eternity. Eternal it looks in its shaggy grandeur. It seems to frown down upon the twenty miles up and down and the two miles across of yellow water. Other still mightier bastioned heights up the river frown back. But these rocky frowns are softened by clinging ferns and trailing vines.

Wherever the water comes trickling over the precipice, there the greenest of moss and the brightest of flowers hide the black bareness of the rock. A break-neck road down from the plateau leads us to the river-bank.

It is the flood-time of the mighty stream. The water comes swashing through the long rows of cottonwoods and makes great sport of the fences, barns, and such other little tokens of inhabitancy as happen to be in the vicinity.

There is a polished log fairly protruding into the road. That log grew in Idaho or British Columbia. A century's growth on the fertile bank of some mountain creek had carried its branches high and its roots deep.

But an evil time came in the history of that tree. Snow, sunshine, deluge. These three degrees of comparison washed the standing-room from beneath its feet. One frightful plunge, and the ill-starred forest-king set out on his funeral march of a thousand miles. A wild journey for one accustomed to a quiet life, a journey involving rapid changes and admitting of no lay-over checks. Through the torrents to the quiet lakes of the Upper Columbia, from the lakes again to the torrents, with occasional half-way rests. Through the Dalles, through the Cascades, and, stripped of bark and of every branch, it drifts at random on the solemn current of the lower river. And to what end has the tree sought such a resting place? The next day, some salmon-spearing Siwash or some sore-footed tramp kindles a fire against it, and amid the whirl of smoke and the crackle of flame, that long-travelled tree vanishes in the air.

I would remark, at this point, that the road up the river is a trail. There are points where it seems hardly even a trail. Nevertheless the pedestrian finds no great difficulty in parting the maple copses and climbing over the gigantic blocks of rock that have rolled down from their too lofty heights. Almost constantly we see the shimmering of the river behind the willows and cottonwoods. Neverthless, it is only at a very few points that the cliffs come right down to the water's edge. Through almost the entire distance from the Cascades to Rooster Rock, there is a most excellent railroad route. At points where my observation from the steamer had led me to suppose that there was hardly level land enough for a squirrel to stand safely, I found fertile flats one quarter of a mile wide.

Fourteen miles from Rooster Rock, and the curtain rises on scene second of the great scenes. That fourteen miles has exhibited numberless little scenes which would be great anywhere else. Huge cliffs, streaked with snowy cascades, mountain streams of wondrous clearness, overgrown by vegetation of almost tropical luxuriance.

But we forget these varied beauties as we stand in wonder before that marvel of beauty, Multnomah Fall; triple-named. Some longing swain would have that snowy vail albeit somewhat large, to hide the face of his beloved, hence it was called the Bridal Vail. Some other bold genius, seized with an equine frenzy, named it—tell it not in Oregon City, publish it not in the streets of Salem—Horse Tail Fall. What a horse the mind's eye of that chap must have witnessed, pawing the crest of the Cascade mountains, and dipping his eight-hundred-foot tail in the Columbia! But the Indian name is most beautiful. There is a sweet ripple to those liquid sounds, Multnomah, and a sonorousness to their whole effect that well suggest the soft plash mingled with the wild majesty of the fall. This musical splash—not a roar—is the first intimation to the traveler that he is approaching anything unusual. Then perhaps casting his eyes upward, he sees a dusky cliff fringed with trees. Scarce discernible among the trees, a moving whiteness. A few steps more and he stands before a sundered wall, 200 feet high on one side, and 30 on the other, through which flows a limpid stream. For a few yards, he follows the alternate pools and rapids of the creek through this rocky corridor. Then he suddenly emerges into a little bit of a valley, edged with a little bit of a beach, and covered with the greenest grass.

The little valley terminates in a wall of rock seventy feet high, over which the creek comes tumbling into a deep

pool. We climb this rocky ledge, scrambling through brush and fern drenched from the flying spray of the fall. The little space is soon traversed and we stand in front of the Multnomah Fall. A bluff eight hundred feet high, more than perpendicular—it overhangs ; a long row of frightened looking pines ; a deep, dark cavity, like a volcanic crater ; a black pool ; and then stretching all the way from that sunny-edged bluff to that black pool, a band of spray as white as snow and soft as wool. The creek comes reluctantly to that frightful jump-off, and as we look away—up that eight hundred feet, it seems as if the bright waters rear back, till urged from behind, it can no longer hesitate, but hurls itself sheer through the air, a shower of pearls and foam, and drips with gentle patter into the pool beneath.

There are no rainbows, for the sun never shines there. The grass and shubbery, pale and sickly, seem to peer anxiously around for more light. But it is the native home of the moss. ' In long pendants or dense cushions, it sways and quivers as the spray whirls by it, or the cold wind from underneath the Fall flies over it.

Gentle in its tumult, beautiful in its grandeur, soothing in its wildness, and bright amid its perpetual gloom, we hang this picture in the brightest light of memory's gallery.

Multnomah Fall fairly inaugurates the wondrous panorama. We cannot begin to tell of the water-falls and rock-falls ; how the seething lava stiffened, and the moss and flowers strove to hide its shaggy bareness; how now, ages after, we find human habitations set amid those volcanic memorials; how now, amid that rumble from the underworld with which the Columbia chants his conquest of the hills, we hear the shriek of steamers and the roar of blasting powder ; how, just opposite the middle Cascades, our execrable trail suddenly expands into the Dalles and Sandy wagon road ; how we meditate on the unstability of human roads and the uncertainty of appropriations therefor ; because we remember that sixty thousand dollars has been given for the purpose of making the said road, and yet it is not half-made. Whether the appropriations proved "bar'ly enough for the officers" or not we cannot say, but we are prepared to say that this failure in a work which would be of incalculable benefit to the *people*, is the most beautiful instance afforded in our own State of that grand principle of the "Circumlocution Office," "*How not to do it.*"

The road from this point on is a good one. The portion around Shell Mountain must have involved vast labor and patience. We can take but a hurried glance at the Locks and the village of shanties that have grown around them. A grand undertaking is in progress here ; one, let us hope, which will be speedily and efficiently carried out. But in this country, where everybody is free but the people, we must *wait* for the completion of any government job.

A broad strip of level land, covered with a dense growth of young firs, extends for some distance above the Locks.

We must glance skyward once more as we hasten through the woods. About five miles from the Locks, while descending a densely wooded hill, we glance southward through a break in the trees, and—then stand motionless at the sudden sight. Right before us, looking as though about to fall and bury the whole country, is that stupendous, but nameless crag, which from far and near, from steamboat and rail-car can be seen to overtop all its rocky brotherhood. More than three thousand feet up, up, the eye follows the black outline, until it rests upon the dizzying point.

We hang this picture next to that of the Multnomah Fall. It is a beautiful thing that this picture gallery of the mind is so elastic. As we go on, we find room in it for a few large paintings of the blue heights across the river which appear in duplicate in sky and water. We stow away several studies of Shell Mountain, with its broken fingers pointing heavenward and that dizzy road winding over its downfallen pinnacles. And when Hood River is reached and the journey ends, what pictures by the hundred, sky and land, and water, hang there. But the colors into which he who is to place them on canvass must dip his brush, are as yet hidden behind the rainbow.

So we have safely traversed the charmed land. As we bid good-by to the river in the early morning, we see that the snow-peaks have just caught the flush of dawn. And as we recall the old Egyptian story of Memnon, how the harp of the statute sounded of itself when the morning sun first touched it, we wonder if there are not harps sweeter than Memnon's, which sound these rosy-tinged obelisks and temples and pyramids of Nature.

The ancient harp was strung to the "music of the spheres." That same eternal music rises now from the river flowing seaward and from the winds that pour inland to meet it.

Where is there a river like our river? From the very heart of the continent it comes, waking the silence of vast prairies, and then echoing back the newly sounded notes of human industry. It receives cargoes by the hundred from the most fertile of lands, and then laps the barest crags or sweeps the most desolate of deserts. Its stately width of miles wanders over the flatest of plains, and there is imprisoned by walls of adamant in black pools across which we can almost throw a stone. Rising fifty feet in flood-time at the gateway of the mountains, it thunders down the narrow pass as if to tear away the foundations of the earth ; then with calm and majestic flow it passes onward to the sea.

In its fifteen hundred miles of constant change, it sees all shapes of land and rock which Nature's most fantastic mood could frame. The glaring sun and grassy hills of the interior succeed the stupendous snowy mountains of its far North, away beyond the British line. To the rolling hills, succeed the vast and sandy Umatilla plains. Below the plains, the riven range of the Cascades, lava scorched and water-worn. Below the mountains, that two hundred miles of "continuous woods" through which our greatest poet immortalized the name of Oregon, and beyond the woods—the sea.

LARGE POTATOES.—Mention is made in the Walla Walla *Union* of nine potatoes of the White Pearl variety, raised by Mr. Alfred Thomas, on Mill Creek, near Walla Walla, which weighed 18½ lbs. We have before us at this writing two potatoes, (Peerless,) from a lot of six, which weighed 16 lbs. These potatoes were raised by Mr. Talbot, at Dayton, W. T., and it is claimed that they were not selected before weighing.

It's meet and drink that is depriving many a family of food.

OUR CLUBBING LIST.

We club at greatly reduced rates with all the leading papers and magazines in the United States. As a special offer for this month, we will send THE WEST SHORE and *Andrew's Bazar*, with a choice as premium of a collection of $1.00 flower seeds from the Mohawk Valley Seed Gardens, or 50 cents worth of Andrew's celebrated pinned paper patterns, to any address, postage paid, on receipt of $2.75. For $4.00 we will send the *American Agriculturist* in addition to the above. *Harper's Monthly* and THE WEST SHORE for $5.00.

A CURIOUS DOCUMENT.—We have before us, through the courtesy of S. B. Plympton, of Westport, 6 pages of closely printed matter, taken from the April number, 1832, of the *New England Magazine*. The article is entitled "Geographical Sketch of Oregon Territory," and is signed W. J. S. It ridicules the idea of Oregon ever becoming a settled and civilized portion of the world, and tells about the numberless savage tribes of Indians to be encountered, and of the land unable to support any large number of settlers. If W. J. S. is still alive we hope he will come to Oregon, take a look at our well tilled farms, our bands of stock, cattle, sheep and horses; our cities with good schools and churches, our railroads and palatial steamboats, in fact a State in point of wealth in the foremost ranks of the republic, and this notwithstanding the opposing element of the W. J. S. order that the early Oregon pioneer had to contend with.

A LARGE RATTLESNAKE.—We have in our possession the rattles from a snake which we believe to be the largest ever heard of. The snake was killed six miles from big Lake in Spokane county, by Mr. F. J. Cassidy. It was 5 feet 2 inches long and 3 inches in diameter. The fangs were 1¼ inches long and immensely powerful, easily striking through a heavy cowhide boot. The rattles are 24 in number, and can be seen at this office.

A NEGRO was suspected of surreptiously meddling with a neighbor's fruit, and being caught in a garden by moonlight, nonplussed his detectors by raising his eyes, clasping his hands and piously exclaiming:—"Good heavens! dis yere darkey can't go nowhere to pray any more without bein' 'sturbed."

SMART SAYINGS BY LITTLE FOLKS.

A four year old not far from this office, hearing the different candidates discussed and recognizing a rather familiar sound in candy-dates, asked: "Papa can't I have a bag full of them."

This from Baker City.—A four year old, named A. B. S., on being told that his namesake Hon. "A. B." an ex-Governor and Congressman—had been making a great speech, asked, "Why did he use my name, papa?"

On another occasion his elder brother told him that he could hit the moon with his "flipper." A. B. rushed to his papa and said, "L. couldn't hit the moon in a hundred years, could he papa?"

CHENEY, named after Hon. B. P. Cheney, one of the N. P. R. R. Directors, is a new town on the line of the Northern Pacific Railroad between Ainsworth and Spokane Falls—125 town lots were sold there within a month, at prices ranging from $25 00 to $125 00, the latter is the price paid for corner lots in the proposed business part of the town. There are six sawmills and one grist located within convenient hauling distance of the place. It is pleasantly situated in the heart of an agricultural section with an abundance of good water and excellent springs, some of which are mineral and will doubtless prove attractive to health seekers. The government and railroad lands in the vicinity are rapidly being settled by an intelligent class of immigration.

CENTERVILLE in Umatilla county contains eight merchandising establishments, one drug store, one hotel, two restaurants, one tin shop, one agricultural implement store, two millinery stores, two blacksmith shops, one saloon, two livery stables, and a steam flouring mill. It has two doctors but no lawyer. It contains quite a large number of dwelling houses and can boast of unlimited space to build up and expand. Its residents have strong hopes of securing the county seat in case of a division of the county, and if their hopes should be realized, look out for a large city where now stands the quiet town of Centerville.

TAXSAS city is situated on the north bank of Snake river about four miles above Grange city at the mouth of the Tucannon and about one mile above the head of Texas rapids. It is above all the different steamboat navigation of Snake river at low water between its mouth and Lewiston. It is where the O. R. & N. Co's, railroad leaves Snake for Union Flat. The site is a good one for safe building purposes, being above high water mark and comparatively level and of sufficient area upon which to build a respectable sized town. It has quite a bold shore and good landing and will be quite an important village before a great while.

THE Oregon Railway and Navigation Co., besides a large quantity of land near Portland, Cascades, Celilo, The Dalles, Umatilla, Wallula, Lewiston, Clatsop, Oregon City and Salem, and docks and warehouses at Portland, Astoria and other places, and shops, ways, offices, machinery, etc., owns 400 miles of telegraph line, 247 miles of railroad, 19 locomotives, 403 cars, 300 horses and mules, 30 steamboats, 12 barges, 2 scows, 8 wharf boats, and 7,726 tons of ocean steamships, represented by the City of Chester, Geo. W. Elder, Oregon and Columbia. The value of all this property runs pretty well up in the millions.

FROM Colfax to the different towns on the N. P. R. R., the distance is as follows: To Sprague, 42 miles; to Harrison, 45 miles; to Cheney, 42½ miles. to Ritzville, 51 miles; to Paha, 54 miles. The distances are calculated in a straight line, and, considering the way the roads run, it will be safe to add ten miles to each distance by wagon road.

TWO SIDES TO A QUESTION.—It's all very well to talk of sticking to your old friends, whether they be prosperous or the reverse. But what if they resemble Billy Scatcherd, for instance? You ask B. S. to dinner, to meet your respected father-in-law (the deacon), and General Jenkinson, and the member for Hornsey, and, worst of all, Sir Gorgius Midas and Mrs. Ponsonby de Tomkyns—not to mention the better halves of these important people—and dear old Billy, who hates humbug and scorns worldly success, and still pawns his watch to pay his rent, insists on reminding you across the table of the good old days when you used to do the same; and as a piquant set-off against your present splendor, tells that capital story of how you managed to go tick for a whole twelvemonth at a certain tripe and trotter shop, and then settled the bill with a hat and coat your grandmother lent you to go to your grandfather's funeral—and all this with the servants in the room, confound him! and that spiteful little Bohemian minx, Mrs. Scatcherd, gobbling away for the week before and the week to come, and revelling in your wife's black looks at you.

The only way to have a friend is to be one.

GENERAL ALBERT J. MYER.

We present herewith an engraving of Gen. Albert J. Myer, Chief of the Signal Service Bureau, who died on the 24th ult. at Buffalo. Gen. Myer was known all over the country, although very few knew his face. He was better known as "Old Probabilities," a familiar cognomen applied to the official representative of the Signal Bureau. This distinguished officer was born at Newburg, in the State of New York, in 1828. He graduated at Hobart College, at Geneva, in that State, in 1847. After applying himself to the study of medicine, he took the degree of M. D. at the University of Buffalo in 1851; and in 1854 he was appointed Assistant Surgeon in the United States army. He served in the medical department until the breaking out of the civil war, when he was appointed Chief Signal officer. He continued in the service until the close of the war, and received the brevet rank of Lieutenant-Colonel, Colonel and Brigadier-General of Volunteers. In 1866 Gen. Myer was placed at the head of the Signal Service of the regular Army, and in 1870 he was charged with the taking of meteorological observations at the military posts and other points in the country. It was largely owing to Gen. Myer's executive ability, scientific knowledge and capacity for mastering details that the Signal Service of the United States has succeeded in reaching its present condition of usefulness.

AFRICAN EXPLORERS KILLED.—Long before its exploration shall be achieved, Africa is likely to prove the graveyard of many of the most enterprising and brave men of the times. The London *Standard*, in commenting upon the sad news which had been received at Zanzibar of the murder of Capt. Carter and Mr. Cadenhead, remarks that it adds two more victims to the long list of those who have sacrificed their lives in the interest of African exploration. Hitherto disease and not violence has been the cause of the fatality which has overtaken so many of the explorers of the dark continent. From the facts which have reached us it would, however, appear that the gallant pioneers whose loss we have to deplore met their death at the hands of a chief named Wrambo. But, as the expedition which they commanded was, at the latest date, in the country of a robber king called Mercambo, not far from Lake Tanganyika, the name has, in all probability, been altered in telegraphing. Messrs. Carter and Cadenhead, though Englishmen, were employed under the auspices of the Belgian branch of the International Society for the exploration of Africa. The leading object of the expedition sent out under its auspices is not so much geographical discovery as the establishment of centers of civilizing influence and commerce at various points of the interior. The first of these stations was founded in August, 1879, by M. Cambier at Karema, on the eastern shore of Lake Tanganyika, 140 miles south of Ujiji. In December M. Cambier was joined by Messrs. Popelin and Carter with the Indian elephants, of which only one remained. Another reinforcement, constituting the fourth expedition, under Messrs. Burdo, Rogers and Cadenhead, was far on its way when last heard of, and was sanguine of soon communicating with Mr. Stanley. The latter, by the aid of steam launches, is endeavoring to ascend the Congo, which, amid so many perils, he descended three years ago. The introduction of elephants into African exploration was a great step in advance, and it was fondly believed that one of the chief difficulties in the path of travel had at last been overcome.

A COMPANY has been experimenting in Florida with palmetto for making paper with such gratifying success, that they will build 20 paper mills in various parts of the State.

THE NATIONAL PARK.—It appears that the natural wonders of the Yellowstone National park have made a strong impression upon Secretary Schurz, who recently, with Gen. Crook for a companion, made a horseback tour through the region. He has expressed great indignation at the depredations that are annually perpetrated there. In the park game is very abundant, and includes elk, deer, antelope, bears, and other animals; but the gamekeepers provided by the Government are insufficient to prevent the wholesale destruction of hunters, who are killing the animals merely for their skins. The entire unwholesome brood of curiosity hunters is also inflicting much injury by removing treasures which would have exceeding value to intelligent tourists. Around the geysers and other springs in the park there are many rare specimens of etalagmites and coralline depositions, which have required ages for their formation, all of which are liable to be injured or carried away by the vandals. The Secretary has expressed regret that proper action was not taken long ago for the preservation of the park, and it is his purpose to urge upon Congress the requisite legislation for the prevention of the depredations which are despoiling it of many of its beauties. We hope something efficient will be done at the earliest moment, for a further delay of five or ten years might work irreparable injury. Our forests are defaced and in course of destruction by the spoilers. Let us make an earnest effort to keep their ruthless hands off of the National park.

THE late Miss Adelaide Neilson, instead of having been born in Saragossa, Spain, in 1850, really was born in Leeds, England, March 3, 1849. Her real name was Elizabeth Ann Brown, and her mother, who is still living, is a gypsy.

THE LATE ALBERT J. MYER, OF THE SIGNAL SERVICE BUREAU.

RALPH WALDO EMERSON.—Our distinguished countryman contemplates another, and, in his belief, final, visit to England next year. The London correspondent of the Manchester *Guardian* says Mr. Emerson has been moved to do this chiefly by what he has heard of the declining health of Mr. Carlyle, between whom and himself there has been, ever since they first met, the deepest sympathy and affection. Mr. Emerson is also anxious to make the acquaintance of several distinguished Englishmen, conspicuous among whom is Cardinal Newman, whom he characterizes as "the most religious man in England." As a proof of the growing favor of Mr. Emerson's writings, it may be mentioned that a well-known publishing house meditates the issue of a cheap edition of them, about which it will negotiate with Mr. Emerson on the occasion of his visit to London.

IMPROVEMENT OF THE UPPER MISSOURI.—We learn from the Helena *Independent* of the 2d inst. that about 70 men are now employed by the Government in making improvements in the upper Missouri river, near Dauphan's Rapids, and it is informed that hereafter there will be little difficulty in navigating the stream until quite late in the fall. Boats have already transported to Benton about 9,000 tons of freight, and some 2,000 tons more will, it is hoped, be brought up the river before the season closes. This has proved so far an excellent season for freighting, and the river is two ft. higher than it was at the same time last year.

M. GAMBETTA speaks very fast in public. Most men pronounce but about 180 words a minute, but M. Gambetta talks at the rate of 235 a minute.

A LONG ISLAND TROUT FARM.

We are interested to learn from Eastern papers of the success of a fish-farming enterprise on Long Island, which has been developed by Geo. W. Thompson, who is an old Californian, and during the latter part of his stay in this State was a resident of Brooklyn township in Alameda county. What Mr. Thompson has done at the East may serve as a hint for similar enterprise to some of his old friends who still remain here, for California has many sites well adapted for such work. We shall take from the accounts at hand some interesting paragraphs:

Long Island is noted for its trout farms, and many of them have attained a just celebrity. Most of these trout preserves are situated near the center of the island or at its western end, the only one on the east end being the Noyac trout farm. This farm is owned by Mr. Geo. W. Thompson, who came to Noyac from San Francisco about six years ago. Before Mr. Thompson's purchase of the tract of land now comprising the trout farm it was a perfect wilderness of underbrush and trees. There are now 40 springs upon the place from which the various ponds are supplied, but when the present proprietor entered upon the land a small brook, leading into a pond that supplied the motive power to an old grist mill, was the only water course.

PREPARING THE PONDS.

The first thing the new proprietor set about doing was to clear the land of underbrush, thin out the trees and convert the brook into a series of ponds suitable for trout propagation. The ponds were dug by hand in such a manner as to give a pleasing variety of outlines, and graded in such a way as to allow the stream an easy fall from one reservoir to the other. There are 30 of these ponds altogether, ranging in size from 15 to 20 ft. in length to an extent of three or four acres. They are separated by wide screens in order to keep the different growths of trout apart. The water takes its course through the most sequestered nooks upon the place, over rocks and pebbly bottoms, and in the shadow of trees and bushes; thus making the preserve as much like the natural haunts of the fish as possible.

In the autumn when the leaves are falling they would soon cover up and sully the water were it not for an ingenious contrivance which Mr. Thompson invented to remedy such a state of affairs. From one pond to the other there is a slight fall of, perhaps, a foot or more, and the flow of the water causes the leaves to cluster about the dividing screens. Where the leaves gather thickest a large wire fly-wheel is placed, turned by the stream itself, which sucks in all the light debris and throws it up on the bank on each side. In this way a perfectly clear water course is always insured. To obtain a larger supply of water for hatching, nursery and other purposes, the 40 springs, previously mentioned, were dug, and thus in the driest times of summer there is no fear of dearth of water.

After clearing his land and making the necessary reservoirs for his fish, Mr. Thompson commenced raising trout for market. It requires great familiarity with the habits of trout to be able to tell exactly at what time the female trout is ready to spawn, and it requires equal skill and judgment to treat the fish in such a way that they will experience no ill effects after the spawn is taken from them.

GATHERING THE SPAWN.

When the spawning season arrives the experienced eye can easily detect when the eggs of the female trout have reached maturity. The fish are caught in a light net and put into tubs of clear water. Pans purposely made for the reception of eggs are then placed in readiness, and the female trout are relieved of the spawn in the following manner: The fish is held near the head with the left hand, and the right is clasped around the body just above the abdomen. Then with a gentle downward movement of the right hand the eggs are forced from the trout into the pan. The male trout is then treated in the same manner, contributing a milky fluid, which is dropped into the same pan with the spawn and causes fecundation. The fish, both male and female, are much exhausted after this operation and unless placed where they cannot be molested they are apt to become sickly and die. They are usually put in a separate pond until fully recovered, when they are allowed to mingle with other fish of their own size.

HATCHING THE EGGS.

The hatching trough is a long narrow box divided into compartments, into which the eggs are placed according to their different stages of maturity. The sides of the trough are charred to prevent the growth of fungi, as any impurity is deadly to the life germ of the eggs. Water from a large reservoir is kept continually running through the hatching trough, and so great is the need of keeping it clear of all impurity or any kind of sediment that before entering the hatching boxes it is forced through seven filters of finest flannel. The time of incubation varies from a few days to much longer terms, according to the character of the season and the various stages of maturity of the eggs.

When the fish are hatched they are minute creatures with a curious little transparent sac attached to the stomach. The sac disappears as the fish increases in size, some theorists attributing their disappearance to the fact that they furnish sustenance to the young fish, and are gradually absorbed until they are capable of feeding themselves. When the young trout reach this stage they are taken from the hatching trough and placed in what are called nurseries, which are simply a series of large wooden compartments with latticed covers to protect the young trout from their enemies of the air and field. These compartments are separated by wire screens, and through them all flows a shallow stream from the reservoir up the brook. The nurseries are constantly filled with young trout, the various sizes being kept in different compartments. This is a very necessary precaution, for trout are cannibals, and unless great care is taken to keep the larger fish from the smaller the latter would soon be destroyed.

As the trout grow they are removed to larger nurseries, where they are kept until they attain a size of two and a half or three inches, when they are again sorted and placed in the larger ponds.

SORTING AND FEEDING THE TROUT.

The process of sorting the trout is, it may be said, of almost continual duration. As soon as a trout outgrows his companions he is caught in a net and placed in more suitable company; for if left among the smaller and weaker fish, he would soon display his cannibalistic propensities. This, of course, applies only to the younger fish, for a three-pound trout would probably find it discouraging work to try and dispatch a two pound brother. Brook trout rarely attain a weight over three pounds, though Mr. Thompson has some beautiful specimens which will weigh nearly four pounds; but they are exceptional cases.

The trout are fed at stated times every day, the food in summer consisting of minnows and other small fish caught in the neighboring coves and bays, and in winter, of beef chopped fine in a machine made for the especial purpose of preparing trout food. The price the trout fetch in the New York markets varies from $1 to $1.50 per pound according to the season.

A WRITER in the London *Lancet* remarks that at the Middlesex hospital, female patients who have suffered many years from sick headache, evidently of a heriditary character, have been greatly benefited, if not cured, by the administration of ten minim doses of tincture of Indian hemp, three times a day, between the attacks.

THE WHEAT CROP OF 1880.

For the purpose of informing our readers of the current estimates of the wheat crop in this country and Europe we quote from a circular issued September 1st by Henry Clews & Co., of New York, who are bankers and interested in wheat only in its possible effects upon the securities in which they deal. We have no means of knowing whether the estimates are correct or not, except in the warranty of the firm publishing them. We quote:

A fair balancing of estimates warrants the conclusion that the wheat crop of the whole country will afford an increase of 35 to 40 million bushels over that of 1879. What the crop of other countries may be is best indicated by the estimates presented at the great Vienna International fair, whose annual reports are accepted as authority the world over, and which have just come into our hands. The following are the estimates of that body of the wheat crop of the several countries; 100 being regarded as representing an average crop, and the approximations to that standard being expressed by the percentages specified.

	Per Cent.		Per Cent.
Germany,		Holland	100
Prussia	100	Great Britain & Ireland.	90
Saxony	90	Russia,	
Bavaria	125	Esthonia	75
Franconia and Suabia	120	Courland	80
Southern Bavaria	115	Poland	105
Palatinate	100	Podolia	120
Baden	100	Central Government	60
Wurtemburg	115	Southern "	100
Mecklenberg	95	Bessarabia	110
Denmark	100	Roumania	125
Sweden and Norway	100	Servia	100
Italy, Upper	130	Hungary	97½
" Central	100	C sleitha	106
" Southern	115	Austro-Hungary	97¾
France	90	Egypt	100
Belgium	105		

The estimates for Russia are very low, and indicate a complete failure of both the wheat and rye crops. But the fair's estimates for last year's crop were even lower than these; and yet Russia has made a considerable export of wheat within the last 12 months. These returns, taken as a whole, must be regarded as implying an average crop for the whole of Europe; and an average crop in Europe must cause the consumptive demand upon the United States to fall very materially below that of the past year. What England and France may take from us to fill up their depleted stocks and what on speculation, to be carried over to next year's supply, are matters of very uncertain calculation. The quantity to be exported for that purpose, however, is likely to depend very much upon the price of wheat being temptingly low; and the question is a very pertinent one, whether in the event of low prices for wheat, the railroads would not have to make liberal concessions on freight charges in order to draw it out of farmers' hands.

SALICYLIC ACID AS A PRESERVATIVE.—A correspondent of the *Journal of Microscopy* says salicylic acid has been strongly recommended in this journal as a preservative, and I have had very good success with it in mounting vegetable preparations of all kinds. One difficulty, however, is that it dissolves very sparingly in water, and alcohol produces changes which are frequently undesirable. It is well known that salicylic acid dissolves freely in a solution of borax, and it is also familiar to most persons that borax itself is quite efficient as a preservative. It, therefore, occurred to me to combine these two, and I have found that two parts of salicylic acid and one part of borax dissolved completely in half an ounce of glycerine, and that this solution when mixed with three parts of water, forms a most excellent preservative fluid for coarse organisms. More delicate preparations should be mounted in the above solution diluted with five parts of water. Preparations mounted with this solution are very durable.

OUTLANDISH DRESS IN ENGLAND.

It is not surprising that a large crowd should have collected, that ladies were shocked and policemen scandalized, by the appearance lately in the Strand near the Vaudeville theater, at midnight, of a young man dressed in a suit of bed-chintz of various colors. A high-crowned hat completed the costume of this fantastic individual, whose eye-brows were painted black, while the lower part of the face was daubed with red, and who carried an umbrella in one hand and a rifle in the other, in addition to a sword and pistol in his waist belt. The young man was arrested, and when charged the following morning at Bow street with "disorderly conduct," his defence was that he had made a bet of five pounds with a friend, seemingly as brainless as himself, that he would walk from the Criterion to the Gaiety theater in any costume which his friend might prescribe without being molested by the police. Mr. Vaughan sternly reprehended the inopportune masquerader, and ordered him to find one surety in £20 for his good behavior for six months.

Sociologically, the offense of this silly youth was a dual one. He had not only caused an obstruction in a public thoroughfare, but he had committed that which, in England, is deemed a very flagitious offense. He had appeared in an unaccustomed garb. On the other hand, he might, with perfect immunity, at high noon as well as at midnight, in Regent street or in the Strand, at an aristocratic garden party or in the presence of royalty itself, appear in a costume somewhat like the following: A wooden cap with an eagle's feather and silver aigrette in the form of a thistle; a boy's jacket ornamented with many buttons; a short petticoat, fantastically chequered in "various colors;" bare legs; plaid worsted hose with a knife and fork at one garter and a spoon at the other; and hanging before him at his waist a goatskin pouch decorated with tassels or tails of black horse-hair. At his side he might have worn a broadsword, and in his belt a dagger and pistol. That is the Highland dress. When it was assumed by George IV, at Edinburgh, in 1820, the "garb of old gaul" excited much merriment, which rose to uproarious hilarity when Sir William Curtis, the banker, who was as fat and as vain as the King himself, appeared in similarly preposterous attire. Nobody laughs at the Highland dress nowadays. It is worn indiscriminately by officers in the Highland regiments, by gillies, by affluent English tradesmen who have hired shootings or fishings in Scotland, and by the children of conceited rich people. It is an uncouth and barbarous garb, but we have grown accustomed to it.—*Pall Mall Gazette.*

A NEEDED PROTECTION.—It has just come to light that several years ago the Iowa Legislature passed a bill incorporating the Iowa Ministers' Mutual Protective Association, and providing that what person soever, without regard to age, sex, rank, color or previous condition of servitude, including Indians not taxed, should present any clergyman, of whatever denomination, Catholic or Protestant, be he settled as pastor of a church or employed in any capacity by any religious, educational, publishing or missionary institution or association, or merely lying around loose looking for a church, or bushwhacking through the country as a star evangelist, a so-called pair of embroidered slippers, whereof one slipper should be a number three, C last, embroidered in green and yellow and with a high, slim heel, and the other, its alleged mate, should be a number fourteen, D last, embroidered in red and blue, with no heel whatever, should be deemed guilty of an assault with intent to commit bodily injury, and should be punished by fine or imprisonment, or both, one-half the fine to go to the complainant.—*N. Y. Mail.*

AN ABSURDITY.—To purchase wood by measure. Its heat-producing qualities are in proportion to its weight, if seasoned. When in Paris, our wood was furnished by the pound.

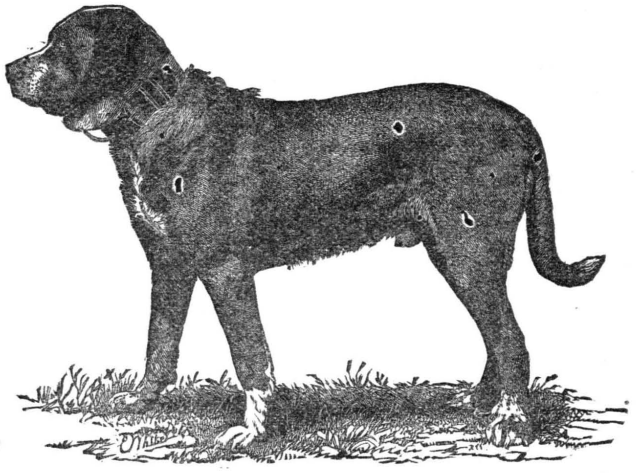
ST. BERNARD DOGS.

We present herewith an engraving of the St. Bernard dog. These famous animals have been introduced into this country, and bred with as much care as other thoroughbred stock, and with such success that their values are not unlike those of thoroughbred cattle.

The dog Don, shown in the engraving, is a fine specimen of a noble race. He is four years old. He possesses the characteristic white marking of the breed, well-defined—the white muzzle and poll streak, the cowl or monk's hood, the neck-band, white breast-piece, with white feet and tip of tail. He has also double dew-claws, and weighs 165 lbs. or over when in good flesh. He won the first prize of the Westminster Kennel Club, at New York, in 1879; the special at Philadelphia, and first and special at Boston, the same year.

A REMARKABLE CASE.—Scarcely less astonishing than Dr. Tanner's recent feat of fasting, remarks the N. Y. *Evening Mail*, is the condition of a young lady, daughter of the Mayor of Grambke, a village near Bremen, who is said to have been fast asleep ever since the second week in January with the exception of a few hours of semi-wakefulness at intervals of from six to eight weeks. An interesting account of her extraordinary state is published in the Hanover *Courier*. It appears that she lies, plunged in a profound slumber and entirely unconscious of all that goes on around her, night and day, reclining on her left side, warmly covered up and with a light gauze spread over her head. Nourishment, chiefly in a liquid form, is daily administered to her, which she swallows without awaking for a second. She is a pretty, slender girl, of a pallid complexion, but she does not lose in weight during her trances of from forty to sixty days, and when awake exhibits a cheerful disposition and an eager desire to perform such small household tasks as her strength enables her to fulfil. Her father is a well-to-do man, who has consulted several eminent medical men in the hope of discovering some remedy for his daughter's abnormal condition, which entails serious inconvenience and constant anxiety upon the other members of his family, but all efforts hitherto made to keep the unlucky girl awake have resulted in total failure.

HIGHT OF THE AURORA BOREALIS.—Drs. De La Rue and Muller determine the hight at which the aurora borealis has its greatest brilliancy at about 38 miles; at a hight of 81 miles the light is pale and faint, and at 124 miles above the earth's surface no electric discharge can take place to produce the phenomenon.



ST. BERNARD DOG, "DON," OF THE CRANMOOR KENNEL, NEW JERSEY.

THE DIVER'S FUN WITH THE FISHES.

Our young readers must ask their parents to explain to them how men go down to the bottom of the sea in diving-bells or with divers' costume and stay there for hours without coming to the surface. When our young friends understand this they will appreciate the following which we find in an Eastern newspaper: Fishes are as playful as birds, and some species may be tamed as readily as any other pets. Divers in diving-bells have had some curious experiences with them. A prolonged stay in one place gave a diver an opportunity to test this intelligence further, and to observe the trustful familiarity of this variety of marine life. He was continually surrounded at his work by a school of gropers, averaging a ft. in length. An accident having identified one of them, he noticed that it was a daily visitor.

After the first curiosity, the gropers apparently settled into the belief that the novel monster was harmless and clumsy, but useful in assisting them to their food. The species feed on crustacea and marine worms, which shelter under rocks, mosses and sunken objects at the sea bottom.

In raising anything out of the ooze a dozen of these fish would thrust their heads into the hollow for their food before the diver's hand was removed. They would follow him about, eyeing his motions, dashing in advance or around in sport, and evidently with a liking for their new-found friend. Pleased with such an unexpected familiarity, the man would bring them food and feed them from his hand as one feeds a flock of chickens. The resemblance in their familiarity and some of their ways to poultry was, in fact, very striking. As a little chick will sometimes seize a large crumb and scurry off, followed by the flock, so a fish would sometimes snatch a morsel and fly, followed by the school. If he dropped it or stopped to enjoy his tidbit, his mates would be upon him.

Sometimes two would get the same morsel and there would be a trial of strength, accompanied with much flash and glitter and shining scales. But no matter how called off, their interest and curiosity remained with the diver. They would return, pushing their noses about him caressingly in appearance if not intent, and bob into the treasures of worm and shell-fish his labor exposed.

LADIES who do their own work will find that, in addition to a long apron a pair of calico sleeves with a rubber cord in the top is a dispenser of happiness. One can slip them on over cuffs and nice dress sleeves, get tea and even wash the tea dishes without injuring the dress.

INTERESTING FACTS ABOUT ICELAND.

Concerning Iceland, Mr. Lock stated that the island, so far from being small, as it is erroneously called, is considerably larger than Ireland or Ceylon. Its situation is such that its whole northern coast is shut in nearly every year by the descent of masses of ice from the north. The southern and western shores are affected by ice in very exceptional instances only. The country is essentially volcanic and mountainous; but Hecla, which monopolizes the geographical knowledge of most students on the subject, does not possess a single characteristic to place it above its fellows. The whole central plateau is a wild waste of lava and volcanic sand, and the only habitable parts of the island are a narrow fringe of coast-land and a few of the larger river valleys. The great ridge of ice-clad hills, stretching across the island, acts as a refrigerator to the moisture-laden winds from the southwest, and produces two distinct climates: the northern, generally dry; and the southern, generally wet, and more temperate than the other. The fact that colonists from Great Britain participated in the settlement of Iceland more than a thousand years ago is attested by the identity of many words that are used by the people with British words. Ponies are the chief animal product of the Island. From them the stocks of the "Black Country" of England are recruited. The sheep furnish a fine mutton, and a wool which is made up into excellent fabrics at home, or is exported. Profitable trades are driven in skins, catgut, fox-fur and eider-down; the cod-fisheries are very important, and considerable trade is carried on in cod-liver oil and shark-oil. The salmon-fishery has been shamefully abused by the excessive employment of barbarous methods of taking the fish. It, however, is the one great attraction the island offers to sportsmen; and more profit might be gained, directly and indirectly, by letting out the streams, as in Norway, to English fly-fishers, than by contracting with fish-curers. The island was at one time well wooded, and supplied itself largely, if not entirely, with cereals, but the climate has deteriorated and the soil become sterile in consequence of the cutting away of the trees, and every grain of corn is now imported from Denmark. The principal mineral product is sulphur, which is deposited in a very finely divided state around the volcanic vents by the vapors issuing through them. It is the custom to describe the sulphur mines of Sicily and the sulphur mines of Iceland as somewhat similar, but for all practical considerations they are as distinct as a coal-seam and a forest. The Sicilian mines consist of deposits formed in past geological ages, now lying at great depths, and utterly devoid of reproductive power; the Icelandic beds are the work of to-day, lie on the very surface of the ground, and live and grow with unabated energy, replacing the deposit as fast as it is removed. The area comprised in the Icelandic sulphur districts collectively amounts to, perhaps, a dozen square miles. The sulphur forms a layer of varying thickness, covered by an earthy crust and underlaid by clays containing sulphur mixed with various acids and salts, and is invariably wet, in consequence of the steam condensed within it. The crystals are almost absolutely pure, but impurities are mechanically mixed with them. Other mineral products are gold and silver, which are found in minute quantities, Iceland-spar, pure specimens of which are valued for optical instruments and cabinets, coarse chalcedonies and zeolites, lignite, basalt and volcanic products. The manufacturing industry of the country is confined to woolen fabrics, socks and stockings, gloves and a home-spun cloth, which are excellent.—*Mr. C. G. W. Lock in Popular Science Monthly.*

FLORIDA fruit growers are beginning to cultivate the lemon with care, and with such good results that it is believed the State will soon furnish almost as many lemons to the trade as she now does oranges.

PERTINENT FACTS ABOUT EATING.

In a recent number of the London *Standard* under the query, "do we eat too much?" the writer gives many interesting facts. He says, for instance that the amount of nourishment which a person needs greatly depends on his constitution, state of health, habits and work. A sedentary man requires less than one whose duties demand the exercise of his muscles, and a brain-worker needs more than an idler. But unquestionably the majority of us take more than we need. Indeed, food and work are distributed most unequally. The man of leisure is also the man of means, and accordingly, fares sumptuously every day; while the laborer toils for eight hours, and finds it difficult to get enough to repair the waste of his tissues. Yet a Chinaman or a Bengalee will toil under a tropical sun, and find a few pice worth of rice or jowrah sufficient to sustain his strength. A Frenchman will not eat half what an Englishman engaged in the same work will demand, and a Spanish laborer, content in ordinary times with a watermelon and a bit of black bread, will toil in the vineyards and grow fat on a dietary of onion porridge and grapes. It is true that Mr. Brassey, when building the Continental railways, found that one English navvy was worth a couple of spare-fed foreigners. But, on the other hand, the British Columbian and Californian gold-diggers, than whom a more magnificent set of athlets does not exist, live in the remote mountains of the Far West mainly on beans flavored with a few cubes of pork. But they also obtain the best of water and the purest of air, and their out-door life and active exercise enable them to digest every ounce of their frugal fare. The English soldiers, though better fed than those of any army except the American, do not get one-half the amount of solid nutriment which the idlest of club-loungers considers indespensable for his sustenance. An athlete in training is allowed even less food; yet he prospers on the limited fare, and prolongs his life by the regimen by which he has been subjected. King Victor Emmanuel was a monarch of the most robust physique; yet he only ate one meal per day, and it is manifestly absurd for any man to require three more or less weighty meals, and an afternoon cup of tea, to support the exertion of walking to the club, riding an hour in the park, writing a note or two, and dancing a couple of miles around a ball-room. The ancients had their "amethustoi," or "sober stones," by which they regulated their indulgence at table. The moderns have not even this. But they have their gout and their livers to warn them, when it is too late, that nature has been overtasked.

IMPROVED LAMPS.—Mr. Sugg, the well-known gas engineer, has lately devised a form of compound Argand burner for street and out-door uses. It is now in use in London on several of the prominent thoroughfares, and is highly commended. Several of these gas lamps give an illumination of 200 candle-power each. The same inventor has likewise devised a very ingenious self-ventilating gas lamp for the special use of libraries. It is provided with a chimney in the form of a metallic tube, which delivers the products of combustion out at the roof, or to some other convenient place outside of the library room. This flue is surrounded by a second larger cylinder communicating with the base of the lamp, which is closed, and through which the lamp receives its air supply also from the outside of the room. The lamp, therefore, neither impoverishes nor vitiates the air of the room. It was designed to meet the objection that the sulphurous gases evolved in the combustion of coal gas have a deleterious action on the leather of the book bindings.

MERCURY AND LEAD.—If a piece of lead wire be hung perpendicularly over a vessel of mercury, the lower end immersed, the mercury will gradually permeate and ascend the wire to a hight of three ft. in a few days.

THE FLAVOR OF MEAT.

M. Monclar, a noted agriculturist in France, has suggested a singular plan for varying the flavor of meat. He imagines that by feeding cattle, sheep, pigs and poultry in a particular way, or rather by flavoring their food in various ways, their flesh may be rendered much more agreeable to the palate than it often is; and there can be no doubt that he is substantially right. Thus, for instance, it is well known that poultry which have been fattened upon food containing a slight admixture of chopped truffles are far better eating than those chickens which have been stuffed or larded with truffles after they are killed. It is only natural that such should be the case, for the flavor of the truffle that is consumed by the chicken permeates the whole system, which it cannot do when simply placed in the carcass. M. Monclar instances cases in which hares killed in a wormwood field, larks shot in a cabbage field, and eggs laid by hens which had eaten diseased silkworms, had such a nauseous taste that no one could touch them; while upon the other hand some ducks and fieldfares which had fed upon sprigs of juniper had a delicious flavor. He has made several experiments—among others, three upon tame rabbits, which he fed with the waste of aniseseed, with barley and bran containing a slight flavoring of juniper, and with barley and bran containing a little essence of thyme. In each case he found that the flesh of these animals was far better eating than that of rabbits fattened in the ordinary way, and yet that there was no trace of aniseseed or juniper in the taste. His conclusion is that cattle, sheep and pigs might be fed in the same way, and that by varying the flavoring matter the beef, mutton and pork might be made to have several different tastes.—*Caterer.*

TO MAKE A STRONG PASTE.—To make a paste for fastening bills in a file book, or for any purpose where a very strong paste is desired, the following recipe is recommended: Rice or starch paste is the best. Four parts (by weight) of fine glue are allowed to soften in 15 parts of cold water, and then moderately heated until the solution becomes quite clear; 65 parts of boiling water are now added, with constant stirring. In another vessel 30 parts of starch paste are stirred up with 20 parts of cold water, so that a thin milky fluid is obtained without lumps. Into this the boiling glue solution is gradually stirred, and the whole kept at a boiling temperature for a short time. After cooling a few drops of carbolic acid are added to the paste. This paste is exceedingly adhesive, and may be used for leather as well as for paper and cardboard. It should be preserved in corked bottles to prevent evaporation, and in this way will keep good for years.

A DIFFICULT PIECE OF CASTING.—The Ames Co., Chicopee, Mass., have recently finished the most difficult piece of iron casting they have ever attempted. This is an iron tub for a rag engine, and was ordered by the Seymour Paper Co. of Windsor Locks, Conn. The job took eight and a half tons of metal, and the work preparing the mold occupied three weeks. The difficulty of the work consisted in the tub being so large and the sides and bottom so thin. Iron tubs for paper mills have been made before, but they have been cast in sections. They will be much better if they can be made in one piece, and when once in place will last as long as the mill does.

TO CUT SHEET BRASS.—Moderately thick plates may be cut chemically by drawing a line or mark with a solution of mercury in nitric acid. The acid attacks the copper, while mercury amalgamates with the zinc; this seems to be the explanation; at any rate, the brass becomes as brittle as glass on the place where the line is drawn, and is easily broken off.

PACKING FRUIT FOR EXPORT.

There was an essay lately written for the Royal Agricultural Society of South Australia, by Mr. Amos Howard, on packing fruit for export, from which we take the following paragraphs:

Packing the Grape.—I consider the packing material a very important consideration. The materials I have had experience of are sawdust, seaweed, bran, fine meadow hay, and fine wood-shavings. These were all partial failures, with the exception of the fine wood shavings; but of this last I cannot speak too highly. They combine these requisites—lightness, cleanliness, cheapness and elasticity. A good proportion of size for the cases is, length 2 ft., width 14 inches, and depth 11 inches—this size would contain about 50 lbs. of grapes. These boxes should be packed in the vineyard, the bunches being then but once handled. Sheets of common white paper are provided of two sizes, which a child can twist up into conical-shaped bags. They should be large enough to take in the bunch completely. The box is prepared for the reception of the fruits by placing a layer of the fine shavings on the bottom; the bunches are cut from the vine, held only by the stalk, and placed at once in the paper bags, being then laid carefully on the layer of shavings. On no account should the mouth of the bags be closed, as the sweating of the bunches would injure the berries. On the other hand, if the mouth of the bags is not doubled over, the shavings will absorb the moisture, and the fruit will remain uninjured. I have proved this from experience. As soon as the first layer of grapes is complete, another of fine shavings is placed on them, and these slightly pressed down so as not to bruise the berries, for this purpose a light board cut to fit inside the case with a handle to lower it gently, will be found to press the packing, more evenly than the hand—the packer's judgment will teach what pressure is necessary to pack the fruit securely. These layers should be continued until the case is filled, and in finishing off the lid should press slightly on the top layer of shavings.

Packing the Plum.—The method of packing these is more simple. In their case the fruit is placed in single layers between each layer of the fine shavings, the same care is necessary in gathering and at once putting them in the boxes, selecting fruits without spots. The plums are packed without paper; as they lay firmer without. (I would here remark, that firm packing is of the utmost importance, as the slightest looseness is ruin to the fruit.) As each layer of shavings is placed on the fruit, the light board before mentioned should be used for pressing them evenly down. The layers then are continued until the case is filled, the lid slightly pressing down the top shavings. The firm-fleshed varieties will keep well for seven and eight weeks, and damsons even longer.

Packing the Apple.—These should be packed in the same way as the plums, taking the extra care only of having a little shavings between each fruit. Cases of the size recommended should hold about 150 apples, spotless fruit should be selected and packed straight from the tree.

THE FALL WOOL TRADE.

As the fall clip is now pressing for sale, the aspect of the Eastern markets is a matter of much interest. Walter Brown & Co., of Boston, in their latest circular, give the following outline of the trade and matters affecting it: The wool market for August opened with a moderate inquiry and strong prices; the purchases, however, by manufacturers were mostly confined to their immediate requirements, as they have had but little inducement from the sales of goods to encourage any anticipation of future wants by heavy investments in the raw material. As the month progressed, consumers held back from buying as much as possible, thus reducing the volume of sales, and the last week shows a smaller amount of transactions than for any similar period during the previous 60 days. The only active demand has been for delaine and combing selections, which have sold freely at steady values; all other wools have been in very limited request, and in some cases concessions have been made to effect sales. The weakest wools on the list are the low medium and coarse grades from Territories and Western States, which have been much neglected by consumers, and exhibit a great contrast to the active movement of last season.

The indifference shown by manufacturers to the wools offering on the market would indicate a larger stock in their hands than has been generally supposed by dealers in the staple, and a belief that they can safely postpone purchases until actual scarcity of stock makes it necessary for them to buy. On the other hand, a large number of the farmers in the best wool-growing districts of the country are holding their wools with confidence, feeling that they will be needed at their own figures before another clip is available. What the result will be is to-day quite as much of an enigma as it was two months ago; one fact, however, is quite evident, manufacturers, so long as the trade for their goods continues in its present unsatisfactory state, will not buy wool faster than they need it, and the question arises will this "hand to mouth" demand be sufficient to relieve the market of the large supplies of wool that have accumulated during the past few weeks without a further concession in prices.

The general prosperity of the country in its cereal interests, as indicating a good healthy fall trade in all branches, is a strong argument in favor of a renewed activity in the wool business, and of which the advent is only a question of time; the prices of the staple in foreign markets are to-day too high to admit of additional importations in competition, and even should a further decline take place in the values of domestic wools, it will probably be only temporary.

The London auction sales began on the 17th ultimo, with a very large offering of colonial wools; the attendance was good, but the bidding lacked spirit, and the prices opened about 5% below the closing rates of the previous series. As the sales have progressed, they have suffered no further decline, while at times some animation has been evident in the competition. The assortment, though large, comprises but little wool suitable for the American market, even were prices low enough to attract buyers from this country; as it is, there is no probability that our stocks will be at all increased by any purchases at this offering.

The Future Lumber Supply.—What are the lumbermen of the Pacific coast doing to replace the forests they destroy? This is a serious matter, and it ought to be looked squarely in the face. It is attracting the attention of ship builders and other lumber interests on the Atlantic side, and it should not be neglected on the Pacific where the lumber industry is assuming vast proportions. In relation to this business, the *American Ship* thinks that the Lumbermen's Association should consider the matter and endeavor, through the action of its members, to secure protection for the timber lands so that the trees shall be thinned out rather than destroyed, and given an opportunity to make fresh growths from year to year. That journal says: Some legislation may be needed in the public interest for the protection of the forests against the cupidity of men, anxious only about present profits, and the Lumbermen's Association ought to be able to suggest measures that will be fair to all interests. There is scarcely a nation in Europe that does not to-day regret its neglect to provide in time for forest culture, though nearly all now have laws on the subject. The existing laws in this country are really applicable only in the far Western States, where there are public lands which might be worth obtaining for forest culture. In the States now most in need of growing forests, there is very little tree planting, but the waste goes on at a great rate.

TO DISTINGUISH DYES IN COLORED GOODS.

It is often necessary to know with what coloring matters a pattern has been dyed. In some cases an experienced dyer can soon ascertain, almost at a glance, or by simple methods, which dyestuff has been employed; but with many colors this is sometimes impossible. Especially is this the case with blue dyed fabrics, in which it is not easy to say whether a pattern has been dyed with vat indigo alone, or has been topped with cheaper stuff.

The detection can be made by a chemical analysis, the method consisting in destroying one of the coloring matters by some reagent, and thus prove its existence by the use of the destroying medium. To ascertain which mordant has been used, it is only necessary to burn a certain quantity of the fabric, and to find out by chemical analysis which oxide was present on the fabric. These methods are, however, only of use to chemists; but the following is a simple method that may be employed by anybody to determine the coloring matter. To begin with blue dyed fabrics. *Vat blue*, in the first place, is neither affected by alkalies nor acids (with the exception of nitric acid). Only chlorine and chlorine compounds react on vat blue.

A blue dyed with *sulphate*, or *extract*, or *carmine of indigo*, is readily abstracted by boiling water, and even more so by caustic alkalies.

Prussian blue is easily recognized by using alkalies which destroy it, while chlorine and acids have no effect upon it. However, the alkaline chlorine compounds of commerce (bleaching powder, etc.) react upon it.

Goods dyed with *logwood* give, with acids, a coloration more or less yellowish. In case there is another color associated with logwood, the latter may be extracted with a large quantity of acid. The fabric is then well washed, and the remaining color examined.

The red colors are more difficult to determine; but these colors have not the same importance as the blues.

Colors dyed with *cochineal* and *Brazil wood* (which, however, every dyer can easily distinguish) become gooseberry red when treated with muriatic acid. If it is washed, and then passed through milk of lime, a pretty loose violet is obtained. *Madder red*, treated exactly in the same way, and after the milk of lime bath boiled with soap, acquires a more intense color.

Cochineal red and *Brazil wood red* can be easily distinguished by means of oxalic acid, cochineal red becoming brighter, while the other is more or less destroyed.

Black, which is generally dyed by two methods, either with iron or chrome, when treated with chlorine, is destroyed if dyed with iron; but, if a chrome black, resists to a certain extent, only becoming chestnut brown, even with strong treatment.

To distinguish other colors there are many methods, which are, however, too complicated to be mentioned here. Aniline colors require greater chemical knowledge to distinguish them from each other.

How Ships are Disinfcteed.—The following system of disinfection is recommended by the Austrian government for vessels that had cases of small-pox on board: Sulphur to the extent of 12 grains per cubic meter of space to be disinfected is to be burned in an earthenware basin, placed in the center of some sand to prevent all risk of fire. All the linen, clothes, etc., are to be hung across the cabin, which is to be hermetically closed for three hours, and afterward exposed to the strongest possible drafts of air for 12 hours. Then the walls, floor, ceiling, etc., are to be washed with one kilogramme of lime or one-half a kilogramme of chloride of zinc to every hundred liters of water.

To Relieve Casks from Mustiness.—Burn a little sulphur in the empty casks, bung, and let them stand for a day.

THE MOON'S FORCE.

After getting somewhat accustomed to the greatness and strength of a bar of solid steel 16½ ft. square, imagine one which is one mile square, 5,280 ft. wide and as many thick. If it lay on the ground near the Catskill mountains, its upper surface would overtop their highest summit by more than 1,000 ft. It would be equal to 102,400 such monster bars as the last. Its lifting power would be nearly 240,869,000,000 tons. The mind is utterly unable to grasp such figures. The whole globe contains 1,200,000,000 inhabitants. If each man, woman and child could pull with a force of 100 lbs.—a large estimate—to move such a weight would require the united efforts of the inhabitants of 2,000 such worlds as this.

As I shall have frequent occasion to speak of the load which such a bar could sustain, I shall, for convenience, call it in round numbers 240,000,000,000 tons, neglecting the other figures, because the number is so inconceivably great that taking from it a billion or so of tons will alter the result less than one-half of 1%. This bar is to be the unit of measure, which I shall for the present employ, and with its help I shall attempt to give some idea of the influence of the sun in holding the system together, and of the attraction exerted by the planets upon our earth, and by the earth upon the moon; and, lastly, by the fixed stars upon the sun and upon each other.

We begin with the moon because it is nearest to us, and, with the exception of the sun, is to us the most important of all the heavenly bodies.

If a half dozen persons were asked how large the moon appears, they would give as many different replies: "The size of a cart wheel;" "Twelve inches across;" "The size of a dining plate;" "As big as a man's head;" etc. Probably no one would mention a smaller measure, yet a cherry held at arm's length much more than covers its disk. It is difficult to believe that so small a body exerts any considerable influence on the earth which seems so immensely larger. It is easy to admit that the earth holds the moon in its orbit; but that to do this, to bend its course into a nearly circular orbit, requires any great outlay of force, is not so clear. Our credulity would be taxed were we asked to believe that the moon in its efforts to move in a straight line would break away, although held by a bar of steel one ft. square, for that means a force able to lift nearly 9,000 tons. An astronomer would grant it, making first a mental calculation to see if he was justified in doing so; but even he would hesitate, and perhaps would deny that it was possible the moon could pull asunder one of those great unit bars one mile square, and equal to more than 27,000,000 bars each one ft. square.

But he would have no hesitation in saying "Impossible!" if told that, rather than change its course from a straight line to its present curve, our willful little satellite would snap like pack-thread not one, nor two, nor three of those unit bars, but the united strength of 10,000—or, in other words, one gigantic bar whose section is 100 miles square. Yet more than eight such bars, or more precisely, 87,500 unit bars, would but barely deflect the moon into its present path*.

* The non-astronomical reader may, perhaps, need to be reminded that the moon does not move easily and naturally in a circle—or ellipse—but that its path, if left to itself, would be a straight line—a tangent to its orbit. Consequently, the moon requires to be forced into a curve.

—*Popular Science Monthly.*

AN ADJUSTABLE LENS.—Dr. Cusco, of Paris, has invented a lens of variable focus, in which the pressure of transparent liquld is made to alter the curvature of the flat faces of a cylindrical cell of brass closed with thin glass discs; the pressure can be regulated by a manometer gauge to any required degree within the limits of working.

FILES AND FILING.—The following information may be found useful to some of our readers. A new file should always be used with light pressure on the work until the needle-like points of the teeth are worn away; after this a much heavier pressure may be used with much less danger of breaking off the teeth at their base. Many new files are violently diminished of half their efficiency by a few careless strokes when first applied to the work. Do not use a file on the chilled and gritty skin of castings, or on a weld where borax or any vitreous fluxes have been employed—no file can endure such usage. Every filer should keep a worn file with which first to attack the rough, gritty, or oxidized surface of iron work, and thereby pave the way for more efficient work with his sharp files. A piece of gritty or chilled casting that would rapidly destroy the cutting qualities of a new file would produce scarcely any damaging effect to a worn one. In filing steel, better results can generally be obtained by using files of a grade not coarser than "2d cut;" finer grades being employed according to the finish and delicacy of the work under manipulation. Users of files should always seek to discover the fitness or adaptability of cut and form of files specially suited to their work. No one should expect the best results from a file on brass or spelter which was intended for use on iron and steel. Care should be taken when purchasing files to see that the manufacturer furnishes full weight articles. This is always a desideratum, and especially in case re-cutting is desired. A full-weight file can be re-cut two or three times, while a light weight will hardly bear one re-cut and give satisfaction.

LIABILITY FOR INJURIES TO RAILWAY EMPLOYEES.—In connection with the discussion in England of the Employers' Liability Bill, the advocates of that measure have issued a paper describing the laws in force in France and Germany. It states that in Germany an Imperial law, passed June 7, 1871, and extended in 1872 to Alsace-Lorraine, contains a provision "that if any person is killed or hurt in the working of a railway, the proprietor is liable for the injury inflicted, so far as he cannot prove that such injury was inflicted by a higher power or by the fault of the person so killed or injured." A similar system exists in regard to mines and manufactures, and it is said to he common in portions of Germany for employers to club together to form accident insurance societies for the purpose of insuring the lives of their workmen. In France a general law applicable to employers, which also governs the operations of railway companies, contains a provision that "A person is responsible not only for the injury caused by his own act, but also for that which is caused by the act of persons for whom he is bound to answer, or by things which he has under his care." The French railway companies have established provident institutions for the benefit of their employees; but it is stated that even this precaution has not prevented frequent litigation in cases where men have been injured while engaged in the performance of their accustomed duties.—*Railway World.*

A CHEAP HAMMOCK.—Take a piece of Manilla matting from two or three yards long and a yard and a half wide, bind or hem the ends firmly, then fasten each end to a piece of timber. These pieces should be 5 ft. long, 2 inches thick, and should have holes bored about three inches apart the whole length. The matting is fastened by passing heavy twine from matting to hole, back and forth, really sewing the matting to the wood. For each end of the pieces of wood larger holes are bored, through which pass ropes to hang the hammock between two trees. This makes a cheap, comfortable and safe hammock. Being hung from four corners there is no danger of rolling out, and half a dozen children can swing in it at pleasure. —*Journal of Chemistry.*

TENDER MEMORIES.

The following lines will touch a sympathetic chord in many hearts: "I saw my wife pull out the bottom drawer of the old bureau this evening, and I went softly out and wandered up and down until I knew she had shut it and gone to her sewing. We have some things laid away in that drawer which the gold of kings could not buy, and yet they are relics which grieve us until both our hearts are sore. I haven't dared to look at them for a year; but I remember each article. There are two worn shoes, a little chip hat with part of the brim gone, some stockings, pants, a coat, two or three spools, bits of broken crockery, a whip and several toys. Wife, poor thing, goes to that drawer every day of her life, and prays over it, and lets her tears fall upon the precious articles, but I dare not go. Sometimes we speak of little Jack, but not often. It has been a long time, but somehow we can't get over grieving. Sometimes, when we sit alone of an evening, I writing and she sewing, a child in the street will call out as our boy used to, and we will both start up, with beating hearts and a wild hope, only to find the darkness more of a burden than ever. It is still and quiet now. I look up to the window where his blue eyes used to sparkle at my coming, but he is not there. I listen for his pattering feet, his merry shout, and his ringing laugh, but there is no sound. There is no one to search my pockets and tease me for presents, and I never find the chairs turned over, the broom down, or ropes tied to the door-knobs. I want some one to tease me for my knife, to ride on my shoulder; to lose my axe; to follow me to the gate when I go, and be there to meet me when I come; to call "good night" from the little bed now empty. And wife she misses him still more. Here are no little feet to wash, no prayers to say, no voice teasing for lumps of sugar, or sobbing with the pain of a hurt toe, and she would give her own life, almost, to awake at midnight and look across to the crib and see our boy there as he used to be. So we preserve our relics, and when we are dead we hope that strangers will handle them tenderly, even if they shed no tears over them.—*Rochester Union and Advertiser.*

STEAM DREDGING FOR OYSTERS.—Geo. M. Graves, of Oyster Point, New Haven, has now in process of construction an oyster boat designed for steam dredging. She is 71 ft. long, 17 ft. beam and 6 ft. deep, her engine 30-horse power and her screw propeller 53 inches. The boiler is on board and the work is being pushed as rapidly as possible. There is an over deck from 7 to 9 ft. high made water tight. In the sides of this over deck, in a line with the main hatchway, are openings, 6 by 8 ft., which when dredging open inwardly and are hooked to the ceiling. Through these openings the dredging is done by steam, saving the weary "back breaking" that attends dredging in the ordinary sailboat. Forward is the forecastle in which are berths or bunks for the crew. Directly over this is the pilot house, and back of this the captain's quarters. The expense of running this steam is for fuel not over $1 per day, 6 men at $15 to $20 per month for each. She will dredge in a day from 700 to 1,000 bushels, taking at each lift 12 or 15 bushels, while the sailing boat at each lift will not get more than a bushel or two at once, and during the day will be doing extremely well if she gathers 40 or 50 bushels.—*Sea World.*

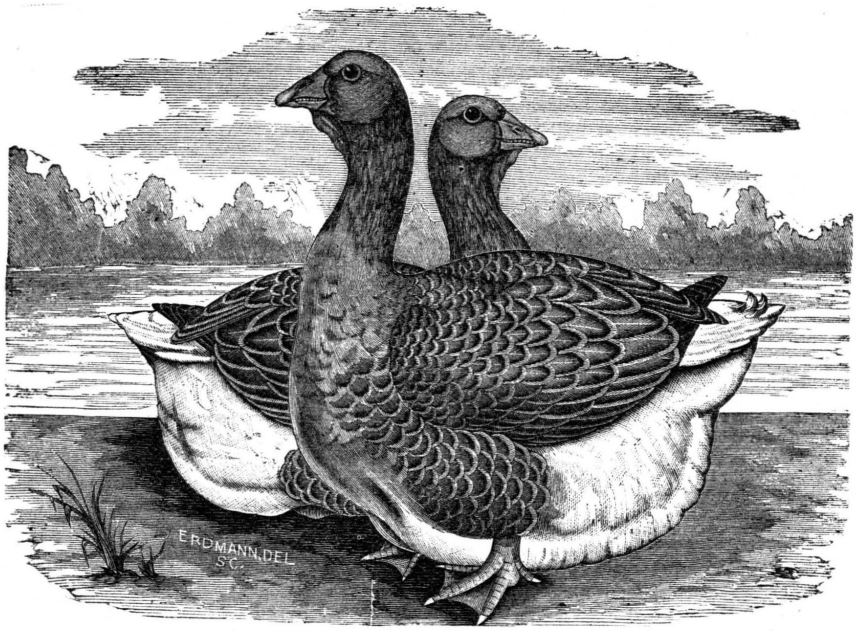
MAKE YOUR OWN BAROMETER.—A sheet of paper, dipped in chloride of cobalt, when the weather is to be dry and pleasant will become blue, when wet weather approaches it will become pink. The barometer flowers of France are thus manufactured.

CUSTOMERS on a milk route in New Haven, Conn., are supplied by a woman who in all sorts of weather drives her rounds with unfailing regularity.

TOULOUSE GEESE.

Thinking that some of our readers might like to give some attention to geese as a variety in their winged stock, we have secured an engraving of the Toulouse geese, which are among the most famous sorts. The engraving is made from drawings of birds owned by Benson, Maule & Co., of Philadelphia, large poultry breeders. The Toulouse breed is named after a city in the south of France, where they are largely raised, and whence they have been sent to all parts of the world. They are gray with white bellies; light gray on the body and breast, and dark gray on neck and wings. Their bills are dark flesh color, and legs deep orange. They are extremely large when fattened at maturity, averaging 45 to 50 pounds per pair, sometimes exceeding even this weight. They grow rapidly and will fatten readily at any age. At four weeks they will weigh from six to eight pounds. They are very hardy, being much stronger when young than goslings usually are. They are profitable on account of the abundance of feathers they produce, which, together with their extreme hardiness, makes them a desirable breed to keep. They are very prolific layers and seldom offer to sit. Their eggs usually hatch remarkably well.

This description shows some variations from that given by the breeders of the birds shown in the engraving. They are striking and handsome in either markings.



THE FRENCH OR TOULOUSE GEESE.

To Test Milk for Water.—A German chemist furnishes a very simple procedure for testing the amount of water in milk, which can be applied by any one. All that is required is a small quantity of plaster of Paris, say one ounce. This is mixed with the milk to a stiff paste, and then allowed to stand. With milk of 1,030 specific gravity, and a temperature of 60° F., it will harden in 10 hours; if 25% of water is present, in two hours; if 50%, in one and one-half hours, and with 75%, in 30 minutes. Skimmed milk which has been standing for 24 hours, and is of 1,033 specific gravity, sets in four hours; with 50% of water, in one hour, and with 75%, in 30 minutes. Heat should not be applied, as then the use of the thermometer would be required. This test is certainly very simple, and not costly.

WHAT SEVEN WOMEN DID.

These women lived in the country, were housekeepers with large families and small means; each one did her own work, and was full of care. To brighten up their monotonous lives a little during the dull, hard winter, they proposed to meet once in two weeks at each others' houses, with their knitting or sewing, but to go home before tea, that it should not interfere with their regular duties.

One of them proposed that they should read some book together and talk about it afterward, thus affording them pleasant and useful subjects for thought during the intervals of visiting. One lady suggested that they read Shakspeare. She had once seen the play of Hamlet, and she wanted to know more of this wonderful book. This at first seemed to these women of limited education, and at the ages of from 40 to 60, as an idea too ambitious for them to carry out; but at last they determined to attempt it, although for fear of the ridicule of others who might hear of it, they resolved to keep their own counsel.

By dint of economizing and contriving, they purchased a copy of Shakespeare, and with the aid of a pronouncing dictionary to test all doubtful words, they began with the play of Julius Cæsar. From reading the plays, they were led to desire a knowledge of Shakspeare himself, his surroundings and his friends. A kind and congenial friend, to whom they confided their secret, obtained for them the needful books. Notwithstanding the preparatory reading and the necessary study for these meetings had to be done here and there in odd moments, these women felt uplifted and refreshed by the thoughts which thus came to them, and they were delighted with the new outlook which opened over and above their weary lives. By their careful and strict attention to their studies, the range of their knowledge was greatly enlarged, and they were able to write creditable and thoughtful essays on subjects which grew out of their research.

The project of securing the *Great Eastern* to run between London, New Orleans and Galveston, to take our cotton and other products and bring back emigrants, is in a fair way of being fully established.

SOLID SENSE.

Virtue in its unity demands no extraordinary powers, no remarkable talents, no superhuman efforts. It is possible to each and to all—the child may possess it as well as the wisest man, the unlearned laborer as well as the most profound scholar. The outward claims of duty vary with every varying circumstance and relation of life, but this inner claim of conscience to be loyal to them as fast and as far as they are discovered, is one and the same to every human being.

The earnings and savings of industry should be for a purpose beyond mere savings and earnings. We do not work and strive for ourselves alone, but for the benefit of those who are dependent upon us. Industry must know, too, how to spend and how to save. The man who knows, like St. Paul, how to spare and how to abound, has a great knowledge.

We can never have much confidence in the uprightness of others until we have discovered some degree of uprightness in ourselves. We are apt to suspect everybody, if we ourselves ought to be suspected, and just as apt to trust others when we ourselves can be trusted.

Happiness is like manna; it is to be gathered in grains, and enjoyed every day. It will not keep; it cannot be accumulated; nor have we to go out of ourselves or into remote places to gather it, since it has rained down from heaven at our very doors, or rather, within them.

One had better sail boldly in almost any direction than drift without any direction at all. One had better sail in the maddest storm that ever troubled the sea of life, than lie on the sea and drift with any wind that blows.

Talent and worth are the only lasting grounds of distinction. To these the Almighty has fixed His everlasting patent of nobility; and these it is which make the bright immortal names to which all may aspire.

It never yet happened to any man since the beginning of the world, nor ever will, to have all things according to his desire, or to whom fortune was never opposite nor adverse.

A cheerful temper is like a grain of musk; it imparts its fragrance to everything that comes in contact with it, yet it always remains the same.

It is the easiest thing in the world to discover all the defects in a man when we do not like him.

NEW INVENTIONS.

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

MAGAZINE FIRE-ARM.—George E. Williams, S. F. Patented Aug. 31, 1880. No. 231,390. The improvements shown in this fire-arm are more especially applicable to that class of guns in which the cartridge is received from the magazine into a carrier-block, and is elevated by this block to a level with the bore of the gun, and is then forced into its chamber in the barrel by a carrier-bolt or breech-pin operated by a lever and suitable connecting-links or arms. This invention consists of a peculiarly slotted plate, formed with the breech-pin bolt, and adapted to reciprocate the bolt by the action of the guard lever. It also consists, in combination with the bolt, of a hinged locking-block, which is connected with the guard-lever by links, and is thrown up by them to allow the bolt to be retracted, and is drawn down so as to lock it firmly when it has been forced forward and the cartridge introduced to its chamber ready for firing.

BUTTON.—Lesser Leszynsky, S. F. Patented Sept. 7, 1880. No. 232,044. This invention relates to an improvement in buttons and similar devices which are used for connecting portions of clothing or other articles together; and it consists of a stem, having two parts projecting from the button or head, in combination with a rubber or other elastic center, which is held between the button and the goods, and furnishes an elastic, non-wearing surface, which the button-hole surrounds.

RUDDER.—Uriah B. Scott, Portland, Oregon. Patented August 24, 1880. No. 231,623. This nvention relates to certain improvements in that class of rudders known as "balanced" rudders, such as are commonly used on light-draft stern-wheel river steamers; and the improvements consist in providing a curved or bent rudder stock, so that when the rudder is turned it will fit close to the bottom of the boat at all points of its swing, thereby preventing drift-wood or other obstructions getting between the rudder-plates and bottom of the boat.

PICK.—Corbin Norton, Tuscarora, Nev. Patented Sept. 7, 1880. No. 232,056. This pick is especially useful for miners' purposes where the tools receive hard usage. The improvements consist in forming a head of malleable iron, cast with a socket for the pick-handle, and having a slot through which the pick itself is passed, the pick being secured in place by a key fitting into a central notch. No wedging of the handle is necessary to keep it in place, and neither pick nor handle is apt to get loose from the head.

PROCESS FOR PRESERVING HEAT IN THE CARCASS.—Richard Jones, Berkeley, Gloucestershire, England. Patented, Aug. 31, 1880. No. 231,807. This process consists in utilizing the circulatory organs of the blood to equally distribute throughout the body a solution, and by this action to mingle the substances intimately with the blood, so that they permeate the whole body and coagulate with the blood in every part, and thoroughly preserve the meat without giving it a sodden appearance.

SCRAPER.—Assaria Rewrick and John D. Gilmour, S. F. Patented, Aug. 31, 1880. No. 231,850. The scraper is formed in a cup-shaped triangular form. It is made by means of a die in which it is struck up, in such a form as to give the greatest strength with a minimum of metal. By this construction the scraper can be kept sharp with but little grinding.

HYSTERIA—WHAT IS IT?—What is hysteria? asks a young lady who says some day she will study medicine and be a physician, even if for no other purpose than to know about the body, so wonderful in its make-up and its action. In reply we may say that hysteria has been defined in many ways by many physiologists, but in our opinion most of their definitions are faulty in many ways. Hysteria is a sort of nervous storm, in which nervous action breaks over all restraint of the will and the judgment, forsakes its normal course and gives rise to incoherent, unnatural, irrational ravings. Hysteria is a sort of insanity. The forces in the nervous system, like the forces in nature, are subject to various disturbances. In nature they break out in thunder-storms, hurricanes, etc. In the human body we have instead, hysteria, passion, and other phenomena. If we could control the distribution of heat and cold in nature, we could modify or do away with violent cosmic changes by equalizing everything. The same would prevent hysteria. Equalize the circulation of the blood in the human body and hysteria would rarely if ever appear.—*Herald of Health.*

CHIPS.

"SANCTUARY shoes" are advertised in England. They are warranted not to squeak.

THE incorrigible bachelor hath a miss shun in the world.

A CHILD without legs has just been born. "Thank heaven," said the weeping father, "this will never be a champion pedestrian."

SPEAK of man's marble brow and he will glow with conscious pride, but allude to his marble head and he's mad in a minute.

WHEN we see XX or XXX on a liquor cask we always think of the amount of criss-cross walking condensed inside of it.

THE best summer resort for a spitz dog is a watering place. The dog should be placed about four feet under water.

IT is no doubt a very nice thing to marry a wealthy maiden, but at the same time a wealthy widow should not be spoken of disparagingly.

THERE'S a man out in Illinois who swings dumbbells for an hour every morning, and walks ten miles every day, and yet he is too lazy to work for a living.

THE Boston *Post* remarks: "It isn't pleasant for a man in delicate kid gloves to grasp a door-knob just after it has been turned by a man in search of a towel.

WHEN a man hasn't more than a minute to catch a train, and is running for it with all his might, it is somehow just the time set apart by fate for one of his shoestrings to break.

A LADY friend recently found a small eel in her milk-pail, and when she spoke to the milkman about it, he said that he had noticed that one of his cows acted strangely. He'd sift the water before he allowed the cows to drink it hereafter.

THE English language is wonderful for its aptness of expression. When a number of men and women get together, and look at each other from the sides of a room, that's called a sociable. When a hungry crowd calls upon a poor minister and eats him out of house and home, that's called a donation party.

"YOU know," said Plato to Socrates, "that melons must be kept cool." Socrates nodded assent. "Now," continued Plato, "if melons were scarce and descendants of Ham very numerous in the vicinity, how would you keep your melons cool and secure?" "I'd put them," replied Socrates, "in a chilled iron safe."

THE New Zealand newspapers notice an amusing instance of the manner in which colonial railway trains are sometimes stopped. The engine-driver, noticing a lady waving her hand at a siding where the train was not timed to stop, as if she wished to get on board, stopped the train, only to discover that the lady wanted to know if any passenger had change for a £1 note.

DOMESTIC RECIPES.

BATTER CAKES.—1. With one quart of flour sift five times two heaping teaspoonfuls of baking powder, or one teaspoonful of soda and two of cream-tartar, add a tablespoonful of salt and sweet milk till the batter is of the right consistency. Then add two eggs, beaten whites and yelks apart and then together. Fry on a hot griddle, using as little fat to fry with as possible. If the griddle is of polished steel, no fat at all will be needed. 2. Into one quart of flour pour enough buttermilk or sour milk to make the batter of the right thickness, add soda to neutralize the acid, salt to taste, and two eggs beaten as prescribed in the recipe above. Try a bit of the mixture, and see whether the proportions of the soda are right before you fry the whole. Old buttermilk or sour milk will not make nice cakes, and buttermilk is much to be preferred to sour milk. The griddle must be of just the right hotness to insure success, and the fire must be good and steady. In spite of everything, however, one does not always produce the best results in batter cakes, and fails without being able to divine any possible reason for failure. Some malicious fairy doubtless gets into the dish and spoils it.

PEELING PEACHES WITH LYE.—I have used lye for removing skins from peaches for canning or drying purposes, and think it better than peeling with a knife. It is not only a quicker process, but a better one, leaving the fruit perfectly smooth, and especially nice for preserving whole. Fill an iron kettle with water; place over the fire; put in a piece of concentrated lye, and let it dissolve until strong enough to cut the skins (you can tell of its strength by droping in two or three peaches), then take out and put in the fruit. Home-made lye is a good as concentrated, but not having any ashes, I bought the concentrated article. The fruit must not remain in longer than is necessary to cut the skins. A wire basket is the best thing I have found for dipping them in and taking out. Plunge at once into a tub of cold water, rinse thoroughly, and wipe the skins off with a cloth.—*Mrs. M. L. K. in Rural New Yorker.*

HOP YEAST.—Three large potatoes, one handful of hops; put in a small bag; put the potatoes and hops into two quarts of water and boil down to one quart; take out the bag of hops and potatoes; mash the potatoes fine and throw back into the boiling water; stir flour into this while hot until it is quite stiff; let it stand until it is nearly cold, then add half a cupful of yeast, half a cupful of sugar, one tablespoonful of salt, and half a tablespoonful of ginger; set in a warm place to rise; when light, put in a covered jar and place in a cool place.

OKRA SOUP OR "GUMBO."—Two dozen tender okra pods, two quarts of water. If only an okra soup is wanted, 10 or 12 pods will suffice, but then it is not a gumbo, and you miss a good thing. Cut pods in circular slices, fry in butter or lard, or with bacon slices, till well brown (not burned); have ready boiling half a chicken or bits of mutton or beef or rabbit in aforesaid two quarts of water; add a handful of washed rice, pepper, salt, tomatoes, a few pods of tender green beans, one ear of corn (cut grains), and last, fried okra.

HARD YEAST.—Stir into a pint of lively yeast enough flour to make a thick batter, and a tablespoonful of salt. Let it raise once, then roll out thin, cut into cakes with a cake-cutter, and dry in the shade in clear, windy weather. When perfectly dry put in a bag and hang in a cool, dry place. They will keep good six months. One of these cakes dissolved in a little milk or water is enough for four quarts of flour.

TO STEW CARROTS.—Half boil, then nicely scrape, and slice them into a stew-pan. Put to them half a teacupful of any weak broth, some pepper and salt, and half a cupful of cream; simmer them till they are very tender, but not broken. Before serving up, rub a very little flour, with a bit of butter, and warm up with them.

"ABIDE WITH US."

Thick on Thy world lie all things that are beautiful,
Fair are Thy skies from the dawn to the night,
Thousands of singers chant songs sweet and dutiful,
Stay Thou with us, and we too shall have light.

Lord, 'tis Thy face turning earthward in tenderness
Maketh all nature be happy and gay;
We are in sorrow, alone and defenderless,
Lord, abide with us, and bless us to day.

All the fair flowers bend their heads as harmoniously,
Nearer they creep to the feet of their King;
All the glad birds lift their voices melodiously,
Master, stay with us, and we too shall sing.

We have grown sad through long winters of carefulness,
Now the sun shines, and the summer is here;
Heed thou the cry that we offer in prayerfulness,
Thou art our Joy-Giver, Lord, come Thou near.

See, we are eager, confiding, and emulous,
We would fain keep Thee as others have kept;
None have come close to Thee, hopeful if tremulous,
Then, disappointed, returning, have wept.

So do we hold Thee, in faith and in lowliness,
Are we not sorrowful, needing Thy love?
Come to us, stay with us, teach us Thy holiness,
Then lead us home to be with The above.

Fair on Thy wor'd lie all things that are beautiful,
Glad are Thy children from morning to night;
Lord, we adore Thee, now strong, loyal, dutiful,
Feeling Thee near us, we walk in Thy light.

—*Marianne Farningham.*

THE QUEEN AND THE WAIF.

Silk and diamonds and trailing lace,
Haughty carriage and fair proud face;
Out from the palace towering high,
Grand and bray 'neath the bending sky;
O'er the lawn with its carpet green,
Lightly stepping came Austria's Queen,
Flashing gems in the summer sun.

Jewels gleam on her royal hands,
Clasp her arms with their shining bands,
Sparkle and grow where the sunbeams fall;
But the most precious of them all
The nurse is holding with tender care—
The royal baby rosy and fair;
Pressing fond kisses on cheek and brow,
The Queen is only a mother now.

Down the lawn in its shadow deep,
A beggar woman lies asleep.
Hunger, poverty, pain and care
Darken the face once young and fair;
There by the wayside seeking rest,
Clasping a babe upon her breast,
Its hungry wail across the green
Stirs the heart of the mother Queen.

Down on the green grass, kneeling low,
Baring her bosom white as snow,
Laying a child without a name
Where only royal babies have lain,
Feeding it from her own proud breast,
Hungry, starving—ah, there's the test.
Mother love spans the chasm wide;
Queen and station must stand aside.

SCHOOL REMINISCENCES.

While reading with pleasure the school reminiscences of some of your contributors, I am tempted to give you a short chapter on the same subject, if it has not grown threadbare. These scenes stand out so vividly in my mind, and show with such clear lines the difference between then and now—the old and new—in educational ways. Those were days when sternness ruled the school, and awe, not love, kept us in the right way. When tasks of Scripture were set us to learn as punishment for misdemeanors, and the pride of pupils was to see who could transgress most without being found out. I recollect a long task being set for me to learn as a punishment for taking a feast of green apples, with *salt*, in school, with another little girl who sat behind the door with me. The lecture that followed contained no explanation as to the harm to our stomachs of such a diet; only the great sin of not "minding our books" was held up in all its enormity. But the task from Revelations had its effect. For two or three years I never dared to go out of doors after dark for fear of meeting the "beast with seven heads and ten horns," or being hit on the head with some of the contents of those "vials of wrath." A vial was a very common receptacle of medicine in those days. Of any medicine I had a horror, but to have it poured on one's head from heaven would be terrible. I used to look up, when I had committed any childish sin, to see if I could discover any trace of the vials coming down, and would take care to stay under a roof for a while.

Once a week we learned one of Watt's hymns, or a psalm in meter, to repeat. The lines of one hymn greatly mystified me—

"The moth around the candle wheels."

What were the candle wheels, and where could I see them? But I should never have dared to ask the teacher about it. And thus my childish mind groped along for several years.

We had a lady teacher from Boston one summer. She was prim, precise, exacting and somewhat stern. When she pursed her thin lips and leaned forward in her chair without bending her back, and tapped her little bell once and said, "Young ladies, less levity," there was a sudden cessation of smiles and a fixed attention to books. She was conscientious, and meant to be kind, as I now know; but to me then she was something to dread, and kept my little heart jumping into my mouth most of the time during that, to me, eventful summer.

At the close of a long day, after the books were laid aside, she said in tones that sounded very loud to me, and very awful, "Emma S——, you will please remain after school to-night." To be requested to remain after school could mean nothing but wrong-doing on my part and a lecture or punishment on hers. As I sat puzzling my brains to recall what wrong I had committed, or what duty omitted, my cheeks flushed, my eyes filled with tears, and trembling from head to foot, I saw the last one of my playmates file out of the school ground. I never can forget the dread and awe I felt at that moment. I think to be left entirely alone with that teacher for one half hour, just to have her sit still and look at me, without moving or speaking, would have been sufficient punishment for any sin I may have committed, although she never whipped us and seldom scolded. But I was timid and sensitive, and there was no love nor sympathy between teacher or pupils.

I thought of how I had hidden my shoes in a hollow log on the way to school, and come bare-footed, because my great friends, the Hixon girls, came without shoes. I thought of the hole in the skirt of my dress, kept together with pins, of the part I had taken with others in teasing Bub Weeks, aged four, because he wore dresses and his sister brought a little pillow on which he took a nap every day. Each of these enormous crimes rose up in my mind, and I wondered for which I was to be arraigned.

When we were alone the teacher cleared her throat and said in solemn tones: "Emma, you have now arrived at the age of 10 years. It is proper that you should begin to write compositions. I wish you to write one for next week. This is Friday, and your composition must be brought in next Monday. As you are inexperienced in writing, I will assist you by giving you a subject. It is this:

"The spider's most attenuated thread is cord, is cable, to man's strongest tie on earthly bliss."

I sat dumb, bewildered. Had she told me to write a sermon and preach it on the next Sunday, I should have felt quite as competent. And yet I had no thought of disobeying her. I must write the composition, that I knew, and yet I could not. I could not even recollect the subject, and timidly asked her to write it down. With my sun-bonnet well pulled over my face and the slip of paper in my hand, I walked slowly home and sat down on the front door stone to think of it all and wonder what I could do. My heart was too heavy to join the other children in their play at the back of the house. The gate clicked. I looked up. Uncle Robert was coming. Great-hearted, tender, loving Uncle Robert! Seeing me alone and in tears, it did not take long, as I sat upon his knee, with his arms about me, to unburden to him the whole story. As I gave him the slip of paper with the subject upon which I was expected to write, I wondered what made him laugh so long and heartily. The matter was so serious to me. At length putting the slip of paper in his vest pocket, he took my hand and led me down the walk to the garden at the side of the house. It was a sweet, old-fashioned garden, with its chamomile bed, and its patches of thoroughwort, fennel and dill. On one side were vegetables, and on the other grew flaming poppies, yellow marigolds, ragged ladies, hollyhocks and sunflowers. I loved them all, and to this day no flowers are so sweet. On the flower side were some hives of bees, standing on a bench close by the fence.

A honey bee lighted on a flower near us. My uncle called my attention to it; to his curious body—in three parts; to his legs made to carry pollen for bee bread; to his little pipe through which he gathered honey. He talked in plain language and kind voice about the bee, its habits and structure, drew from me all that I knew or could think of about honey, etc., called my attention to the similarities and differences between bees and other insects, told me how they talked to each other by means of feelers, how the queen was made by being fed upon royal food, and of the care the worker bees took of their young; fanning them when too warm, and hovering them if in danger of being chilled. In short he interested and delighted me, I forgot my sorrow. "Now," said my uncle, "will my little girl write down for me all she knows about the honey bee?" Yes, indeed I would! How much I could think of! Two whole pages, and no one helped me. The writing it was a pleasant pastime.

When finished, my uncle wrote a note which he said I was to hand to the teacher on Monday morning together with what I had written.

I never knew what the note contained, but my effort was accepted and, "the spider's attenuated thread" was not alluded to afterward.

The ice once more broken, I found that if permitted to choose my own subjects and write about things I knew something of, compositions were not such a great bug-bear after all.—*Dolly Juniper, in Rural Press.*

WILL HE SUCCEED.—In nine cases out of ten, man's life will not be a success if he does not bear burdens in his childhood. If the fondness or the vanity of father or mother has kept him from hard work; if another always helped him out at the end of his row; if instead of taking his turn at pitching off, he stowed away all the time—in short, if what was light always fell to him, and what was heavy about the same work to some one else; if he has been permitted to shirk until shirking has become a habit, unless a miracle has been wrought, his life will be a failure; and the blame will not be half so much his as that of his weak and foolish parents. On the other hand, if a boy has been brought up to do his part, never allowed to shirk his responsibility or to dodge work, whether or not it made his head ache or soiled his hands, until bearing burdens has become a matter of pride, the heavy end of the wood his choice, parents as they bid him good-bye may dismiss their fear. The elements of success are his, and at some time and in some way the world will recognize his capacity.

A MAN out West obtained a divorce from his wife and married again within three days after the decree was granted. An Irishman, commenting on the man's action, remarked, "Be-dad, he couldn't have had much respict for his first wife, to be marrying again so soon afther lavin' her."

"MINE poy Hans," said Smigglefritz to a friend, "is the piggesht pig der vas in Galveston." "How did he do?" "Vell, I sends him the odder day to the groshery to pring me a pucket of peer for mineself all alone, and, py shimmy, he drinks himself almost a pint on the way home."

HOW WE STARVE BY OVEREATING.

Dr. Tanner's fast has given us new light on the important question, how long a robust man may starve himself without permanent injury, and, perhaps, with positive benefit. But the very common case of starving oneself by overeating is to most people (though few know or think it) of much greater personal interest. It is because the statement that we can, and too often do, starve ourselves by overeating seems so paradoxical, that I hope every reader of the *Press* will do himself and friends the justice of seeing if it is true. How often do kind friends persuade the tired mother to eat a little more; or the worried man of business to take an extra lunch or supper, when already the body is at its utmost strain and can no more digest an extra meal than it can undertake extra labor. No man in these busy days can afford to neglect the stern fact that digestion is labor, and in weak persons often just about all the labor they are capable of. This fact is daily recognized in hospitals, especially by the surgeon, who, dealing most with the accident cases, has comparatively healthy stomachs to deal with. Yet here, when all the strength has to be husbanded to meet the strain of a surgical operation, a surgeon dislikes to operate before he has put his patient through a course of simple diet, with rest. Generally too he gives him such medicines as will excite the bowels, kidneys, etc., to carry off those waste matters from his system which too often are simply due to gross feeding.

It would take too long, and probably also convey less of the real truth, were I to go into detail and show the nature and magnitude of the digestive processes. A glimpse of it may be gathered from the fact that our best authorities agree that the internal muscular labor of the body consumes about four-fifths of our daily strength and food; that is, that the churning, straining and pumping of the food and digestive fluids uses up most of our food to make the remaining fifth available for use in our daily labor. This is a big thing I hear some one exclaim. Yes, and the following may, perhaps, seem bigger: Thirty lbs., or nearly twice the weight of the whole blood in our bodies, is poured out daily from the blood vessels (and of course absorbed again when its work is done) into the alimentary canal for digesting purposes. Our two best authorities—Playfair and Letheby—differ but very slightly in their estimates. The average of both states that daily the blood secretes 3½ lbs. of saliva, 14 of gastric juice, 8¾ of pancreatic fluid, 3½ of bile and ½ lb (I believe much more) of intestinal fluid. By measure this comes to 21½ English pints, or more than three American gallons; and all this has to pass through miles of little tubes too small for the naked eye to see. Evidently the 17 lbs. of blood with which physiology credits the average man has to be active all the day long. The blood much resembles a restaurant waiter, who is constantly passing from the kitchen (the stomach, etc.) to the dining hall (visceral veins—lymphatics) with viands of all kinds, and as constantly returning again with the dishes, the spoons and whatever the guests refuse.

These various digestive fluids are besides of different chemical composition. Each one, too, contains a special organized ferment, powerful to the digestion of some special part of our food. Now these ferments are in a sense like the seed of a plant, and their production must exhaust the organ producing them much as the seeding of a flower exhausts the plant producing it. No wonder then that indigestion is the rule and not the exception in this bustling busy age.

If a man must, then, overwork, let him beware of overeating. Many ignorantly overeat, deluded by the temporary pause that each meal gives to that feeling of continuous exhaustion, which is quite as often caused by excess of food as by excess of work. This temporary strength is probably due to the stimulation of that great epigastric nervous flexus which is close to the stomach. It has charge of the digestive process, and by food it is excited, and receives an extra supply of blood, just as the eye is excited to action by light, or the ear by sound. This great flexus is the focus of sensation for the abdomen, and its exhaustion we call hunger; but I guess Americans oftener exhaust it by too big than by too little meals, and either cause, it is evident, may give a feeling of hunger. Most of us could easily pick out from among our acquaintances many more examples of weak people who eat much than of weak ones who eat little. The big eaters probably are weak because they habitually eat up to their fullest vital capacity, and are, in fact, like so many hogs—living to eat, instead of eating to live.

But overeating does not merely use up all the working strength in digestion. Unless limited very strictly to the point of complete digestion, much of the food may pass through only the first stages of digestion. It may be acidified in the stomach, but fail to get neutralized in the bowel, where fermentation of an unnatural kind will cause flatulence, and give rise to impure fluids. These absorbed into the blood give feebleness of constitution and liability to disease, and at the same time overload and overwork the liver, kidneys, lungs, skin, and all purifying organs. This habit is the commonest cause of many of our complaints.

To the man or woman who overeats and will not work I have nothing to say. He or she is a hog. But to the wearied mother who wants strength to get through her work I would say: Aim first at eating those foods which need least digestion—roast or broiled mutton, toasted bread (buttered when cold), boiled rice and milk, oatmeal mush, milk diet of all kinds. And here let me remark that milk will, as a rule, agree with any one, if well boiled, and then diluted one-half with weak tea or coffee, or any other fluid, to taste. Many people find that milk does not agree with them, but, boiled and diluted, it seems quite to lose its bilious nature. Eggs, too, are good; also simple soups, and ripe fruit, raw, or cooked with a little sugar. Apples, well washed and baked in the oven, no stomach will feel—it is the sugar of cooked fruit that so often disagrees. Do not attempt too many meals, or have them too near each other. New food introduced into a stomach just finished with and about to pass the last meal into the bowel, may disturb the process, and spoil both the new and the old. Yet something may be taken between meals, if it be nearly all fluid—say a little beef tea, made with cold water slowly heated up just to a boiling point, or a little gruel, made with rice, oatmeal, graham flour, etc. Stir up a tablespoonful of one of these with as much cold water as will thin them to the consistency of cream. Then pour on a pint of boiling water, stir well, and salt it to taste. This has the advantage of being quickly made. A baked apple, a pear, an egg beaten up with a little sugar and water, or any of these simple things, will not only give strength, with almost no labor in digestion, but, taken an hour before food, often give an appetite, and ensure the better digestion of the following meal.—*Sanitarian, M. D., in Scientific Press.*

The Earth as a Conductor.—In a paper on the earth as a conductor of electricity, Prof. Trowbridge, of Harvard, arrives at these conclusions: 1. Disturbances in telephonic circuits usually attributed to effects of induction are in general due to contiguous grounds of battery circuits. A return wire is the only way to obviate these disturbances. 2. The well-defined equipotential surfaces in the neighborhood of battery grounds shows the theoretical possibility of telegraphing across large bodies of water without the employment of a cable; and leads us to extend greatly the practical limit set by Steinheil. 3. Earth circuits have an intermittent character, with periods of maxima and minima, which may occur several times a minute during the entire day. This intermittent character is seldom absent.

Rapid Forest Destruction.—An intelligent correspondent of the Cincinnati *Gazette*, after an investigation in the pine regions of Michigan, reports the judgment that the mills in the Alpeno district have only 15 years' supply left, and adds: These figures agree very closely with those given me a few weeks ago by the president of the largest logging company on the Mississippi river, operating in the Wisconsin pineries, a region that has been worked much less extensively than the Michigan pineries. They would last, he said, 30 or 40 years. The Minnesota pineries are not so large as either of the others, and will probably not survive them. In from 25 to 40 years the last tree will be cut, and the entire country from Maine to the Rocky mountains must learn to live with meager quantities of pine lumber brought at great expense from distant countries. The pineries cannot be replaced. A full grown tree represents hundreds and hundreds of years of growth. I saw small pines, no larger round than a man's arm, bearing the scars made by the axes of the United States engineers 35 years ago. What ages, then, must be required to produce a tree three or four ft. in diameter? When these forests reach the condition of the pineries of Maine and New York, and become extinct, no new ones will take their places. The American of the near future must learn to hew and build without pine, and marvel at the thoughtless recklessness of his ancestors.

Glucose.—The manufacture of glucose in this country has grown to enormous proportions, there being at present no less than $30,000,000 invested in it. The material here is made entirely from corn, and so successful has it been, that quite a *furore* exists in connection with it throughout the West, where a number of new factories are being set up. This industry originated in the year 1863, with Messrs. Gessling & Bradley, who at that time improvised an experimental factory in Buffalo, to determine if grape sugar and syrup could not be made from corn. The product had been made for years in Europe from potatoes, and imported into this country at prices ranging from 8 to 12 cents per pound; but up to that time sugar from corn was not known as a commercial article. The experiment was successful, and from this beginning has gradually developed what is now an immense industry. At the present time, instead of importing from Europe an inferior article of grape sugar made from potatoes, at a cost of from 8 to 12 cents, as above noted, large quantities of corn sugar are exported at about three cents. A bushel of corn produces 30 pounds of glucose.

Horse Leather.—By a recent Cabinet order, horse leather has been adopted as the material of which the boots issued to sailors of the German navy are in future to be made. Experiments with horse-leather boots have, it appears, been carried on for the past 18 months, and with such satisfactory results that the use of calf skin is to be altogether abandoned in making naval boots and shoes. The leather used is to be made of the skin of the quarters of the horse, the flesh being carefully scraped off, so as to render the leather soft and pliable, while still remaining, to a large extent, waterproof.

All the Paris papers agree in advocating a pacific foreign policy. Some journals demand the Chambers to be summoned for a special session; but it is impossible. They will not meet before the usual time. It is announced that as soon as the new Cabinet is definitely constituted, a circular of a very pacific character will be dispatched to the representatives of France abroad. It is announced that Gambetta will shortly deliver a pacific speech.

THE PHOTOPHONE—SOUND REPRODUCED BY LIGHT.

"There is nothing new under the sun," said the wise man. The times have changed. Now everything is new, and novelty follows novelty. The growth of natural knowledge has broadened the field of investigation, and increased the number of trained specialists, and an answer to any special inquiry is almost certain to come from some part of the scientific domain. The latest thing—it is simply a marvel—in applied science is the discovery that "sounds can be produced by the action of a variable light from substances of all kinds when in the form of their diaphragms." In other words, the ray of light is substituted for the connecting wire, and sounds produced at one station are reproduced at another. It is well known that the action of the telephone is due to variations in an electric current, caused by a diaphragm set in vibration by the voice, the current thus modified reproducing its vibration on a sensitive diaphragm at the other end of the circuit. In the photophone, as the new instrument is called, the changes in the electric current are made during its passage through the metal selenium. This curious metal was discovered by Berzelius in 1817, and by him named selenium. It is not known to occur native, although several native compounds of it are known. In its modifications it is both a conductor and a non-conductor of electricity. A steady light allows a current to pass through an even resistance; a varying light varies the resistance; so that the current is stronger or weaker after passing through the selenium, and in a telephone its vibrations are easily turned into vibrations of sound. The inventors have already conversed between points about 600 ft. apart, and they believe that a similar result can be obtained as far as a beam of light can be flashed. The simplest apparatus yet devised consists of a plane mirror of flexible material—such as silvered microscope glass or mica—which will quiver with the vibrations of sound. On this surface is collected through a lens a beam of light from any source, good success having been obtained from a kerosene or candle flame. The parallel beam reflected from the plane mirror is thrown to a distant concave mirror and focussed on a piece of selenium, electrically connected with a telephone. The voice throws the plane mirror into vibrations, which modify in intensity the ray of light, which rapidly changes the resistance of the distant selenium, this varying the electric current in the telephone as the voice now does directly. Another means of affecting the beam of light is by a disk, perforated with slits, which is rapidly turned, producing in the selenium a continuous musical tone, whose pitch varies with the rapidity of the disk's rotation, a silent motion thus producing a sound. A strange thing is that some substances placed in the beam of light do not cut off the sound. A sheet of hard rubber, for instance, made the beam invisible, but the musical note was still heard. Other experiments suggest the possibility of doing entirely without the electric current in the telephone at the receiving station. Many other substances were substituted for selenium, the affected ray of light focussed upon them, and the musical note was heard without the aid of a telephone or battery. Only carbon and thin glass failed to give a sound.

Some minor details of the difficulties encountered and overcome in using selenium in the apparatus for speaking from a distance, are of interest. A small bar of selenium has a resistance to electricity equivalent to that offered by a telegraph wire long enough to reach from the earth to the sun. Even the cold light of the moon lessens this resistance, and such a brilliant light as that of burning magnesium wire halves it. But Bell and Sumner had to work long to reduce this resistance within manageable limits. No selenium crystal was ever known to measure less than 250,000 ohmes of resistance in the dark. They have made cells measuring only 300 ohmes in the dark and 155 ohmes in the light, by melting selenium to brass conductors, a chemical union being formed which lessens the resistance at the point of contact of the two substances. Their 50 forms of apparatus are based on one of two principles—either to control the source of light, or to modify the beam itself, the second being the most practical.

The inventors of the photophone are Prof. Alexander Graham Bell, the acknowledged inventor of the telephone, and Mr. Sumner Taintor, of Watertown, Mass. The paper describing this invention was read by Prof. Bell before the American Association for the Advancement of Science, and was illustrated by diagrams projected on a screen, and by working apparatus. The interesting paper is described as a model of precise statement and scientific accuracy.

THE FASTEST TROTTING ON RECORD.—The flying trotters are still whittling down the seconds which remain above two minutes, as the time for trotting a mile. The record is now reduced to 2:10¾, made September 18th at Chicago, by "Maud S." This is, of course, a great event in equine history, and we give the brief description of the feat which has been transmitted by telegraph. It will be understood that the mare trotted against time and so had the track to herself. It was nearly six o'clock and growing dark when "Maud S." was brought on the track. The sky was cloudy and a strong south wind was blowing. At the first send off "Maud" soon left her feet. Her driver, Barin, turned her back for a fresh start. She then trotted to the starting point square and level, and as her driver nodded for the word, quickly lengthened out her stride and got to the quarter in 34 seconds. It was then believed impossible for her to do better than 2:16 or 2:18, but when she got down to the second quarter at a 2:03 gait, the fastest record, there was a breathless interest and expectancy. It was feared, however, that the strong head wind, when she turned, would slacken her speed materially and render it still impossible to win. She kept straight forward, however, without a break or a skip, and marked the three-quarter mile pole in 1:36. Barin urged her gently with voice and whip and she responded quickly, and the multitude was breathless as she went the final quarter and thundered down the home stretch in 2:10¾. The time by quarters was, first, 0:34; second, 0:30¾; third, 0:31¼; fourth, 0:34¾. Loud cheers greeted the mare, her driver and manager as they went to her stable.

INVENTOR OF THE TELEPHONE.—Prof. Alex. Graham Bell has received the Volta prize of the French Academy of $10,000 for the invention of the telephone, as "the best application of electricity." Prof. Bell is also the inventor of the photophone, which he is said to regard at present as a scientific toy, as the telephone was regarded at first. The future use of the photophone will be, he thinks, between ships at sea, wrecks and the shore, and for military communication. Prof. Bell announced the possibility of producing sound by interrupting the action of light on selenium to the Royal Institute of Great Britain in May, 1878; and shortly afterwards he heard Willoughby Smith announce to the Society of Telegraphic Engineers that he had heard the action of a ray of light on a crystal of selenium by a telephone in connection with it. Prof. Bell was born in Scotland, and was educated at the University of Edinburg. He arrived in Canada in 1870, and was called to a chair in Boston University in 1872. He is said to be a man of remarkably fine presence.

THE house still stands in Salem, built about 1632 by Roger Williams, in which is a low room, with solid oak beams and timbers, where the witch's trials were held, and whence many victims were led out to die.

OUTBURSTS OF HEAT IN THE SUN.

Lately many scientific journals have contained accounts of the observation of new and suspected variable stars. The more carefully we study the stars the more evident it becomes to us, that a large proportion of them undergo and exhibit changes of light with a certain degree of regularity. Very few stars change their brilliancy so quickly as Algol, the "winking demon," in Medusa's Head, but there are many that wax and wane in a remarkable manner.

This subject becomes especially interesting, remarks a writer in the New York *Sun*, when we consider the fact that reasons have been shown why our own sun may be regarded as a variable star. Prof. Proctor in his essay on the "End of Many Worlds," suggests that periodical outbursts of heat in the sun may account for the curious traditions running alike through the Indian, Egyptian, Chinese and Greek mythologies, that the earth at certain epochs undergoes destruction and renovation by fire. On such a supposition the story of Phaeton becomes the tradition of an actual event in the earth's history. According to the myth, Phaeton persuaded his father Apollo to let him drive the car of the sun for a day, lost the road, and, approaching too near the earth, set Olympus on fire, consumed cities and whole nations with flame, and turned the northern end of Africa into a waterless desert.

The cause of any sudden access of heat in the sun, or in a star, is believed to be the downfall upon its surface of a vast quantity of meteoric matter whirling in the track of some comet. We have records of a sudden brightning of the sun in modern times. A remarkable phenomenon of this kind occurred on September 1, 1859, and although it was of very brief duration, it produced startling effects in various parts of the world.

If there is a mass of meteors rushing in an orbit that the sun crosses at certain epochs, and which then causes his fires to burst out with the effects described in the ancient traditions, they have thus far escaped the ken of the astronomers. Observation has shown, however, that if such meteors exist they are to be looked for in the wake of a comet, and we can depend upon the astronomers to give due notice of the comet's appearance.

HOW RAILWAY TIME IS KEPT.—There are in use between this city and New York 13 electric clocks, two of the number being placed in the waiting-rooms and one in the dispatcher's office at the Grand Central depot, New York. The time on the clock in the depot at East Albany corresponds exactly with the time in New York. Each one of the clocks is connected with the General Superintendent's office in New York, in which the railroad time is kept on what is called the "big clock." Conductors, train men and others are compelled to keep their watches in strict conformity with the Superintendent's clock. It is set by standard time, and connected with the time service department of the gold and stock telegraph. The time is distributed over the line each week day as follows: At 10 o'clock 58 minutes and 3 seconds A. M. the word "time" is sent by the main office to the telegraph stations between New York and Albany. This word is repeated for 28 seconds, during which time operators must see that their instruments are adjusted. At 10 o'clock and 50 seconds, seconds commence beating, and continue for 50 seconds. The word "switch" is then sent over the wire, and operators having electric clocks connect them immediately with the circuit known as number 9 wire. Ten seconds are allowed in which to make the connection. At 11 A. M., with one touch of the New York key, the hands on the different clocks are set to 11 o'clock. If they are fast or slow, they change all at once to the hour named.—*Albany Argus.*

INDIAN GRASS OR WOOD GRASS.

Our engraving shows a grass which will be recognized by many of our readers who hail from the prairie States, where it figures quite largely in the native pasture. Botanically, it is a sorghum (*Sorghum nutans*), and it is tall-growing in its habit, the stalks being from three to four ft. high, in favorable locations.

In order to show how grasses may vary in chemical composition and thus differ widely in economic value, we place side by side the proximate analysis of *Sorghum nutans* and *Sorghum Halapense* (green valley grass):

	Sorghum Nutans.	Sorghum Halapense.
Oil	1.57	2.25
Wax	.10	.61
Sugars	7.27	7.37
Gum, etc	3.75	5.14
Cellulose	36 70	25.15
Amylaceous do	27.25	25.87
Alkali extract	14 44	15.58
Albuminoids	3.29	13.18
Ash	5.63	4.85

The analyses were made by Dr. Peter Collier, chemist of the United States Department of Agriculture. The superior richness of the *S. Halapense* in oil, sugars and its notable increase of albuminoids, are plain evidence of its great comparative value. It has more gum also, which there is some reason to believe is convertible into sugar in the animal digestion. On the other hand the *Sorghum Halapense* has much less cellulose, which is indigestible and worthless. We gave an engraving of Sorghum Halapense in our issue of March 27, 1880, and it is interesting to compare their appearance in connection with this statement of their comparative composition.

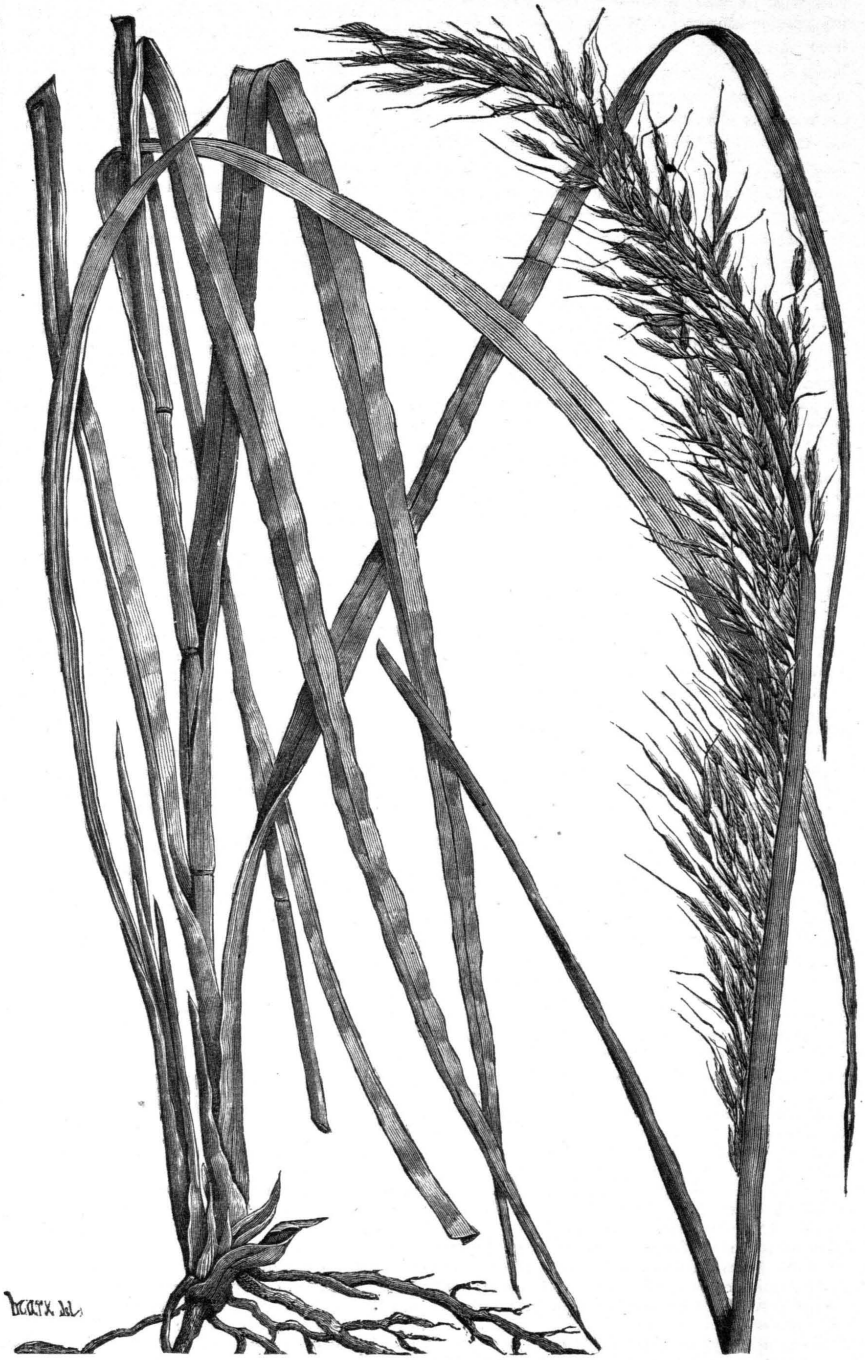
Sorghum nutans has not been generally considered of much value except as one of the grasses in the native pasture, although if cut early the hay is nutritious. The main trouble with it is that it grows rather scantily and does not cover the ground well.

The stalks are smooth, hollow and straight, and have at the top a narrow panicle of handsome straw-colored or brownish flowers, which are rather drooping when the seed is formed.

THE PROMOTION OF AGRICULTURE.—We learn from data sent us from the East that there has been organized an association whose object shall be "the promotion of agriculture by fostering investigation in science applied to agriculture." For the accomplishment of this object the members shall meet annually for the presentation and discussion of original papers on subjects embraced within the scope of this field of in-further investigation, either individual or co-opquiry, and for the consideration of plans for erative. Papers may be offered at the meetings through members by non-members, for reading and discussion, and for the indorsement of the association; and the association shall endeavor especially in this manner to encourage, as far as lies within its power, all exact investigation leading to advancement in agriculture. Membership is to be limited to a small number, say 40 or 50. New members are to be appointed by the association itself on such conditions as may be agreed upon hereafter. The papers read are to be published, under such conditions as may be devised by the association. We are acquainted with many of those named as members, and, from their standing as original investigators, we expect many valuable results will be attained by their labors. The Secretary is Dr. E. L. Sturtevant, at Waushakum Farm, South Framingham, Mass.—a thorough student, with a fine record of achievements.

HARDENING GLUE.—The only thing that will render glue perfectly insoluble is bichromate of potash. If you add a little of this in solution to the glue, and after applying the glue to the article expose it to the sunlight, it will become insoluble even in hot water. Better expose for a good while, say an hour or so, to make sure that all the glue has become insoluble.—*Boston Journal of Commerce.*

TERRESTRIAL MAGNETISM.—Prof. Balfour Stewart, in a letter to *Nature*, July 1, 1880, discusses the connection between auroras and magnetic storms. Since we have changes produced in stationary strata by a moving magnet, cannot the reverse be true? May we not have discharges produced in moving strata by a stationary magnet? The sun in this case would by convection currents produce changes in the atmospheric strata, and the earth as a permanent magnet would cause electric disturbances, which inturn would react upon terrestrial magnetism. Working upon this hypothesis Balfour Stewart has been led to the fact "that certain magnetic diurnal changes lag behind corresponding solar changes, just as meteorological changes would do," and he also states that his observations up to the present appear to show that an increase or decrease of solar activity corresponds to an increase or decrease of both magnetic and meteorological activity. The probability of a progress of magnetic phenomena from west to east, corresponding in character to a progress of meteorological phenomena is alluded to. Magnetic weather appears to travel faster, however, than meteorological weather.



INDIAN GRASS OR WOOD GRASS—*Sorghum Nutans.*

WHAT CAME OF JUMPING THE ROPE.—Dr. Peck, of Indianapolis, has amputated the legs of a young girl on account of decay in the bones, produced by excessive rope-jumping. He advises parents and teachers to prohibit this play under all circumstances.

THE LEICESTER SHEEP.

Our engraving shows a ram of the Border-Leicester blood, a race of sheep derived mainly from the famous Leicesters which came into prominence through the efforts of that pioneer in the modern art of breeding, Bakewell. Bakewell, it will be remembered, commenced with the original Leicester sheep, an animal of large frame, with heavy bone and coarse-grained meat, a flat-sided carcass and legs large and rough. It was a slow feeder and necessarily late in reaching maturity, weighing at two or three years, old 100 lbs. to 120 lbs. Seeing the necessity of obtaining in addition to the fleece, the largest possible increase of flesh in proportion to the food consumed, in the shortest period of time, he bred by selection most persistently and skillfully for these objects. This was commenced in 1755, and the result of Bakewell's breeding was the production of a sheep of such marked improvement that the receipts from hire of rams alone yielded $15,000 in a single season. The fame of Bakewell's sheep, the Dishleys as they were called, spread far and wide and importations of them were made for Gen. Washington's estate in Virginia. There a Dishley ewe crossed by a Persian ram gave rise to the Arlington race of long-wooled sheep, which became widely known.

The race of Border-Leicesters arose something more than a century ago, and early in the present century the improvement was carried farther by the use of Dishley rams by the border flock wasters. Now the border sheep have secured destinctive appellation and recognition at the English shows.

The characteristics of this breed, as given by Mr. John Wilson, are extraordinary aptitude to fatten and early maturity. He says: The most marked feature in their structure is the smallness of their heads and of their bones genrally, as contrasted with their weight of carcass They are clean in the jaws, with a full eye, thin ears, and placid countenance. Their backs are straight, broad and flat; the ribs arched, the belly carried very light, so that they present nearly as straight a line below as above; the chest is wide, the skin very mellow, and covered with a beautiful fleece of long, soft wool, which weighs, on the average, from six to seven lbs. On good soils, and under careful treatment, these sheep are currently brought to weigh from 18 to 20 lbs. a quarter at 14 months old, at which age they are generally slaughtered. At this age their flesh is tender and juicy, but when carried on until they are older and heavier, fat accumulates so unduly in proportion to the lean meat as to detract from its palatableness and market value.

The ram represented in the accompanying engraving, which is produced from a photograph, is from the Mertoun flock of Lord Polworth, in Berwickshire. The engraving does not indicate a pampered sheep, intended only for the show-yard; but the straight and broad back, the wide chest brought well forward, the well-sprung ribs and long quarters, the full and square rump, all bespeak an animal compact and symmetrical—a meat-maker of the highest order.—*Pacific Rural Press.*

THE floating of birds on and with the wind does not appear specially mysterious. It is now recognized that a breeze of air is a succession of denser and denser volumes, rushing in to supply the place of comparative vacuity, and thus to maintain pneumatic equilibrium. Passing along the surface of land or sea, this succession of densities possesses the properties of a wedge, tending to lift from the ground objects whose specific gravity is greater than that of air. Thus, on a windy day, thistledown, feathers, straw, paper, may be seen floating on the "wings of the wind;" and should the gale increase to a hurricane, trees, roofs and even cattle may be lifted from the earth. Inanimate objects being in this way capable of sustention, it is not surprising that a bird can adjust its wings in such a way as to appropriate to the full the floatative power of the wind.

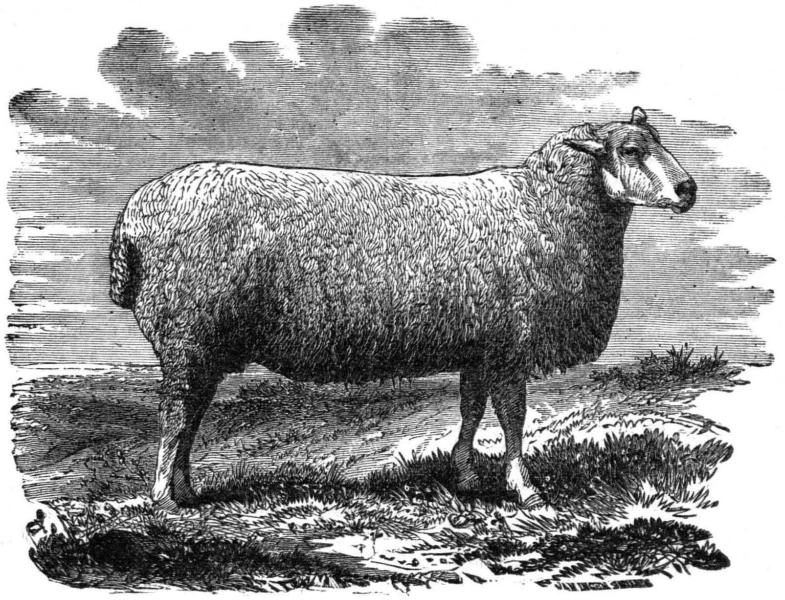
A PLEA FOR BOYS.

Owing to a slight indisposition we must forego the pleasure of writing our usual message, but would emphasize the wisdom contained in the following plea for the boys, for with all of our heresy upon the woman question, we believe in boys, and daily insist that boys have some rights that their sisters are bound to respect.

Our theme is not a new one; it can never be old. As long as one-fourth of humanity is represented by the irrepressible boy, so long will the happiness and well-being of the boy be of moment to all.

I shall preface what I am about to say by relating an incident, the facts of which came under my immediate observation.

A sister and brother nine and seven years old respectively, whose home was in the far West, came to spend the summer with their grandparents in New England. It was a large many-roomed house to which they came, and upon their arrival a carpeted room with dainty belongings was assigned to the little girl, while the boy—



BORDER LEICESTER RAM.

no less dearly loved by his grandmother—was given a chamber, airy and comfortable, but guiltless of ornament save the glorious rays of sunlight that waked the little sleeper each returning morning

Judge of the surprise of the family, one afternoon, at finding all the little fellow's possessions—his box of clothing, his fishing tackle, his balls, his top, his miniature canoe—transferred to his sister's room, he averring, upon being questioned, that he liked pretty and tasteful things as well as his sister did, and that he was not going to stay it that old, bare room.

Now we do not say that every mother can give her boys pretty carpeted rooms; but we do insist that the boys should have their share of whatever of grace and beauty the house affords. If the little sister has two pretty pictures in her room, let her give one of them to the brother. If she makes a dainty cushion for her own toilet table, let one equally pretty be made for that of her brother.

Then there are the boy's own treasures. Give him the privilege of arranging them in his own way. Doubtless it will be oftentimes a very individual way; but what of that? Do we not every day sacrifice our own tastes for fashion's sake—for friends? Surely we can do at least as much for our boys.

I have in my mind the memory of a boy just in his teens, who for the first time was to have a room by himself. With his mother's help his treasures were given each its place of honor or convenience. Most highly prized of all was a gun, the gift of an older brother. His taste claimed its installment on brackets on the wall of his room, and the mother, stifling her woman's fear of fire-arms, gave him her help in arranging it there. The look with which he thanked her will be a pleasant memory for years.

Let us do all we can for our boys. Let us "make home attractive" to them, not only by filling our houses with things beautiful and tasteful, but by making them feel that they, not less than their sisters, have a share in its arrangements.

When the echo of children's footsteps shall be no longer heard in the house, and the tired hands have more time to rest, we shall be glad to recall the eager, happy face of the boy 20 years ago, as he stood by our side while we put the last strong stitches in the cover of his ball, or fastened one more bob on his cherished kite.

In the cradle, in his first suit of clothes which launches him on the world as the individual boy, in the transition from "little boy" to "big boy," from the "big boy" to the youth—let us stand by him with our help, our counsel, and our prayers.—*The Woman's Journal.*

ENCOURAGEMENT OF TREE-PLANTING.—The other day the American Association for the Advancement of Science met at Boston, and among other things done it recommended the encouragement of tree-planting. A committee was appointed to memorialize Congress and the State Legislature in regard to the important matter of the cultivation of timber. Among the practical means for promoting this business the association recommended the passage of a law for the protection of trees planted along highways, and the encouragement of such planting by relieving them from highway taxes; and by the appropriation of money to agricultural and horticultural societies, to be applied as premiums for tree-planting and for prizes for the best essays, and reports on the subject of forest culture. One very important recommendation was the enactment of stringent laws against the reckless firing of forests—a practice which leads to enormous waste of timber on this coast. It ought to be checked by the imposition of severe penalties. The association also recommended the establishment under favorable conditions of model plantations, as a means of encouraging the general planting of trees and their preservation.

THE OLD AND THE NEW IN FARM ECONOMY.

He was a thrifty young farmer with a good wife, some capital, a healthy constitution and plenty of good Dutch courage. They hailed from Mercer county, Pennsylvania, and, for obvious reasons, we will call them Mercers. They came to Santa Clara county seeking a home and such prosperity as is almost always the reward of honest industry when directed by tact and judgment. Their experience is described as follows in the San Jose (Cal.) *Mercury:*

They bought a farm of 160 acres of gravelly land near the foothills. We say they, from the fact that in accordance with the old Dutch custom the man and frau counseled with each other before taking an important step. Richer land would have suited them better, but the richest land in our valley they learned was not the surest for crops, while the gravelly land, with good farming, is absolutely sure. The land they bought had been farmed for many years according to the old California system, which means shallow plowing and cropping with grain every year, year in and year out, and annually burning the stubble after the crop is havested. The former owners had practiced this plan thoroughly, it being about the only thing they were thorough in, and the system had so nearly ruined them that they were compelled to sell out and seek other and newer lands. The neighbors smiled when they learned that the Mercers had bought this farm, as though they thought a good joke had been perpetrated upon the new comers. Still, in the kindness of their hearts, they resolved to assist them with what they considered good advice. So when Mercer attacked the huge manure pile which had lain for years behind the stable, and grown larger by constant additions from it, and began to spread it around upon a good sized piece of land, they went over and asked him what he intended to do.

"Why," said he, "I am going to make a garden. You all have gardens, don't you?"

"Oh, no," said they, "peddlers bring us our vegetables and sell 'em cheap. This land won't grow vegetables, it's too dry." "Well," said Mercer, "I am going to plow this manure in deep and see what it will do.

"Do," said his neighbor, "it won't do nothin', you'll get your labor for your pains. You musn't plow deep; you see moisture comes up to the top of the hard ground, and there it stops, and if you plow deep, the roots of your crop won't reach the moisture, for all the moisture, will dry out from the loose ground."

"Mine gracious, it will!" said Mercer. "You say, don't spread manure and don't plow deep. In my country this is the principal part of farming, and I don't know any other way. I thank you. You mean to do me good, I know you do, and I thank you. I must try my way a while and if it don't work well, then I will try yours."

The Mercers have now been practicing the good old plan of farming they were brought up to for the last seven years, and a prettier farm, or more thrifty family it would be hard to find. He first tried summer-fallowing, but says that pasturing is more profitable, and now has his main farm divided in four fields, with passages leading from each to the barn yard which is also the watering place. In one of these fields each year he pastures all his stock (about 25 head); the next year he plows it, putting the stock in another field. He plows deep all the time, and gets all the manure he can, even buying and hauling it for some distance.

A MACHINE, by which 600 pails can be turned out daily, the sides of each pail being made in one piece, has been invented at Merrimacport, Mass. Round a block of wood shaped like a water pail, the machine cuts off a strip of the requisite thickness for a pail, and of the same length the block itself is. A piece of the strip, of the right length for a pail, is then cut off, the edges tongued and grooved, and a groove cut to receive the bottom.

MAKING AND PRESERVING CIDER.

As the cider season is at hand, the following suggestions taken from an article in the *Scientific American* may be of use to some readers: A pure, sweet cider is only obtainable from clean, sound fruit, and the fruit should therefore be carefully examined and wiped before grinding.

In the press, use hair cloth or gunny in place of straw. As the cider runs from the press let it pass through a hair sieve into a large open vessel that will hold as much juice as can be expressed in one day. In one day, or sometimes less, the pomace will rise to the top, and in a short time grow very thick. When little white bubbles break through it, draw off the liquid through a very small spigot placed about three inches from the bottom, so that the lees may be left behind. The cider must be drawn off into very clean, sweet casks, preferably fresh liquor casks, and closely watched. The moment the white bubbles, before mentioned, are perceived rising at the bung-hole, rack it again. It is usually necessary to repeat this three times. Then fill up the cask with cider in every respect like that originally contained in it, add a tumbler of warm sweet-oil, and bung up tight. For very fine cider it is customary to add at this stage of the process about half a pound of glucose (starch sugar) or a smaller portion of white sugar. The cask should then be allowed to remain in a cool place until the cider has acquired the desired flavor.

In the meantime clean barrels for its reception should be prepared, as follows: Some clean strips of rags are dipped in melted sulphur, lighted and burned in the bung-hole, and the bung laid loosely on the end of the rag, so as to retain the sulphur vapor within the barrel. Then tie up half a pound of mustard seed in a coarse muslin bag, and put it in the barrel, fill the barrel with cider, and add about a quarter of a pound of isinglass or fine gelatine dissolved in hot water. This is the old-fashioned way, and will keep cider in the same condition as when it went into the barrel, if kept in a cool place, for a year.

Professional cider makers are now using calcium sulphite (sulphite of lime), instead of mustard and sulphur vapor. It is much more convenient and effectual. To use it, it is simply requisite to add one-eighth to one-quarter of an ounce of the sulphite to each gallon of cider in the cask, first mixing the powder in about a quart of the cider, then pouring it back into the cask and giving the latter a thorough shaking or rolling. After standing bunged several days to allow the sulphite to exert its full action it can be bottled off. The sulphite of lime (which should not be mistaken for the sulphate of lime) is a commercial article, costing about 40 cents a pound by the barrel. It will preserve the sweetness of the cider perfectly, but unless care is taken not to add too much of it, it will impart a slight sulphurous taste to the cider. The bottles and corks used should be perfectly clean, and the corks wired down.

A little cinnamon, wintergreen, or sassafras, etc., is often added to sweet cider in the bottle, together with a dram or so of bicarbonate of soda at the moment of driving the stopper. This helps to neutralize free acids, and renders the liquid effervescent when unstopped; but if used in excess, it may prejudicially affect the taste.

IT is a curious fact, writes a missionary from China, that tobacco, sweet potatoes and Indian corn have all been introduced from America, and are now thoroughly domesticated here. As to the first, so cordially has it been welcomed that 9 out of 10 adult Chinese males smoke it. They do not chew. Within the last five years the artichoke, which in my boyhood was found with horse-radish in every farmer's garden in central New York, is being introduced in this region. It is pickled and eaten as a relish. Oddly enough, it is called foreign ginger. Sometimes we are asked how it happens that foreign ginger is not pungent.

SELECTING BROOD SOWS.

The *Berkshire Bulletin*, organ of the Berkshire Swine Breeders' Association, has the following: A brood sow should be a good milker. However good in other respects, if deficient in this, she should hardly be retained as a breeder. An abundance of milk for the first eight or ten weeks of their existence is the best preparation young pigs can have to fit them for profitable growth in after life. It is not always possible to decide with certainty whether or not a young sow will prove to be a good milker; but as with cows so with pigs—we may learn from observation and trial to know in some degree, judging from their general appearance, what to expect. Much will depend upon the dam and grand dam in this regard. Milking qualities in swine are as surely transmissible to progeny as in cattle. Thus it is as true of swine as of cattle, that this trait may be greatly improved by retaining only good milkers for breeders, as well as by feeding them when young with a view to their development as milk producers rather than as fat producers. For this reason, spring and early summer litters are usually the best from which to select young brood sows. They can be kept through the summer almost entirely on grass, which, if abundant and in variety, will make them grow nicely, and at the same time the exercise required in grazing will keep them in good health and thrift. By the time cold weather comes on, and corn is to be fed, they will have become nearly old and large enough for service. But even after this, continued care must be taken that too much corn or other fat-producing food should not be given them. We must, however, bear in mind that at this period all animals naturally lay up fat, which afterward goes to enrich the milk. Hence, while they should not be allowed to become over-fat, they should yet be so fat as to supply this demand of nature, and to retain the general health and vigor of the system.

When they have dropped their first litter, the most they will need for five or eight days will be cooling drinks and very little rich food. Wheat bran scalded and then thinned with cold water, to which may be added a handful of shipstuff or middlings, may be given. In ten days or two weeks the richness of the food may be gradually increased, great care being taken, however, both as to the quality and quantity, that these changes may not injure the health of the sow, or so affect her milk as to cause scours in the pigs. It is a very common mistake in feeding sows having young pigs to give them too much strong food when the pigs are quite young.

It is not until the pigs are some three or four weeks old that they really begin to tax the sow heavily. Then it is that the sow should be liberally and regularly fed on good, nutritious milk-producing food, and at the same time the young pigs should be taught to feed by themselves at a trough out of the reach of the sow. If thus managed, both sow and pigs are benefited. The strength of the former is kept up, and her disposition to produce an abundance of good, rich milk is so encouraged as to fix this as one of the best traits of her nature, while the pigs, by the extra feed given them, make a corresponding rapid growth, and that at a comparatively small cost.

Young sows brought up in the manner suggested, and thus cared for with their first litters, may be depended upon to do as well or better with their next, provided they have anything like fair treatment. In case, however, a sow fails to prove herself a good milker, after a fair trial, they should be replaced by one of better promise, unless for some special purpose it is thought best to retain her.

PRESERVING LEATHER.—To preserve leather hose, belting, etc., in good condition, use crude castor-oil, warmed, if possible, and freely applied. It increases the pliability of the leather and the cling of the belts, and does not become rancid. Rats avoid it. In hose it should be pumped in from the interior under considerable pressure, thus thoroughly filling the pores.

CORNELIA.

After months of earnest and somewhat thorough research we have amassed a surprising amount of facts, which prove beyond all possible doubt: First, that philanthropic endeavor on the part of woman renders her more loyal and helpful in her own home; and, second, that almost every woman who has achieved national or world-wide fame as a true mother has not lived a secluded, domestic life.

I make this assertion now without the slightest reservation, because I have a wealth of evidence, in well authenticated facts.

Passing by hundreds of illustrious examples, let me call your attention to the model mother the pet of masculine orators, the typical woman, the great model ever set before the imagination of girl-graduates—Cornelia, the mother of the Gracchi.

Now, tell me, my good gentleman friend—honest confession, now—didn't you suppose that Cornelia was a sweet household divinity, somewhat majestic to be sure, but, nevertheless, a woman with no thought of a mission other than to her own children.

Well, then, remember that Cornelia, the mother of the Gracchi, was a thoroughly educated, philanthropic, strong-minded, eloquent woman, who gave public lectures on philosophy in Rome, and was even more fortunate in her disciples than in her sons. Cicero says: "Cornelia, had she not been a woman, would have deserved the first place among philosophers." We say had she not been a wise philosopher she could not have been so royal a mother. It requires a rare combination of intellect and heart to be a wise mother.

Mrs. Hale, in her carefully prepared biographical sketch of Cornelia, says: "The whole life of Cornelia presents a beautiful character;" and, from the facts which are in our possession, we draw these inferences:

1. Cornelia must have been educated in a very superior manner by her father, for in no other manner can we account for her knowledge and love of literature; nor, for the fact, that while yet young she was regarded as worthy the most virtuous and noble men of Rome.

2. She must have been from the beginning a woman of fixed principles and undaunted courage; for in no other manner can we give a solution to her rejection of the King of Egypt, her unremitting care of her family, the high education of her sons, and the great influence she held over them.

3. She must have cultivated literature and the graces of conversation, for how else could she have attracted to her home the men of letters, and won the compliments of distant princes.

It is the same—like causes produce like results everywhere. Earnest study and loving philanthrophy enriches the heart of the mother, and blesses first and enriches most the home shrine, and thence overflows until it brightens and blesses the weary home-sick world.

Give us more mothers prepared to instruct the world in the true philosophy of life, and we will have more sons to be numbered with philosophers.

It was a grand inscription worthy the aspiration of every mother: Cornelia the mother of the Gracchi! But one can scarcely imagine one of those "Gracchi" boys commanding his mother to "keep silent" on any question of church or state.—*Mrs. Harbert in Inter-Ocean.*

The Mind.—There is no sculptor like the mind. There is nothing that so refines, polishes, and ennobles face and mien as the constant presence of great thoughts. The man who lives in the region of ideas, moonbeams though they be, becomes idealized. There are no arts, no gymnastics, no cosmetics which can contribute a tithe so much to the dignity, the strength, the ennobling of man's looks as a great purpose, a high determination, a noble principle and unquenchable enthusiasm. But more powerful still than any of these as a beautifier of the person is the overmastering purpose and prevading disposition of kindness in the heart.

HOW TO SELECT A HUSBAND.

It has been profoundly remarked that the true way of telling a toadstool from a mushroom is to eat it. If you die, it was a toadstool; if you live, it was a mushroom. A similar method is employed in the selection of husbands: marry him, if he kills you he was a bad husband; if he makes you happy he is a good one. There is really no other criterion. Some young men that seem unexceptionable, indeed very desirable, when they are single, are perfectly horrid as soon as they are married. All the latent brute there is in the heart comes out as soon as a sensitive and delicate being seeks her happiness in his companionship. The honeymoon lasts a very short time, the receptions and the rounds of parties are soon over, and then the two set down to make home happy. If she has married a society man, he will soon begin to get bored; he will yawn and go to sleep on the sofa. Then he will take his hat and go down to the club, and see the boys, and perhaps not come home until morning. If she has married a man engrossed in business he will be fagged out when he comes home. He may be a sickly man that she must nurse, a morose man that she must seek to cheer, a drunken man that she must sit up for, a violent man that she fears, a fool whom she soon learns to despise, a vulgar man for whom she must apologize—in short there are thousands of ways of being bad husbands and very few ways of being good ones. And the worst of it is, that the poor silly women are apt to admire in single men the very traits that make bad husbands, and look with contempt or ridicule upon those quiet virtues which make home happy. Men with very little personal beauty or style often make the wife happy—and sometimes quite the reverse. The number of ways of being a bad husband is almost as great as the number of ways of being ugly. No one can tell from the demeanor of a single man what sort of a husband he will be. However, she must marry somebody.

Honoring Mrs. Hayes.—Now that Mrs. Hayes is on this coast, and many of our people are making her acquaintance, they will be interested in knowing what they are proposing to do for her at the East. The Utica *Herald* says: Miss Esther Pugh, "the staunch Quaker Treasurer of the Hayes Fund Commission," at 54 Bible House, New York city, will receive contributions for a "temperance testimonial to Mrs. President Hayes for the noble stand she has taken for total abstinence while hostess of the White House." This testimonial is to take the shape of "a life-size portrait of Mrs. Hayes, to be painted by one of our best artists," and when finished to be placed in the White House. Every $5 subscriber will have an engraving of the portrait, and it is expected that the subscription will be so large that enough will be left over to serve as the nucleus of a fund named "the Hayes fund," to be employed in circulating total abstinence literature. Miss Frances E. Willard is President of the commission, and Felix R. Brunot, Mrs. Joseph Cook, Bishop Simpson, Bishop Jagger, Mrs. Gov. Fairbanks, Neal Dow and Gov. St. John, of Kansas, are among the members of the Hayes Fund Commission.

To Whom Honor Is Due.—Dr. Chapin, of New York, says: "I can not honor too highly the industrious mechanic, patiently using his hammer or his wheel. If he only sews a welt or planes a knot, he helps to build up the solid pyramid of the world's welfare. There is no doubt of his nobility over those who compose the feathery foam of fashion that sweeps along Broadway, who consider the insignia of honor to consist in wealth and idleness, and who ignore the family history by painting a coat of arms to cover up the leathern aprons of their grandfathers."

Queen Victoria has declared war on bangs. Time they were killed before.

WEDDING OUTFITS.

What an absurd idea it is that when a girl gets married she must have an enormous wardrobe, dozens of stockings, handkerchiefs and gloves, and bales of underclothing, the greater part of which will be yellow and out of style before she can use it. This great preparation implies that the girl has never had anything decent to wear before, or that she does not expect ever to get anything of the sort from her husband, depending on him only for her food and shelter.

It is the custom—and a very lamentable one—for the parents to supply the daughter's trousseau on her marriage, without any reference to her future condition in life, but in accordance with her own wishes, or the extent of her mother's desire to make a show. Many a bride has had her trunks filled with fine clothes and costly jewelry, but not a dollar she could call her own.

It is well to provide a girl with a good outfit, but it should be a suitable one, that will be of use to her in the future as well as in the present. Piles of underclothing are as unnecessary as a great number of dresses, for while the latter go out of fashion, the former grow yellow and rotten. A friend of mine, who has been married 25 years, tells me that she is still wearing the white skirts made for her trousseau. She had 28 of them, all elaborately trimmed, and has never felt able to afford to give them away and buy others, though the fashion in skirts has changed very materially since then, and they are gored now, while at that time they were made full, fuller, fullest.

In her anxiety about the selection of her outfit, the style and fabric of her dresses, the variety and fineness of her underwear, the young lady about to be married often wears herself down to such a condition that she is in no fit state to go through the trying ordeal of the wedding ceremony, the weariness of the reception which follows it as a rule, and the fatiguing wedding tour. Only yesterday a lady was telling me how ill her daughter was for weeks after her marriage, and the doctors said it was in consequence of the many hours she had bent over her needle "getting ready." Her mother said: "Hattie wished then that she had put fewer tucks in her white skirts, and less ruffling and embroidery on her dressing sacques." A fit of sickness was needed to teach her common sense, you see.

A cousin of mine, who was engaged to a naval officer, was obliged, owing to his being ordered away on a three-years' cruise, to be married much sooner than she had anticipated if she would not stay single for three years longer. She had but three weeks in which to make all her preparations and no time was lost. Her mother, sister, a dressmaker and herself were busy literally day and night sewing on the trousseau. The night before the eventful day she fainted three times while trying on her numerous dresses for the last time, to see that they were perfect in fit and draping. On her marriage day, when she should have looked her brightest and best, she was pale, wan, weary and hollow-eyed, and fainted during the long breakfast which followed the reception.

Half a dozen of each article of underwear is amply sufficient to start the bride of moderate circumstances in her married life, with a traveling dress (if she is to travel), a black cashmere for evening wear, a pretty wrapper, and two morning dresses. If she expects to attend any evening entertainments after her marriage, it is well to provide herself with a light silk or a Swiss muslin. This outfit is for the fall marriage. Some changes are necessary if the bride enters on her new life in the spring, and these will suggest themselves. It is hardly necessary to speak of gloves, hose and handkerchiefs, for these are a matter of course. It is reasonable to suppose that the young lady has at least a few articles of clothing already, which, being suitable for her single days, will not be unsuitable for her married ones.—*Florence H. Birney, in American Cultivator.*

FROM VERA CRUZ TO MEXICO.

After an absence of 22 years I revisited Vera Cruz. This little oriental city, hid away at the farther end of the Gulf of Mexico, is, in itself, not unattractive. Oriental I call it, for it is of Moorish descent, and its lineage is visible in its cupolas of white, rose-color and blue, overtopped here and there by Christian spires; in its houses painted bright red, yellow or blue; in its flat terraces, with their pyramidal ornaments. Cities are more enduring than men, and Vera Cruz has become young again, with its dwellings newly painted, its white bell-towers, its enameled cupolas, its new houses and monuments. There is a holiday air about it, and a faint Haussmann breeze has come across the Atlantic. The plaza, which, when I last saw it, was paved with angular stones, covered with filth and cut up with muddy brooks, is now a delightful square, planted with palms and other trees, robed in verdure, and paved with marble. In the middle we see a handsome fountain, while all around it are fine *cafes*, stores, the cathedral, the municipal palace, and other structures that vie with one another in giving it a fit surrounding. In the daytime the air is cool in the plaza; in the evening long lines of promenadors and of pretty Mexican ladies fill the walks. It is like one vast greenhouse.

The train left at 11:30 P. M., and during the night we traversed one of the most picturesque portions of the route. At daybreak we reached the plateau of Orizaba, and the prospect was delightful. On all sides rose mountains tinged with the brightest colors by the rising sun. The volcano of Orizaba commanded them all with its snowy cone. We sped through coffee plantations and vast fields of tobacco and bananas. We crossed ravines over venturesome iron bridges, meeting a fresh surprise at every turn.

From Orizaba we ascended by an easy grade to Maltrata, and then the train drawn by two engines made ready to mount the famous Cumbres de Aculzingo. We were now in the temperate, we were soon to be in the cold zone. The route lies before us describing long *detours* and ascending heavy grades; our two locomotives, puffing and blowing, and as it were exhausted, make their way amid the grandest scenery. In three hours we reach the plateau of the *tierra fria*.

In these three hours we made an ascent of 4,810 ft., that being the difference of elevation between Orizaba, which is 4,810 ft. above sea-level, and Esperanza, which is 9,620 ft. At the latter place we dined. Our route now lay over vast dusty plains like Arabian deserts. The *haciendas* were few and far between, while the stunted maize and the poor, sparse crops of wheat were evidence of the dryness of the soil. The region is deplorably bare of vegetation, but the bold lines of the mountains defining the horizon, the vastness of the plain, the peaks which here and there break its monotony, the dust-whirls seen rising on every side, give it a strange aspect, and impress upon it the character of stern desolation.

But the railway has changed the face of this plateau. We might almost say that here the railway is a foreign intruder (*s'y trouve depayse*); and it more than any other cause has made the region a solitude. We see no more the long convoys of mules that used to wend their way from Vera Cruz to Mexico, the lumbering wagons, the *arrieros* in picturesque costumes; no longer do we hear the silver bells of the *madrinas* (bell-mares). The little huts along the roadside where the muleteers were wont to quench their thirst, and the great *corales*, or yards, in which the mules were shut up at night, have disappeared.

The railroad stretches toward the northwest, and after passing Huamantla skirts the volcano of La Malinche, leaves Puebla about 20 leagues on the left, then passing through Apizaco it enters the Llanos of Apam. There we are in the land of *pulque*, the headquarters for the production of the wine of Mexico. On all sides are plantations of maguey (agave), and at every station are wagons unloading casks of the liquor so much liked by the Indians. This not very inviting looking beverage in color resembles a strong decoction of orgeat and water. It is thick, viscid, stringy, and has a rather strong taste of leather. It is said to be wholesome, and one becomes accustomed to it. It is consumed in enormous quantities in Mexico.

We next come to La Palma and then to Otumba, famous for the victory won by Cortes. Finally, leaving on the right the pyramids of San Juan de Teotihuacan, we arrive in the capital.

Mexico has undergone a greater change even than Vera Cruz. The Grand plaza, which formerly was bare of vegetation, is now a fine park with eucalyptus trees 100 ft. in hight, though planted hardly 12 years ago. Handsome houses, showing novel architectural forms, have sprung up everywhere; new quarters now occupy the place of demolished convents; pretty squares surprise the returning traveler at street crossings, and the magnificent promenade constructed by Maximilian, and which is to be extended as far as Chapultepec, would do honor to the proudest capital.

So, too, the toilets of the ladies and the costumes of the gentlemen are changed for the better, and are now more costly, perhaps, but they have lost in picturesqueness the nearer they have approached the fashions of Europe.—*M. Charnay, in North American Review.*

EXPANSION OF GLASS BY HEAT.

Select a straight glass tube 50 or 60 centimeters in length and 1 or 2 centimeters in diameter. Place it transversely in front of a fire, in a horizontal position, properly supported near its two ends on two horizontally-adjusted rods of hard, smooth wood of about the same diameter as the tube; the glass tube will gradually roll towards the fire. Now let the supporting rods be transferred to either side of the center of the tube, so as to support it near its middle; the tube will now gradually roll from the fire.

It is scarcely necessary to remind the reader that the greater dilatation of the glass on the side of the tube which is nearer the fire renders it curved, with the convexity next to the source of heat, so that, when supported near the ends, the falling of the central parts of the curved tube rolls it towards the fire; but when supported near the middle, the falling of the ends of the similarly curved tube rolls it from the fire. These experiments, it is evident, succeed better when the cold tube is first adjusted near the fire than when it has been so long exposed to the action of the heat as to have become heated throughout its mass.

It seems that about the year 1740 this behavior of glass tubes under similar conditions was noticed by Mr. C. Orme, of Ashby de la Zouch, while heating some barometer tubes. The Rev. Granville Wheler, who carefully verified the experiments of Mr. Orme, very correctly ascribes the phenomena to the distortion of the tube due to the action of heat (*vide* Philadelphia *Transcript*, No. 476). Nevertheless, in the United States this behavior of glass tubes, when placed before a fire, has been frequently classed among the unexplained mysteries of glass! As recently as 1865, Mr. Deming Jarves, of Boston, in his little volume entitled "Reminiscences of Glass-Making," p. 10 (2d ed., N. Y., 1865), refers to the phenomena, but with not one word of explanation. In fact, not long ago some of our semi-scientific journals characterized these phenomena as mysterious and inexplicable. Hence I have for the last 20 or 30 years employed such experiments, not only as exhibiting visible manifestations of the expansion of glass, but also as affording an instructive and significant illustration of how completely the most obvious mechanical results may be overlooked or obscured under the inspiration of the propensity to seek for the marvelous in nature!—*John LeConte, in Nature, August 5th.*

AN iron church was sent from London for the Esquimaux in 1877, and after being two years on the way was erected last October. Eight Esquimaux have recently been baptized in it.

THE CAUSE OF PERPETUAL SNOW.

Dr. James Croll, in the current number of the *American Journal of Science and Arts*, says the reason why snow at great elevations does not melt, but remains permanent, is owing to the fact that the heat received from the sun is thrown off into stellar space so rapidly by radiation and reflection that the sun fails to raise the temperature of the snow to the melting point; the snow evaporates, but it does not melt. The summits of the Himalayas, for example, must receive more than 10 times the amount of heat necessary to melt all the snow that falls on them, yet in spite of this the snow is not melted. Notwithstanding the strength of the sun and the dryness of the air at these altitudes, evaporation is insufficient to melt the snow. At low elevations, where the snowfall is probably greater, and the amount of heat received even less, the snow melts and disappears. This, Dr. Croll believes, must be attributed to the influence of aqueous vapor. At high elevations the air is dry and allows the heat radiated from the snow to pass into space, but at low elevations a very considerable amount of the heat radiated from the snow is absorbed by the aqueous vapor in the atmosphere. A considerable portion of the heat thus absorbed is radiated back on the snow, and, being of the same quality as that which the snow itself radiates, is for that reason absorbed by the latter. The consequence is that the heat thus absorbed accumulates in the snow till this is melted. Were the amount of aqueous vapor possessed by the atmosphere sufficiently diminished, perpetual snow would cover our globe down to the sea shore. In a like manner the dryness of the air will, in a great measure, account for the present accumulation of snow and ice on Greenland and on the Antarctic continent. These regions are completely covered with snow and ice, not because the quantity of snow falling on them is great, but because the quantity melted is small. And the reason why the snow does not melt is not because the amount of heat received during the year is not equal to the work of melting the ice, but mainly because of the dryness of the air, the snow is prevented from rising to the melting point. In places like Fuego and south Georgia, where the snowfall is considerable, perennial snow and ice are produced by diametrically opposite means, namely, by the sun's heat being cut off by clouds and dense fogs. In the first place, the upper surfaces of the clouds act as reflectors, throwing back the sun's rays into stellar space, and in the second place, of the heat which the clouds and fogs absorb, more than one-half is not radiated downward on the snow, but upward into space. And the comparatively small portion of heat which manages to reach the ground and be available in melting the snow is insufficient to clear off the winter's accumulation.

DISEASE ORGANISMS.—The organisms described by Pasteur as the origin of epidemics and contagious disease are so minute and few compared with the multiplying swarms of bacteria, etc., pervading all generating solutions, that it becomes necessary to provide a means of eliminating the masses of infusoria from solutions to be studied under the microscope. These microzoa haunt even the clearest drinking water at times, and it becomes highly important to easily determine their presence. M. Certes (Proceedings Acad. des Sciences) suggests the use of osmic acid as a sure means of killing them without destroying their tissues. He dips a glass rod into the solution to be examined and then into a 1½% solution of the acid; washing this in a narrow test tube of distilled water, it is easy to collect what is necessary for examination. There are certain precautions to be taken as to cleanliness and time of immersion. By the use of a mixture of Paris violet in diluted glycerine, he finds it possible, by uniform difference of tint, to easily distinguish cellulose, amylaceous matter and the vibrating cilia.

CANDY MAKING AT HOME.

BY HILMAN.

It is necessary to observe certain rules in order to make good candy, such as is made by confectioners, some of which cannot well be observed by any except a professional candy maker. Still, excellent candy can be made at home, and I will give rules for making that which can be done there easily.

Take for instance the old-fashioned molasses candy of our fathers. A medium priced molasses should be used, as from it one can get a certain flavor that cannot be obtained from the highest priced articles, but do not use a black or smoky kind. To a pint allow a spoonful of vinegar and a tea-spoonful of saleratus, the latter not to be added till just before it ss taken from the stove. Cook slowly, stirring to prevent burning. After boiling twenty minutes try it by dropping it in cold water. If it snaps it is done. Flavor if desired, put in the saleratus, stirring hard; take off immediately and pour on a buttered dish. As soon as it is possible to handle it, take it from the dish, butter or flour the hands and pull it rapidly back and forth, as long as it is possible to do so. This makes it light colored and tender. Confectioners use an iron hook driven in the wall, to assist them in pulling it, and this is a valuable adjunct, if it can be obtained. When it becomes so hard that you can no longer work it, pull the sticks to the desired length, and cut with scissors. Don't use a knife, I beg of you, for scissors work so easily. I always cut it into pieces about an inch long, as they are so much easier to handle. I will now give some long tried recipes.

Confectioner's Molasses Candy.—One pound of white sugar, one cup of nice molasses, one-half cup of water, a heaping teaspoonful of cream of tartar. Boil "to the snap," pull several minutes, and cut as before. Some prefer it boiled less—then it makes "Soft boiled molasses candy."

Scotch Butter Candy.—One pound of sugar, one-half pint of water. Boil as hard as possible without graining. When done add a half cup of butter, and lemon juice for flavor, if desired. Put on a buttered dish, or better, a marble slab, and when partly cool, cut with a knife into small squares; and when cold a slight tap will break them off.

Chocolate Candy.—One-half cake of Baker's chocolate cut fine, one cup of molasses, three cups of sugar, one cup of water, and a piece of butter the size of an egg. Boil till it hardens in cold water, but not so hard as molasses candy, add one-half teaspoonful of saleratus. Pour on a buttered dish. Pull and cut as before.

Chocolate Caromels.—One quart of moist brown sugar, one-half cake of Walter Baker's chocolate, one cup of milk, one-half cup of butter. Boil about twenty minutes. Turn it on a buttered dish, spread it about half an inch thick, with a wet knife to make it glossy, and when partly cold, cut with a thin wet knife into small squares as directed for the butter scotch. Try them young people.

Cocoanut Taffy.—Two cups of brown sugar, four tablespoonfuls of molasses, two tablespoonfuls of vinegr, two tablespoonfuls of water, piece of butter the size of an egg, and one cup of coarse grated cocoanut. Boil till it hardens in cold water. Drop it in small cakes on a buttered dish, or cut in squares.

Cocoanut Drops or Cakes.—Grate a cocoanut and weigh it and add half the weight of powdered sugar, and the whites of three eggs, cut to a stiff froth. Stir well. Make into small pats and put on a well buttered tin. Bake fifteen minutes in a slow oven. (The two last are the same as those of the same name sold in the shops.)

Chocolate Cream Drops.—For the cream, boil two cups of white sugar in one-half cup of milk for five minutes. Add one teaspoonful of vanilla, then beat till stiff enough to make into drops.

For the chocolate, take three-fourths of a cake of chocolate, grate and moisten with a spoonful of milk. Steam it over the teakettle. Drop the cream when hard, one at a time into the melted chocolate, using a fork or wire to handle them with. If this be done quickly they will be coated with the chocolate. Put them on a buttered dish.

Fig Candy.—One pound of sugar, one pint of water. Boil over a slow fire, and when done add a small piece of butter, and a few drops of water, and then turn it over split figs. Do not boil as hard as for common sugar or molasses candy.

"THE CALIFORNIAN" FOR NOVEMBER.—Readers of "The Californian" will find the November number a very attractive one. The issue opens with an article by Joaquin Miller, in which he gives a humorous account of his stock speculations in Wall Street. This article he calls "The New Napoleon," in tribute to Jay Gould, whose character he reviews. Henry D. Wolfe has an article on "The Chinese Army," which is timely, in view of the misunderstanding between China and Russia. There is a variety of other sketches and articles, besides the poetry from E. R. Sill, John Vance Cheney, Milicent W. Shinn, and Chas. H. Phelps. The departments are well filled, and the number as a whole is very complete.

Never does a man portray his own character more vividly than in his manner of portraying another's.

The *Gazette* notes the following samples of grain sent into the N. P. R. R. offices at Colfax: A bunch of white winter velvet wheat raised by John LaDow, of Cedar creek. It was sown about December 5th, 1879, and averaged sixty bushels to the acre. F. A. Davis, of Tennessee Flat, furnishes some little club, sown October 20th, 1879, and harvested August 12th, 1880, which yielded 57 bushels per acre; also some big club, sown October 15th, 1879, and harvested on the 12th, of August, 1880, the yield being 50 bushels per acre. The heads of this variety vary in length from 3½ to 4½ inches. The heads of all seem to be well filled. James S. Davis, of Steptoe, sent some little club, fall sowing, which turned out 50 bushels per acre; also some spring sowing of the same, producing 45 bushels per acre. Chile club, spring and fall sowing, each averaging 40 bushels.

E. J. Northcutt, who lives on the Snake river hills, near Wawawai, left a bundle of wheat which was sown about the middle of November, 1879, and harvested between the 1st and 5th of September of this year, and it is estimated that the yield will be in the neighborhood of seventy bushels per acre. The seed was brought from western Oregon about five years ago by Mr. Northcutt, the variety of which is unknown. In the absence of a name, the neighbors have christened it the "Northcutt improved." Mr. Northcutt had twenty acres of this wheat this season, the sample left the *Gazette* being an average of the crop. It requires only about 25 to 30 pounds to seed an acre. Judging from the samples, each grain of wheat produced about 36 stalks with heads.

ORANGE WOOD on Crab Creek, W. T., had a yield of 400 bushels of potatoes to the acre, and Australian white wheat sowed May 7th and harvested August 15th, 45 bushels to the acre.

THE Northern Pacific Railroad's upper terminus at present is located at Ainsworth about 25 miles above Wallula. From there to the different towns along the road, the distance is as follows: To Paha, 75 miles; Ritsville, 85 miles; Harrison, 96 miles; Sprague, 108 miles, Cheney, 133 miles; Spokane Falls, 149 miles.

OREGON OAK AX HELVES.

A package of these very fine oak ax helves among the freight on the Cascade boat, a few days ago, marked for Goldendale, led to a discussion with one of Portland's most enterprising furniture manufacturers respecting the value of this kind of timber. Its fine grain and rich color, and smooth finish, its toughness and strength and tension all stamp it as first-class timber. His purpose is to make one or more oak sets to test the market and introduce the style. Oregon and Washington ash and maple have already won a fair fame in house finishing and furnishing. An arrest has been put upon the wholesale destruction of ash and maple forests for wood, or merely to clear the land. This lumber is worth $40 and $50 per M for furniture. Its value in furniture is five times that sum—$200 to $250 per thousand feet. This is the value which manufacture adds to our raw materials. Seventy-five per cent is what we pay for the labor of others, when we import such house furnishings. Those who use our own raw lumber and work it up add this sum to the current wealth of the community. They employ the artisan and assure him the support of his family. They invite him to come and make his home among us, and make it possible for him to do so. They give his children a chance to learn trades and be industrious. They so far abate the hoodlum evil. They promote a healthy social condition. They add a large per cent. of value to our forests and give help and hope to the owners. They make a home market for produce, and thus aid the farmer, orchardist and gardener. Town and country already begin to thrive from such manufactures. Oak as furniture lumber will add perhaps ten or even twenty per cent. more to the value of these productive enterprises. The huge trunks and limbs of the older oaks, found in Marion, Washington, Yamhill, Polk, Benton, Linn and Lane counties, can be wrought by machinery into fine and durable furniture. The rich grain of the wood will reveal perhaps as many varieties as the ash.

OAK CHAIRS.

These are imported at large cost. Twenty-five hundred dollars a month are now paid by importers of these oak-frame, cane-seated chairs. Our grub oak is better than that in the imported chairs. It only needs skill and machinery to supply the home market and to become an export.

OAK SPOKES AND FELLOES.

Carriage makers admit that selected Oregon oak is equal in toughness and strength to eastern oak, but it is not much used in their business, because it is not fitted by machinery for use. Hand-made spokes and felloes and helves cannot compete with those turned out from eastern shops. This excludes Oregon oak makes it marketable only for wood. Thousands of acres of these thrifty grub oaks are annually cleared to raise more wheat; but the oaks will be worth more standing than the wheat, as the black walnut forests of Indiana and Illinois would now be worth more than all the crops raised on those lands. This waste of timber is an evil without a remedy. Once destroyed it is gone forever. New England has been stripped of its white pine forests, and now its lumbermen search the Canadas for supplies. Its massive oaks for shipbuilding are also gone for the most part. Its smaller forests are fading away but the manufacturer turns these into gold, making from a few trees a large income. This is the true method for our manufacturers. *Rev G. H. Atkinson in Oregonian.*

THE PUGET SOUND LUMBER MILLS.

The gigantic forests of Puget Sound have fed for more than a quarter of a century ravenous saws, and filled hundreds of ships and still the hum goes on, still the teeth of steel sink into the trunks of huge trees which have been dragged from valley and mountain slope in answer to the insatiable demand of man, and still ships laden with the spoil outride wave and tempest, and bear the products of the forests of Washington Territory into foreign ports. In a financial point of view

THE LUMBERING INTERESTS

Of the Sound are vast; in a commercial view these interests reach to the ports of China, Mexico, California and the islands of the sea; in a local view they hold out the banner of welcome to sturdy, honest labor and build hundreds of homes. A description of one of these bustling, noisy, milling ports suffices for a description, with slight variation in detail, of all. Each one is pervaded by the busy hum of industry; each has its mammoth mountain of sawdust in the foreground, its straggling piles of unsightly slabs, its huge piles of various kinds of lumber, its great

BOOM OF DRIPPING LOGS,

Its ships loading at the wharves, its new vessels upon the stocks, while over each and all floats the resinous odor of new lumber and the eternal din of the remorseless saws as they devour with noisy gusto huge relics of the forest primeval. Three hundred thousand feet per day is the record which the Port Ludlow mill will reach when the new building is completed. The Puget Mill Company here expect to realize the proud boast of having the largest saw mill in the world. The work of putting in the foundation for this structure, building wharves, etc., is going on. In the shipyard, a handsome pilot schooner just ready to launch, a beautiful pleasure yacht approaching completion, and the

KEEL OF A BARKENTINE,

140 feet long, recently laid, indicate the industries in this line. The force of men employed has a wide range. The sturdy axemen who locate camps in the depth of the forest and fell trees throughout dripping gloom of a northwest winter; the teamsters who drag the unwieldy trunks to the water side, the raftsmen who steer the logs down over rapids and through tortuous channels to the waters of the Sound, and thence by easier sailing until safely secured in the

BOOM AT THE MILL;

The men with pitch begrimed hands and garments who bring them in reach of the saws and gauge and convert them into lumber; the hands that bear this into the yards and load it into vessels, and the crews that work these last over stormy seas to destined ports, all bear their share in the prosecution of this vast and important industry, while over all the financial wisdom, that establishes and directs these varied movements, towers, making for itself a competence while giving employment to hundreds who can only labor when directed by a sagacity more penetrating than their own. The

CHIEF DANGER

In filling the wholesale lumber demand is that the forests of Western Washington will be swept from the face of the earth. A contemplation of the inroads made upon them during a third of a century suffices to foreshadow the fate that awaits them if greed does not give place to a wisdom that would stay its rapacity.—*Olympia Standard.*

BETWEEN A MARRIED COUPLE.

"Take me to to the opera to-night, *dear*."

"I am afraid I can't, *pet*."

"Why not, *love*?"

"I'd rather not, *sweet*."

"But why not, *darling*?"

"Because I can't afford it, *precious*."

"Why can't you afford it, *Mr. Smith*?"

"Because it costs too much, *Mrs. Smith*."

"Costs too much! Why the Browns and Joneses go ever so many times a week, *man*."

"The Browns and Joneses are fools, then, *woman*."

"You needn't be more common than you can help, *sir*."

"I don't mean to be, *ma'am*."

"If *you* won't take me, I'll go all the same, *husband*."

"I think not, *wife*."

Here they found they could call one another nothing worse, so dropped the subject.

A three-cent stamp becomes a sent stamp after you have mailed your letter.

THE ROOT OF ONE EVIL.

AUGUSTA ALLEN.

Not all in vain have the great pleading eyes of the poor abused horse looked into the faces of humane men and women. Not in vain have his shrunken sides and trembling limbs appealed with mute eloquence to human sympathy.

The thinking world is at last aroused not only to the wrongs of the horse, but to those of all dumb slaves of cruel man, and hands are stretched, in pity, for aid of all these suffering creatures.

Still, while over all the land, societies are forming for the prevention of cruelty to animals, thus far they are simply palliative—they have not yet reached down to find the causes which underlie this mighty evil, and which supply it with the elements of growth.

It is my purpose to write only of the one most prolific source—the cruelty of children.

How saddening the thought that in the child-heart, so full of all that is pure and best, should spring this germ of wickedness! How humiliating the fact that it should continue to grow, unchecked by parent or guardian, and spread its poisonous influence through the earliest years of childhood!

Yet so it is. Not only is the germ allowed to grow, but circumstances most favorable to its development are thrown around the child, even in infancy, by members of the home circle. Who has not seen a gleesome babe, with pretty hands plunged deep in the curls of some screaming little brother, while parents, delaying in the pride of their hearts the extrication of the little martyr whose shrieks serve only to increase the delight of his tormentor, laughed at their youngest darling in this cunning display of his strength and merriment?

It is a common thing to see living puppies and kittens given into the hands of babies for the sake of quiet. Quiet purchased at what a price! See the sturdy little hands tearing at the soft fur! See the pink finger-tips pressing hard into bright little eyes, eyes filled with mute anguish! See the strong fingers clutch the slender throats; shutting off, perhaps forever, the heaven-bestowed life! It is at *this price,* parents, that your children are *amused?* Meanwhile the germ is growing. As the child becomes older, the flies upon the window serve as keepers of the peace. "Let him alone—he doesen't eat the flies, and they please him."

Does not eat them, indeed! I wish he did, for then there would be some excuse for his wholesale slaughter. So the tiny creatures are denuded of wings and legs. The torture goes on, and—the pet of the family is pleased.

A step further on and the little one seek his own victims out of doors as well as within. What room now for exercise of this uncontrollable passion! Many and varied in character are the creatures weaker than himself; or if stronger, so thoroughly subdued as to be subject to his tyranny. Parents are too busy, too fond, or too careless to realize the state of affairs, and so, fed from rich sources, *the germ grows.*

Of members of the "Humane Society," how many, who are most conscientious and most faithful in public works, have little ones in their homes indulging, all unchecked, in these cruel pastimes. I have seen children of most moral parents pin, with infinite satisfaction, beetles, bugs and flies to the desks in the school-room, or to boards upon the play-ground. I have seen snowy pigeons tossed into the air and jerked suddenly back with a cord cutting sharply into the flesh of tiny wing or leg. I have seen faithful dogs most cruelly beaten, for no offence by their little masters.

I have known a boy to tantalize his little sister by hanging her pet kitten by the neck to a tree, and then letting it down again, only to renew the sport.

Many such sights as these I have noted, and that, too, among so-called good children, the pride of fond parents. While such customs exist in the homes of the people, all the humane societies that the world can produce can never check the mighty evil, which fills all good hearts with dismay.

While cruelty and tyranny are developed from the cradle upward, there can be little hope of reforming the full grown tyrant. His public deeds may indeed be punished, but in secret, while the world sees not and there are none to help, the weak must suffer on in agonized silence.

German manufacturers have found another use for paper. They make stoves of that material, in which the fire blazes cheerfully without the slightest injury to the paper enclosing it.

A Worthy Scheme.—R. H. McDonald, Esq., a well known ex-druggist from Sacramento, and now of the Pacific Bank, San Francisco, who amassed an immense fortune from the sale of Vinegar Bitters, offers to donate the sum of one hundred thousand dollars towards the founding of a Christian (unsectarian) university in the city of San Francisco, provided the different Christian denominations will contribute a like sum towards the same object. We knew Mr. McDonald in our boyhood days, and even then when fortune had as yet not showered her gifts on him so lavishly, education was one of his chief hobbies. We hope he will live to see his life's dream realized.

GRASS STAIN REMOVED.

I thought grass stain was hopeless. I have asked experienced people several times if anything would take the stain of green grass from children's clothes, but without gaining the desired information until within the last month. Lo! boiling water will remove the color. Pour boiling water through the stain and it sets the green coloring matter loose, rinsing it away. I tried it on a large stain upon the front of my little girl's white dress, and easily removed every trace of the grass, rubbing it a little in the hot water. Grass stain, after washing with soap-suds, makes a dirt-colored mark, and remains an ugly blot on children's white clothing.

IRON RUST STAINS.

Squeeze lemon juice into a cup, add a pinch of salt, and rub the stain in this. Then wash in clear, tepid water. Sponge goods that cannot be rubbed. Lately I saw a black cashmere dress badly stained with yellow spots of iron rust, on the black silk trimming as well as upon the cashmere. The color was entirely restored by sponging with lemon juice and salt.—[With some blacks the matter would be made worse. A piece of the material having iron rust should be tried first.—Eds.]

Prejudices are like rats, and a man's like a trap; they get in easily, and perhaps can't get out at all.

No man should be so much taken up in the search of truth, as thereby to neglect the more necessary duties of active life; for after all is done, it is action only that gives a true value and commendation to virtue.

No less than six nations are now engaged in Arctic explorations, chiefly by means of advance stations. Denmark, Russia, Austria, the United States, Germany and Holland, all propose to establish stations in the Arctic regions as a basis for future research.

One of the most meritorious displays at the Mechanics' Fair was made by C. H. Meussdorffer, the Hatter. Of course the limited space allowed to each exhibitor made it impossible for Mr. M. to show one fiftieth part of samples even of his immense stock. To get anything like a fair idea of the immense business transacted in the line of hats in this city, one must visit Meussdorffer's hat establishment. His stock embraces every style, variety and grade of headgear for men and boys, from the 75c wool hat to the $10 silk or fine $20 beaver and plush. The greatest advantage in purchasing at this establishment is, that no article is misrepresented.

A new industry in this State is just being started by C. H. Myers, Esq., proprietor of the Oregon Pottery and Terra Cotta Works at Oregon City. Besides manufacturing the usual articles of pottery and drainpipe, Mr. Myers is now turning out some very elegant terra cotta flower vases and stands. A great deal of money has heretofore been sent out of Oregon for these articles. Mr. Myer's enterprise will be the means of keeping the money here.

Our readers desire that their boys should be possessed of a thorough business education. We can cheerfully recommend White's Business College to them. The institution is under the personal supervision of the proprietor, Mr. W. Lynn White, one of the most successful teachers, and without a shadow of doubt, the best penman on the Pacific Coast.

The Albany saw mill is running on full time to keep ahead of its orders. The proprietors, Messrs. Allen, Robinson & Co., are live business men, know the wants of the market, have a corps of skilled workmen and superintend and work at the business themselves. They are therefore successful.

Dr. B. H. Alden, dentist, who has been spending the summer in Walla Walla, expects to return to Portland for the winter and resume practice here. The location of his office will be announced in our columns as soon as his rooms are fitted up.

J. G. Durner & Co. have moved into their elegant store, S. E. cor. of Fifth and Morrison Sts., directly opposite their former location. The place will still be known as the Postoffice Store, and a full stock of choice confectionery and fine fruits can always be found there. This firm is also fully authorized to receive subscriptions for THE WEST SHORE at publisher's rates.

The card of W. H. Grenfell, Esq., general forwarder and truckman, appears in this issue. In our dealings with Mr. G. we have always found him a strictly reliable gentleman, and knowing him to be very careful, we take pleasure in recommending him to our readers.

The Farmers' and Mechanics' One Price Cash Store at Albany, conducted by Mr. J. M. Nolan, will be found an especially desirable place for Linn county farmers to make their purchases at. The proprietor is accommodating and reliable, and keeps a full stock of everything for gentlemen's and boys' wear.

F. Bickel, who has been established in the manufacture of candy in this city for a number of years, is still in the field, and for the coming Holidays will be prepared better than ever to supply the trade at greatly reduced rates.

A very good article of rock, suitable for walls and much superior to anything now used for the same purpose in this city, is being taken from the quarry of Frank Wood's. near Albany. Rain, frost or snow have no effect whatever on the rock. Mr. Wood is prepared to contract for walls, fences, etc., and warrant them weather-proof.

NOW READY.—That wonderful book, Dr. B. J. Kendall's cure and treatment of the horse. It is said to be the most valuable book of the kind ever published. We will mail a copy to any address on receipt of 25 cts. Address WEST SHORE, Portland, Oregon.

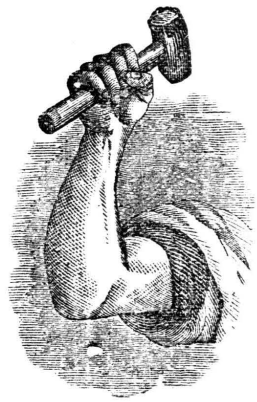
FASTEST TIME, 2-11.—No horse has ever made fast enough time but what it will be liable to be beaten sometime, for Kendall's Spavin Cure is sure to limber up the joints and leave thousands of spavined horses as sound and limber as colts; and it has been used with such remarkable results for every kind of blemish or lameness on beast or man, that every person owning a horse with stiff joints, or any blemish, should use it. Read advertisement for Kendall's Spavin Cure.

Haffenden Bros. at Albany and Roseburg, make a specialty of groceries. They have a most complete stock in their line, and always keeping up with the markets, they are enabled to offer special inducements to purchasers. By all means give them a call.

E. B. Clements has again taken charge of the livery stable at Oregon City. It is now located on Main street, directly opposite Pope & Co.'s stove store. Mr. Clements has some very fine stock and substantial wagons which can be rented from him at reasonable prices.

FARMERS AND MECHANICS' STORE.

ONE PRICE TO ALL!



To the People of Oregon and W. T., and the Patrons of the Farmers' and Mechanics' Store in Particular:

Every nation, state and municipality has its motto; every society has its slogan. Under it they either prosper or decay just in such proportion as they permit their existence to be influenced thereby. Because of the tenacity with which this great country clings to the doctrine of individual rights and liberty, has the motto, "*E Pluribus Unum*," the real significance of which the revolutionary sires intended to convey to posterity, because of the faithfulness of these people to their motto, does the people prosper. We have chosen as our motto,

"ONE PRICE FOR THE RICH AND THE POOR,"

And if we may be allowed to attribute our success to any one thing more than another, it is certainly to the fact that as yet we have not deviated from the rule laid down at the outset. Men may make professions, but they go for naught unless they can prove their sincerity to the satisfaction of the public. We have done this, and we have so scrupulously observed faith with the public that we have but to announce our rule or policy without being doubted about their genuineness. Other parties in our line of business may possess the ambition of aping us in establishing rules, whereby the interests of the purchasers are supposed to be protected as well as those of the sellers, but when once put to the test they betray the hypocrisy, equalled only by their impudence, in appropriating to themselves credit which is entirely due to others. We let the public judge the justice of our remarks.

FARMERS' AND MECHANICS' STORE.

ONE PRICE TO ALL!

183 FIRST STREET, PORTLAND, OR.