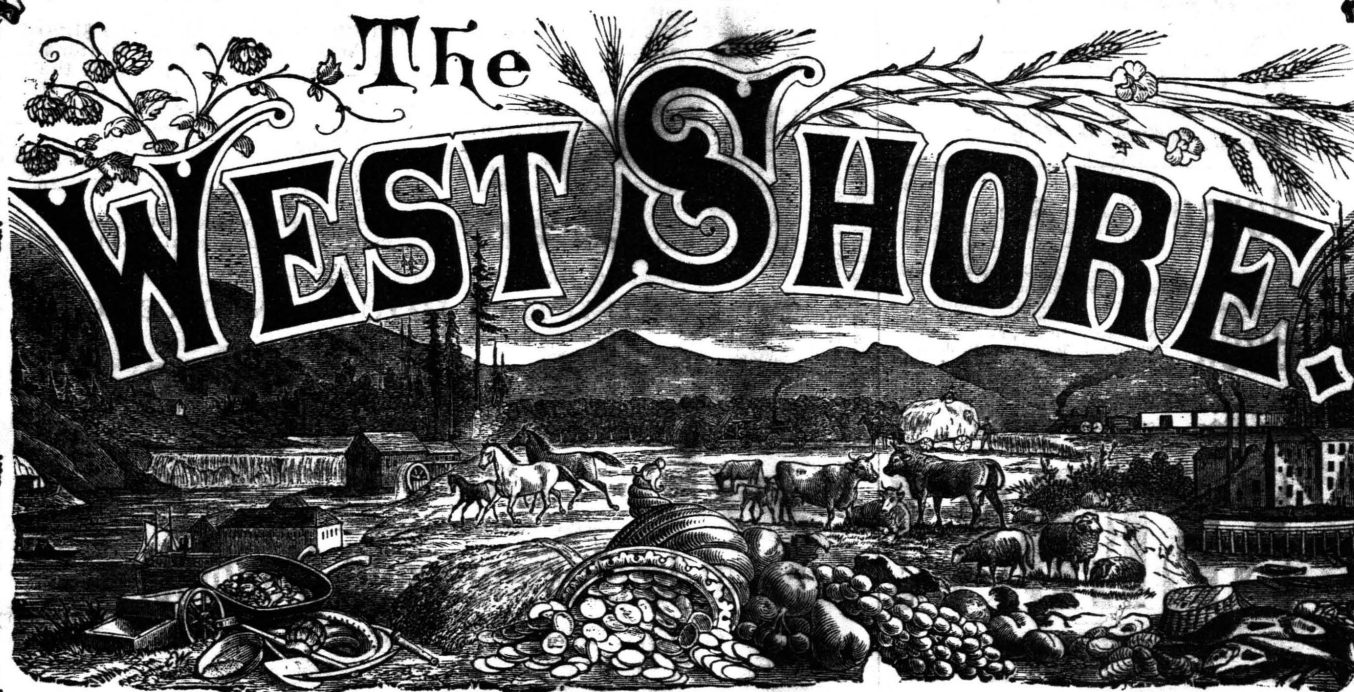


May, 1881.

Vol. VII.—No. 68.

Subscription per Year, postage paid . . .
To Foreign Countries . . .
Single Copy . . .

\$2 00.
2 25.
25.



A FAMILY PAPER,
DEVOTED TO

AGRICULTURE, SCIENCE, ART,

AND THE
RESOURCES OF PACIFIC NORTHWEST.

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Our National Holiday, the Glorious Fourth! Prepare for it!

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Let us give you an idea or two how to save money and time!

Just consigned to us from New York and Philadelphia—

128 dozen CORSETS from 25c upward.
190 dozen LADIES' HOSE, 10c per pair upward.
420 dozen CHILDREN'S HOSE, 5c upward.
23,643 EMBROIDERIES, narrow, medium, wide and flouncings, 2, 4, 6, 8, 10, 12½c to \$2.75 per yard.
90 doz. WHITE PURE LINEN HDKFS from 10c up.
110 pieces RUCHINGS from 5c per yard upward.
300 doz. First Class KID GLOVES, all colors, 50c a pair. These are well worth \$1.00.
LISLE-THREAD GLOVES, Ladies and Children's, at 25c on the \$1.00
A heavy consignment of Gimps, Fringes, Cords and Tassels and Buttons.
1 case Veilings, Belts, Ties, Fichus, Collars, Cuffs, etc., at just half the prices usually asked.
1 case of Parasols and Sun Umbrellas, sold for whom concerned.
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1 case of SUMMER SILKS, 50c per yard—sold everywhere at 75c.
LADIES' LINEN GOODS in endless variety.
Heavy Goods, such as DOMESTICS, etc., etc., always sold closer than any house in the trade.
Small Wares and Notions at nominal prices; best stock in Oregon.
RIBBONS, RIBBONS, Plain and Brocaded; very handsome goods.

Come and see, and compare our prices, and you will surely patronize

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KNAPP, BURRELL & CO.,

PORTLAND,

OREGON

THE WEST SHORE.

VOL. 7—No. 5. { L. Samuel, Publisher,
5 Washington St.,

Portland, Oregon, May, 1881.

Per Annum, } Single copies
\$2.00. } 25 cts.

OUR WATERING PLACES.

As the warm season approaches, the dressmaker is in demand in most of our wealthier families and the sound of the sewing machine keeps time to the low humming voice of the average seamstress, of whom the minstrel poet wrote:

"She worked as she sung, and sung as she worked,
Because her machine was a singer."

The silks and satins of last winter are laid aside, to give place to lawns and percales for the heated term. Of course, either the mountains or the sea invite those who are weary of life among bricks and mortar.

Ilwaco was growing rapidly in favor with our people until the unfortunate affair which ended with the death of Miss Burbank, and is really as pretty a seaside resort as could be asked for. On the Oregon side of the gateway we find the Grimes House, always popular with those of our citizens who study comfort rather than display; and the Seaside House, more fashionable, and still flavored with a spice of the *nouveau riche* air of Ben Holliday's regime. And there is the beautiful city of Olympia, with its lovely woodland drives and boat rides on the placid bay; but there is not a good hotel in the town, which, with all its beauty, is quietly perishing for want of enterprise.

And as for mineral springs, Oregon is one of the most remarkable states in the Union. But her loveliest springs are too often inaccessible to the great highways of travel. The two finest drinking springs are those chalybeates of iron found on the road from Ashland to Linkville, Southern Oregon, and also in Grant county, on the road from Canyon city to Fort Harney. The best drinking spring about here is the Wilhoit spring, situated about twenty miles from Oregon city. Its waters are superior to either of those just mentioned for diuretic purposes, but inferior to them in cases of dyspepsia.

The bathing springs are more numerous, the most accessible being those in Yoncalla valley, at Snowden station. Then, there is the Belknap spring, on the head-waters of the McKenzie river, where the best trout fishing in Oregon is to be had. And when

the Grande Ronde branch of the O. R. & N. system is completed, the celebrated "Hot Lake," near Union, will be visited more extensively than any other in the state. And up the John Day river, under the shadows of Strawberry Butte, lies a healing fountain fully equal to Paso Robles, and far more beautifully surrounded. It barely pays its owners a living, but located a hundred nearer Portland, there would be a fortune in it.

Whenever there is a continuous line of railroad hence to Spokane falls, it is our belief that the pleasure traffic will be revolutionized; that new places of resort will be opened up, and that some of those now prominent will lapse into utter insignificance. But, as Father Ritchie used to say, "we will see what we shall see."

OUR FAVORED LAND.

The telegrams that went out of this state in December and January, as to the severity of what will long be known hereafter as "the hard winter," set many people to thinking that Oregon and Washington Territory were not what newspapers and corresponding tourists had claimed for them: and old wiseacres shook their heads as they repeated the wholesome adage that "to go further is to fare worse." And, indeed, with the raging floods of the upper Willamette valley, and the cold snap in Yakima and Wasco, which swept away millions of dollars' worth of cattle and sheep, the outlook was not encouraging for the old plodding fellows who had made up their mind to stand by the "Old Dominion of the Pacific" for a few years longer.

But spring opened at last, and such a spring for Oregon. Every orchard a bower of blossoms, while the grass spread its emerald carpet earlier than ever known before, bedizened with a sheen of daisies and buttercups that no art of the Gobelin weavers could hope to rival. Above our heads the bluest sky that ever charmed the artist's vision; around us the balmy atmosphere, bearing hygiene in the blessed breath of our eternal pines; beside us, the crystal brooks gurgling with nature's

laughter, as they bear seaward the snows of Hood, Adams and Jefferson; and last, not least, the fat soil beneath our feet, yearning to yield up its golden treasures of grain at the summons of the plow. Search in vain for Oregon's superior. Her merit has not yet met with deserved recognition.

Late in April and even in early May it was our turn to read telegrams of havoc and devastation by ice and flood. Just see what the upper Missouri and its tributaries have been doing. Our losses in January and February are not as dimes to the dollars that have been daily wrecked in the valley of the Missouri, and, worse than that, comes the loss of life and the cry of misery from ruined homes. All these sadden the heart for the time being, but the reflection that our winter is gone and the new year is upon us full of life and hope, is, indeed, a pleasing one. The slanting shadows of our vast mountains fold down the curtains of twilight upon a happy and prosperous people, and Venus trims her evening lamp to look down upon a picture so fair as to realize a restoration of the world's old Arcadian dream.

Let us thank the bounteous Giver of all for the fair lines of peace and comfort that encircle our homes; and if our lot be not as prosperous as some of our neighbors, let us see if ourselves are not a little too blame. And while the idle and the vicious guzzle bad whisky in fetid groceries and complain of "hard times in Oregon," the earnest thinkers and industrious workers in our midst are quietly getting rich.

PROSPEROUS.—In spite of the dull season, small crops and smaller prices, scarcity of coin, and dull times generally, of which we have heard so much, Weston seems in a very prosperous condition. Substantial improvements are being constantly made, merchants are daily receiving large supplies of goods, mechanics are all busy, new business enterprises are increasing and all feel sanguine as to our future.—

Leader.

The best thing in corsets—a woman.
The candle wick is up to snuff.

THE WILLAMETTE FALLS.

The Willamette Falls are located about twenty-four miles from the confluence of that stream with the Columbia. The river at that point is about four hundred yards in width, and flows through a pass in a range of lofty hills covered with dense fir timber, except where the woodman's axe has felled the forest in the interest of advancing civilization. At the lowest stage of

water the fall is sixty feet, and most of the distance from shore to shore it pitches over the ledge of rock above to the seething maelstrom beneath, without an obstruction to ruffle the descending torrent. The rim of the rocky formation over which the river flows is in the form of a crescent, with the circular side up the stream. A fine view of the cataract can be had from the summit of the rocky prom-

ontory on the east side of the river. The scene is grand and awe-inspiring, especially when the sun is half-way down the western horizon, at which time a cloud of rainbows paint the mist which rises from the foaming abyss, adding beauty to the sublimity of the view. From time immemorial the Indians resorted to the falls during the spring and fall salmon run for purposes of fishing. The salmon here find an



THE WILLAMETTE RIVER FALLS, OREGON CITY. — Photo by L. G. Davidson.

obstruction to their progress up the river which few of them can surmount. 'Occasionally one, more daring and supple than the rest of the finny thousands congregated at the foot of the falls' succeeds in leaping over the fearful barrier. Oregon City, the oldest town in the state, is situated on the east bank of the river, just below the falls, and is destined, in time, to become one of the chief manufacturing towns in the state. The water power that can be cheaply utilized is unlimited. On the west side of the river the locks are con-

the first white settler located, south of of the Columbia, in Oregon. There the first seat of government was located. The first church and school-house erected in the great Northwest reared their rude proportions within sound of the voice of the mad waters that forever flow over the hights of Willamette falls.

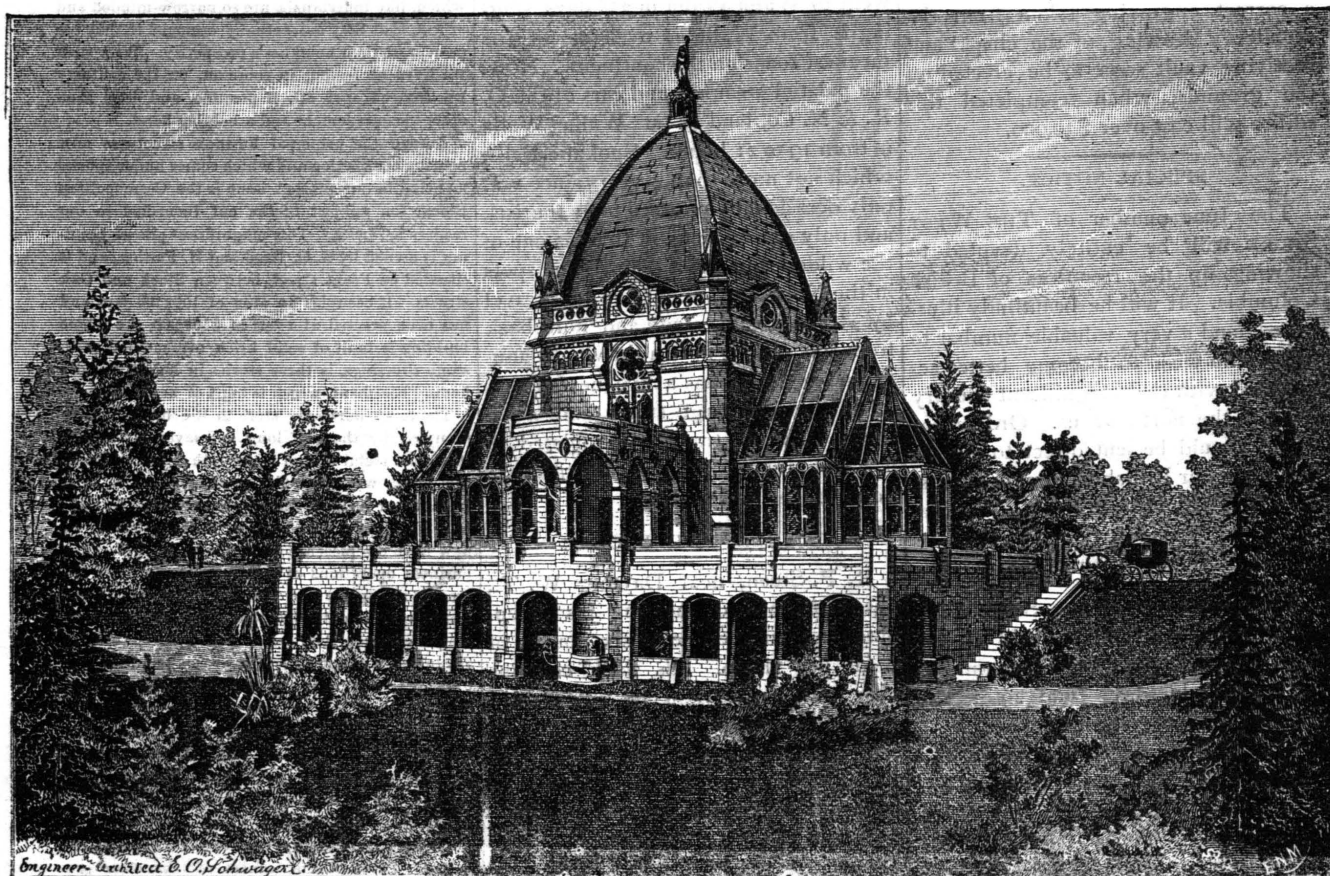
THE CITY OF PORTLAND.

If there is a city in America deserving the name of the Panoramic city, Portland is the one. Enviroined by

architect and the artistic grace of the landscape gardener; the smoke from our manufactories, and the ascending steam from the busy river craft, all go to make up a picture that is a grateful one to behold.

And yet, seven-tenths of our people rush off to California or the East for their summer recreation, in search of new scenes and new faces, forgetting the grand pictures that the early beams of morning unfold before their very doors.

The Northern Pacific R. R. Co.,



CHAPEL AND RECEIVING VAULT AT THE NEW CEMETERY, WHITE HOUSE ROAD, NEAR PORTLAND.

structed, through which steamers pass with ease and safety. The work is of the most permanent character, the excavations being through basaltic stone, while the massive walls of masonry are constructed of the same material. There is no locality in the state possessing more interest to the traveler than the Willamette falls. Aside from the grandeur of the surrounding scenery and the roar of the cataract, thundering forth its eternal anthem, the place possesses a history of peculiar interest. It was at "The Falls" that

hills grander than the famed Hill of Howth, in Ireland, she presents a view beside which for grandeur the Roman Campagna itself fades into utter insignificance. The rugged summits of the Cascade and Coast ranges, broken at intervals by the snowy peaks of slumbering volcanoes; the placid currents of the Willamette and Columbia at our feet, bearing the golden grain of the Northwest onward to the ocean to feed the starving millions of the old world; the palatial homes of our merchant princes, invoking alike the skill of the

has resumed sales of its agricultural land at \$2.60 per acre. Deeds however will be made only to settlers after twenty acres have been put under cultivation. This rule is a wise one and will be the means of keeping the land from non-resident speculators, and place it in the hands of home-makers, who will develop the country.

When a man is climbing the ladder of fame he likes rounds of applause.

Most people are like eggs—too full of themselves to hold anything else.

OUR NEW CEMETERY.

The new cemetery now being laid out on the White House road by a number of our enterprising citizens is already assuming shape, and we take this early opportunity of congratulating the projectors on the assured success. When the extensive plans are carried out every resident of this city and vicinity will have reason to feel proud of this beautiful "City of the Dead." The grounds consists of 280 acres, and are being artistically laid out in plats, walks and drives. On page 117 will be seen a correct engraving taken from the architect's drawing, of the chapel and receiving vault soon to be erected on the grounds, when completed this edifice will cost over \$30,000.

SPECIAL NOTICE.

The June number of THE WEST SHORE will be entirely devoted to showing up the resources of British Columbia. It will be beautifully illustrated, and a very valuable number to those who wish to become better acquainted with that magnificent country lying to the north of us. Orders for copies should be sent direct to this office, or to our British Columbia agents, Messrs. T. N. Hibben & Co., Victoria.

STATE FAIR NOTES.

The annual fair of the State Agricultural Society will be held at the Fair Grounds, near Salem, commencing on Wednesday June 29th, and ending on the evening of July 6th.

The O. & C. R. R. Company will put on two trains to run between Salem and the Fair Grounds during exhibition week. Trains will leave Commercial street depot and Fair Grounds every fifteen minutes, from 6 A. M. to 11 P. M.

The floral department will be one of the big features this year.

The race track has been put in splendid condition.

Space in the new pavilion for artistic displays is being secured by the "early birds."

The display of agricultural implements at the old pavilion will be immense this year.

Everything, from present appearances, points to the fact that the fair of 1881 will be the greatest success ever attained by the society.

THE FOURTH.

The coming anniversary will be more generally observed in Oregon than any previous one. Portland is making great preparations, and a fine time can be anticipated by all who will assist at the celebration here. Quite a large number of villages in the interior are preparing for local celebrations. From the present outlook we predict a brisk trade in flags and fireworks.

THEN AND NOW.

In the good old staging days we went to Walla Walla in 3½ days, staging it from Wallula, over one of the meanest roads on the continent. Now, the palatial steamers and cars of the O. R. & N. Co. land us at Walla Walla in from 19 to 21 hours. Spokane Falls, which not more than 4 years since was only occasionally referred to by tourists, and only daring ones at that, as one of the wildest and most picturesque spots in the Northwest, about five days travel by steamer, cars, stage and horseback from this city, is now a thriving manufacturing town, has a live newspaper, a bank, several large stores, and when the N. P. R. R. track is completed to it, about June 10th, will be within 30 hours travel of Portland.

SHEEP AND WOOL.

R. P. Steen, near Dayton, W. T., has just finished shearing his sheep, obtaining an average of six pounds of wool per sheep. His flock contains over 1,000 lambs, and he sold \$1,635 worth of wethers to be driven to eastern markets. About 40,000 sheep, at an average price of \$1.38 per head have been purchased for eastern markets, from the vicinity of Dayton.

In Salt Lake City flats, appears this sign. "Ring the top bell for the oldest wife."

PROMINENT BUSINESS BUILDINGS AND LEADING COMMERCIAL FIRMS OF PORTLAND, OREGON.

There is probably at the present time no city of the Union of the same size and population as Portland, that can boast of equal evidences of material wealth and solid permanent prosperity—unlike San Francisco and many other cities of California and neighboring territories, her growth has received little or no assistance from mining excitements or the discovery and extraction of the precious metals. On the contrary she has had to contend with and fight against, not only certain natural disadvantages, but also against unjust strictures and persistent jealousies on the part of a large and influential element in San Francisco.

Our citizens and merchants have nevertheless bravely battled on, until by strict attention to legitimate business and bona fide industrial pursuits, they can to-day claim the city where they have lived and labored for years, as containing more actual wealth according to her population, than any other metropolis of the United States—the resident who has been absent from here for some months or a year or two, expresses himself as entirely surprised on his return at the permanent and solid character of our new buildings, including stores, warehouses, and private residences that are constantly in course of erection and completion.

The WEST SHORE always takes a pardonable pride in alluding to this subject and apprising the outside world of our steady march onward to commercial prosperity. There are some cities, which, like individuals, are so narrow-minded and selfish, that they are actually annoyed if they see or hear of their neighbor's prosperity. With such we have no feeling in common, on the contrary we say—prosper all, if possible, and lend each other encouragement and a helping hand.

Among the principal business structures now nearing completion and which comes under special mention in our present issue is the Cosmopolitan Block, the subject of the cut furnished to our readers herewith. This magnificent pile of building is owned by S. G. Reed and H. Failing, and is situated on Front street, between Stark and Oak streets. It occupies an area of 150x100 feet and has been erected at a cost of \$100,000, the whole building is built of solid brick ornamented with stone dressings, is three stories in height, besides having basement, which is built of hewn stone.

The most northerly store in the block will be occupied by the well, long, and favorably known stove and metal firm of Goldsmith & Loewenberg, this house was originally established by A. M. & L. M. Starr in 1851—they were succeeded by Captain Friedman, who sold to the gentleman we now have the pleasure to allude to, in 1871. The business operations of these gentlemen have increased so rapidly and the volume of their trade has become so extended that it was impossible to longer conduct their sales and manufactures to advantage without largely increased facilities.

Their new store is the largest one, in this line, on the northwest coast. As you enter at the main door the spacious offices and counting rooms are situated on the left hand side. A tramway for the easy removal of goods leads from the front through the entire depth to the rear, where the steam elevator is located, which hoists or lowers goods to or from the upper or lower stories, as required. Through the centre of the store are twelve massive iron columns, which rest on stone piers. The first floor is used as the general sales-room, sample room and for offices, and we much doubt if any firm in San Francisco has a better or more complete selection of wares of this particular class. The offices will be fitted and furnished with every facility for the quick and regular dispatch of business. The basement is utilized for the stowage of heavy goods, such as cauldrons and pots and bulky articles of a similar description. The second floor is utilized for full packages and duplicates of articles on the first floor, while on the third or top floor will be found the workshop, where twenty skilled workmen have steady employment in tin and sheet iron work. Before closing this notice it may be well to draw attention to the fact that Goldsmith & Loewenberg are sole agents for the Oregon Stove Foundry, an institution representing a capital of \$100,000, employing 40 men, and being under the presidency of Mr. J. Loewenberg.

FOSTER & ROBERTSON.

The central store of the magnificent Cosmopolitan block is to be occupied by the hardware establishment of Messrs. Foster & Robertson, and the four stories (including basement), will be filled with everything in their line. In the basement the heavier goods will be stored or displayed, including such articles as nails, spikes, grindstones, sash weights, rope, etc.

The salesroom will be on the first floor, which is the handsomest and most elaborately fitted up of any salesroom of a similar kind on the Pacific coast. The shelving is made of Oregon ash and the counters are also of native wood and are finished in artistic style. This room will exhibit to the patron every article of shelf hardware and a complete assortment of builder's hardware, and the arrangement will not only be pleasing to the eye, but will be displayed so that the customer can make his purchases easily and systematically. The second floor will contain case goods, shovels, handles, axes, agricultural tools and commodities of a like kind. On the third floor will be found all of the goods in bulk and unbroken packages displayed in the two lower stories. The heavy interior buyer here finds duplicates of all the articles he has selected, packed ready for shipment, and before he is fairly out of the store his goods may have been marked, lowered into the street and placed on drays, ready to be hauled to the wharf or depot.

This establishment was founded in 1857 by Mr John R. Foster, the senior member of the firm,

whose well known business integrity and fair dealing has given the firm a standing in the country second to no other establishment of the kind on the Coast. Mr. David Robertson the junior member of the firm is a native of Portland, a young man of rare commercial ability, who was made a partner in 1880, and brings into the house vim, vigor and untiring energy in the management of the business. The offices of the firm are palatial in their appointments and combine elegance with convenience. This firm imports direct from the great factories of the east and the old world, and having special freight rates with all the trunk, east and west lines, they are enabled to sell goods as low and in many instances lower than the heaviest houses in their line in San Francisco.

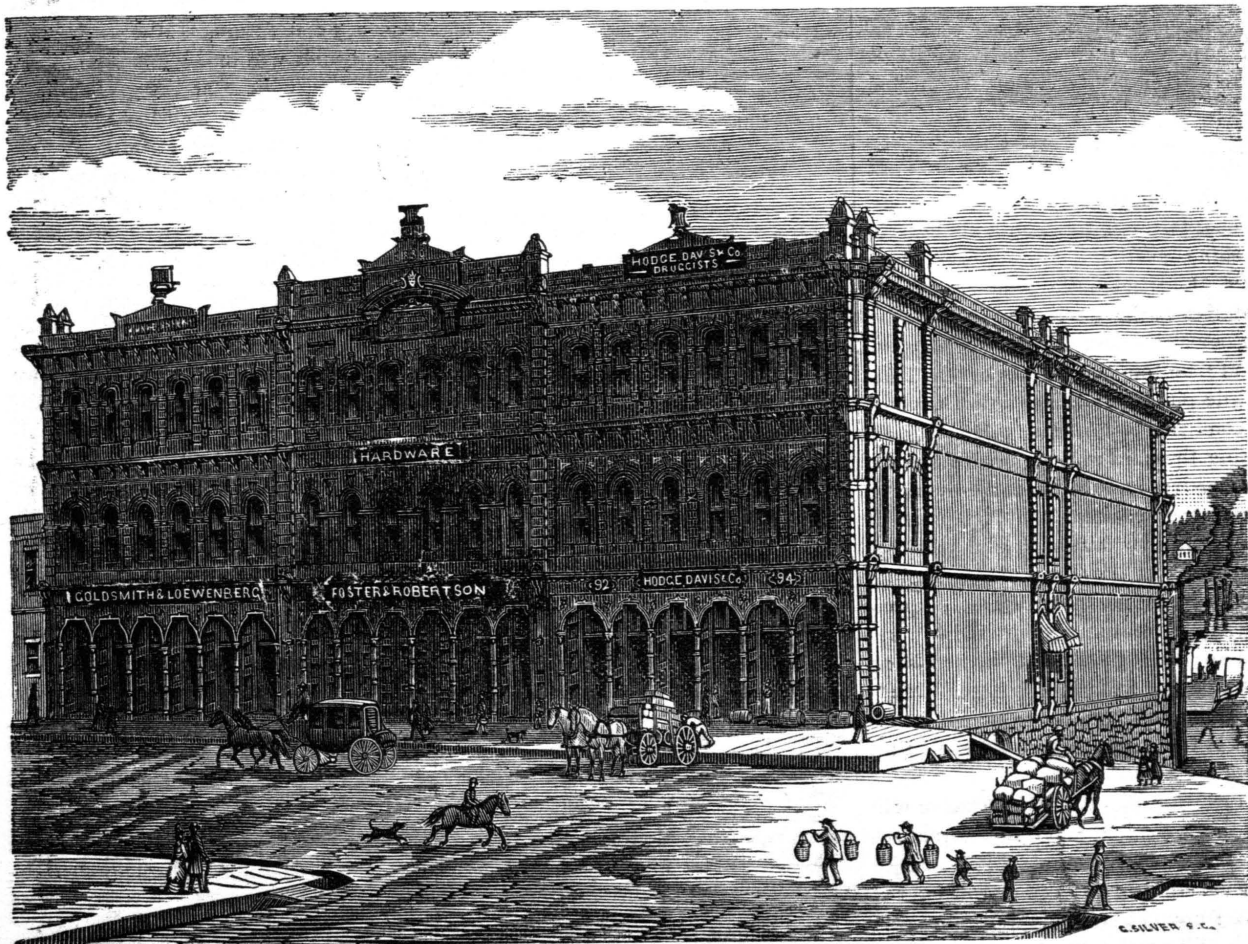
HODGE, DAVIS & CO.

This firm, occupying the corner store of the Cosmopolitan block, are the largest wholesale dealers in drugs, medicines, paints and oils on the North Pacific coast. The firm is one of the oldest in the city, its foundation dating back to 1851, when Hooper, Snell & Co. opened the first drug store in Portland. Since that time this house has sold goods under the firm names of G. W. Snell & Co., Babcock & Story, Story, Redington & Co., G. L. Story, Smith & Davis, Davis & Schuyler, and T. A. Davis & Co. The present firm is the consolidation of the last named firm with Hodge, Snell & Co., in 1878. The last named house was also at that time one of the leading drug houses in the city, having been founded in 1860 by

Messrs. Hodge & Calef (the latter gentleman deceased). The consolidation gave a large impetus to the business, as it brought into the firm a large amount of capital and the experience and trade of years. The members of this firm are now Charles Hodge, T. A. Davis, Geo. W. Snell and F. K. Arnold, all gentlemen, in the broadest sense of the word, commercially and socially. The amount of business transacted in the course of each season, and the number of employees and attaches is marvelous, even for the queen city of the northwest coast. The location and arrangement of their establishment is such as to give them every facility for displaying, selling and shipping their goods.

Trucks can discharge or load freights direct at the basement doors, where are stored oils, pitch and the heavier goods, of the house, and is the only establishment in the city that enjoys a like facility.

The first floor is the salesroom proper and also contains the elegant offices of the firm. The second story is the package department, while the third floor is almost entirely dedicated to the manufacture of the "Oregon Kidney Tea" a preparation of which this firm are sole proprietors, and which has already become a favorite remedy all over the Pacific Coast. This firm are adding almost daily to their immense stock new articles brought to light in the field of medical knowledge, and new remedial agents as well as all the additions made by scientific discoveries for the benefit of mankind.



THE NEW COSMOPOLITAN BLOCK, FRONT STREET, BET. OAK AND STARK, PORTLAND, OREGON

MEDICAL LAKE, W. T.

This pretty and most peculiar sheet of water deserves a great deal more than the passing notice I can here bestow upon it. Surrounded by heavy bull pines, and in the midst of a fine grazing and fair agricultural country, Medical lake has escaped the eye of the explorer for many years, because around it the Indians perpetually cluster, and the redskins by no means extended any welcome to the new-comer, whose hair, indeed, as a rule, they summarily remove.

About eight years ago, however, the noble reds temporarily retired from Medical lake, on the approach of a detachment of U. S. soldiers, and Mr. Andrew Le Fevre, a French Canadian, happening to cross from Montana with a flock of sheep badly afflicted with the scab, camped on its banks. The sheep took kindly to the water, which Le Fevre found of a sour taste and slightly purgative nature; but to his astonishment the sheep, in ten days, were quite cured of scab, and it dawned on the new settler that the water contained medical properties. Mr. Le Fevre's left arm was then so badly paralyzed as to be incapable of voluntary motion, and it occurred to him that bathing in these waters might arrest the progress of the disease. Not only did it do so, but the afflicted limb was in a few weeks restored to health, though the swelling at the elbow—caused, I believe, by rheumatic gout—remained, and does to this day.

Poor as he was, Le Fevre bought a lot of land on the shores of the lake, and, despite the Indian objections, which he combatted by feeding them liberally during the hard winters, he maintained his position, and is, to-day, owing to the fast spreading local celebrity of these curative waters, quite wealthy. For piles the lake proved an absolute cure; almost all skin diseases, especially those of the scalp, give way before its healing application, and soon lots 50 by 55 feet in the village of Medical Lake—the first house of which was built but one year ago—went to £10, and even £20.

Now that the Northern Pacific will run within nine miles of the place—through Cheney station—Medical lake will be accessible to the world by rail next June. [Cars are now running.—Ed.] The weak point in the business

is the hotel, which affords, besides a shockingly bad cuisine, so little accommodation, that I am informed about one thousand people camped out here this summer. The bath houses are fair enough, and very clean.—*Cor. of London Field.*

1873-1881.

NINTH ANNUAL REUNION OF THE
PIONEER ASSOCIATION OF OREGON
—ORDER OF EXERCISES.

The ninth annual reunion of the Pioneer Association of Oregon will be held at McMinnville, June 15th. The following is the programme of the day:

Procession will form near the railroad depot, under the direction of Grand Marshal A. Zieber, at 11 A. M., and march by route designated by the committee to the stand, in the following order:

Marshal and Aids.
National Flag.
Band.

Grand Standard Bearers.
Esquire Ebert, assisted by Ben. Cornelius and J. W. Garrison.
Chaplain and Orator.

President and Officers of the Society.
Members of the Association who came to the Territory previous to 1841.

The following named gentlemen will act as standard bearers:

- 1840.—Amos Cook, Yamhill county.
- 1841.—W. T. Jones, Yamhill county.
- 1842.—T. J. Shadden, Yamhill county.
- 1843.—N. K. Sitton, Yamhill county.
- 1844.—John Minto, Marion county.
- 1845.—Stephen Staats, Polk county.
- 1846.—David Guthrie, Polk county.
- 1847.—R. V. Short, Clackamas county.
- 1848.—Horace Lyman, Washington county.
- 1849.—A. P. Ankeny, Multnomah county.
- 1850.—Werner Breyman, Marion county.
- 1851.—T. W. Davenport, Marion county.
- 1852.—E. C. Hadaway, Yamhill county.
- 1853.—R. W. Philips, Yamhill county.
- 1854.—

SERVICES AT THE STAND.

- 1st.—Prayer by the chaplain.
- 2d.—Opening address by the president.
- 3d.—Music by the band.
- 4th.—Annual address by Hon. W. C. Johnson.
- 5th.—Music.
- 6th.—Recess one hour.
- 7th.—Occasional address by M. Crawford, on emigration of 1842.

After which short volunteer speeches will be in order.

Election of officers will take place immediately after the close of the volunteer speeches.

The camp fires will be lighted at 8 o'clock, P. M., near the stand, at which all old pioneers are earnestly requested to be present.

The grand pioneer ball will commence at 8:30 o'clock, in the large and commodious warehouse

at McMinnville, to which all are cordially invited. Ball tickets, \$1.50.

The secretary will be in attendance at the pavilion during the day and evening, to receive dues and applications for membership, and to issue certificates of attendance for return tickets.

CAMP SPOKAN.

This post is situated near the mouth of the Spokane river, on a large flat beautifully timbered. Grand scenery is to be found all along the river, which winds its way through large and grotesque rocks, and then again through meadows covered with fine grass and flowers of all colors. The post itself is yet in its origin, and officers and men live, as yet, in shanties or tents, but several buildings are already in course of construction, and will very likely be completed before winter. The saw mill is working with all its power, and a brick yard has also been started. Spokane Falls, the nearest postoffice, is 65 miles from here (the new military road will shorten the distance some ten or twelve miles), and the mail comes from there twice a week.

It cannot be doubted that this place has a great future, as the N. P. railroad comes within 40 miles of it, and our station will be at the great falls of the Spokane. The land has been considered excellent for farming. Furthermore, some rich silver ore has been found within four miles of this post, also lead and copper, and several claims are worked.—*Cor. N. P. News.*

STATE FAIR EXHIBIT.

The manufacturers of agricultural machinery and farming implements are evidently going to make a huge display at the forthcoming annual exhibition of the State Agricultural Society of Salem. D. M. Osborne & Co., of New York, and Frank Bros., of Michigan, have already secured a large amount of space for their displays, and now comes J. I. Case & Co., of Racine, Wis., who will exhibit their improved threshers, horse powers, portable steam engines, and a variety of other articles of their manufacture. The display this year of farm implements will be varied enough to interest everybody, and give the yeomanry of the valley an opportunity to select such machinery as they may want for the coming harvest.

Every printer is a galley slave. Yes, and his wife is the gal he slaves for.

A SUMMER CAMPING TRIP IN CALIFORNIA.

Six months of dry weather tempts Californians to make extended camping tours; a mode of travel which has the charm of novelty, exhilaration and healthfulness. The private carriage gives so much of delight and freedom, that it is a wonder that all travelers with money, even those with a little money, do not journey in that way, for thus are combined all the elements which go to make one light-hearted and healthy.

A journey by stage robs travel of its finest pleasures; as one cannot select their company, nor their times of going, nor stop at will. On the railroad the scene is but a swift and vanishing dream, that grows unreal while looking at it; and the details are so evanescent and transitory, and so illusive, that they are recalled only with painful effort. The panorama, to the tourist by wagon, moves slowly, so that

is rarely more than picturesque, but always novel to those coming from the East; while the peculiar atmosphere invests it with an indescribable charm.

THE FIRST NIGHT.

We camped the first night where a canyon debouches on the ocean; a lively stream ripple along beside us, and the Pacific gently laved the sands a few rods away. Grand, gnarled old sycamores, and older live oaks, waved around our heads, as we gathered around the blazing camp fire; and when we laid down for the first time to sleep upon mother earth, the flicker of the fire light on our tent, the murmur of the creek, the plashing of the ocean and the sweet music of the wind in the trees formed a combination delicious in its weird novelty. The new camper enjoys the sensation of doing so queer a thing as tenting, and wonders how easy the bed is, and, whilst wondering, falls fast asleep. But soon the sun shines

unanimous shout at the idea of wanting anything to eat so soon in the day; but when the lunch is brought out, every one falls to with a will, and each day an earnest protest is made that more lunch must be put up. After lunch the two or three on the back seat, having no care of the team, fall into a quiet mood, which results in their finding themselves in "Sleepy Hollow" for an hour or two. As the time for reaching our appointed camp draws nigh, the restless ones begin to interrogate the passers-by (if there happen to be any), "How far to —?" and the conflicting and delusive answers cause a good deal of merriment.

Arrived at last at camp—we only undertake to make 25 or 30 miles per day—all turn to and unpack, and as soon as the best place for the tents is selected, they are pitched. Then some one goes out to forage for milk and other comestibles. Our cook skirmishes around for kindling, while one of the men cuts the heavy wood.



Top of Half Dome.

Cathedral Peak.

Vernal Fall.

Mt. B. Oederick, or Cap of Liberty.

SCENE IN THE YOSEMITE—THE CANYON OF THE MERCED AND AND THE VERNAL FALL.]

its features have time to be fixed and permanently photographed on the mental retina.

THE ROUTE.

Our trip was up the coast from Santa Barbara to the Yosemite, thence to San Francisco, and back again to our starting point. The route adopted carried us over seven mountain ranges and their complementary valleys, including, of course, the great San Joaquin; and led us up into the Sierra Nevada. We started as soon as danger from rain was over—this year about the first of sixth month—when the fresh green of nature and the profusion of flowers was an ever new delight. The road for the first day lay along the narrow strip bounded by the ocean on the south and the foothills of the Santa Ynez (Saint Agnes) range on the north, thus combining a charming variety of contrasted views. What gives its peculiar character to the Coast Range scenery is the delicate and beautiful curving of their masses by the aqueous erosion of the soft material of which they are composed, and which is made conspicuous by the general absence of forest and shrubby vegetation, except in the canyons. This scenery

through the slim canvas, and he or she who had lain down last night, thoroughly but healthfully tired, rises as thoroughly rested this morning. A hasty toilet serves all purposes, and each one of the party falls to their prearranged duties. One folds up the blankets, another takes down the tents, while the men feed the horses, and the cook gets the breakfast; which latter consists of oatmeal, eggs, flapjacks, bacon, and perhaps game. All this is served upon a table that folds up, and slips under the bottom of the wagon, and tin plates and mugs replace the china of home. At the close of the meal, lunch is prepared, tents, bedding and baggage put aboard the wagons, and by eight o'clock we are on the road. The first five miles are made on a walk, during which a morning hymn is sung. Story telling, reading, comments on the scenery, stopping for flowers and specimens of rocks, hurried getting out of guns to shoot the game that so temptingly crosses our path, the exchange of places by some of those in the wagon with the horsebackers, speed on the hours; when some one breaks out, "Oh, I'm so hungry." This calls forth a

Soon the dinner of stew and potatoes is ready, and served with *hunger-sauce*, everything is appetizing; so that we eat until each turns in surprise at the gormandizing capacity of the others. Sometimes the camp ground proves untenable. At Nipoma two snakes glided by us, each over five feet long. On the San Luis mountains the driver killed a rattlesnake just after getting into camp, and at Merced, the children amused themselves by drowning tarantulas out of their nests. When a dozen had been captured at our very tent door, we concluded that it was time to move. It was found convenient several times to take an empty house in the little towns we passed through, as when in such places, we had amusing experiences of children peeking around to see the elephant or other curiosities that travelling shows bring with them. The evening was usually enlivened with a roaring fire, when campers in our vicinity would perhaps come over and join us in merry-making.

NOTES ALONG THE COAST.

But to resume our trip. At Gaviota, 40 miles from Santa Barbara, the Santa Ynez and the ocean had drawn so closely together as to for-

bid a further passage between them; but a mountain stream here conveniently pierces the range, and the road, traversing the pass thus made, is crowded between the precipitous rocks on either side. The narrow defile, the lofty cliffs, and the rushing torrent, which every winter carries immense boulders down its bed and tears the road and leaves it rugged, constitute a scene almost sublime. Gaining the summit of the range, one looks down on a charming pocket or little valley devoted to the plow, whose waving crops formed a most pleasing contrast to the pastoral strip along the sea. A little gorge enters this valley, and over its summit falls a stream a distance of 120 ft, making a picturesque miniature Yosemite, and we lingered lovingly in the dark ravine of Nojaqui almost all of one Lord's day. Crossing a few more spurs we dropped into the main valley of the Santa Ynez, whose mesa is crowned with one of the old Mission churches.

After leaving the valley and Mission of Santa Ynez (Saint Agnes), we passed through a well-wooded pastoral country, where the conditions are unfavorable to tillage, as in so many portions of the State, and "walk-away crops" necessarily go hand in hand with sparse populations.

Such numerous and extensive interspaces of mountains or unirrigable land, which must be devoted to pastoral life, must always give a special character to the rest of the population of the State. Long intervening distance between communities, combined with long, dry seasons and cheap horses, invite to excursions by wagon and horseback, and thus it is that nature imbues Californians with nomadic traits. She has other seductive conditions by which to instill nomadism into the citizens of the Pacific slope; by placing bonanzas in secluded nooks, on the tops of the ranges, even above the snow line, she tempts the young and energetic to lonely and adventurous wandering all over her mountains. Again, by having in a most niggardly way denied the boon of timber trees to southern California, she has made its citizens largely dependent upon Oregon for their lumber.

The housing of the people is influenced by the climatic conditions, for, where it is never cold nor hot, the house is not the essential thing that it is where great extremes prevail; and the home is in the open air rather than indoors. Thus nature is a foe to the domesticity that pertains to a winter fireside and a rainy region, and roaming habits replace permanence.

We found, after rising out of the Santa Ynez valley, some arable lands interspersed among the pastoral valleys; and passing on we crossed the Santa Maria mountains. In the valley of the latter saintess, the river was dry, and the sandy, rocky bed seemed at least a mile wide; but the tedium of the trip across it was relieved by the weird look of the bluffs by which it was surrounded.

Arrived at San Luis Obispo, we found a country seat nestled among the mountains, but connected by a narrow-gauge railroad with an ocean port, at which there is a whale fishery. Monsters have been caught there, and one 84 ft. long was stranded on the shore.

From the town of San (Saint) Luis the Bishop (Obispo) we came to El Paso de Robles (the Pass of the Oaks), where are hot and cold springs and baths of sulphur and other mineral waters, and where many miracles of healing are said to have been performed by the early Padres. Such springs abound throughout the State, and the medicinal virtues of each have earnest advocates. Perhaps the *vis medicatrix* of nature, when aided by rest, fresh air and good company, is the most powerful agent.

Coming down from the high uplands of the San Luis Obispo region, we reached the Salinas plains, which open out into Monterey bay. Across this plain, as also through the mountain passes and in certain localities, strong winds blow daily; and these sometimes increase to a storm of sand and even pebbles fearful to encounter. The wind was so cold and fierce as we crossed these Salinas plains, that at 3 o'clock in the afternoon in June we were glad to spy a house in the distance, under the lee of which

we were fain to drive up for shelter while we got out our blankets. Again, as we approached the Livermore pass, the wind was so furious that the face of the driver was actually cut and bled from being struck by the sharp sand flying in the air, while the rest of the company were glad to shelter themselves in the bottom of the wagon. But the effects of these winds is to make the interior valleys habitable which would otherwise prove too sultry for human endurance; the prevailing direction being from the west, carrying the fresh cool ocean atmosphere landward.

THE TURN EASTWARD.

Leaving these sad windy plains, we rose up over the San Juan mountains, and on the crest looked back to bid the sea good-bye and then down into the charming Santa Clara valley, one of the finest in the State. This valley opens out into the San Francisco bay and lies between the Coast and Contra Costa ranges. It is thickly settled and thoroughly cultivated, and is the residence of very many wealthy people.

Proceeding up the Santa Clara as far as Gilroy, we turned squarely to the east, and crossed the Contra Costa mountains by the Pacheco pass, which some of our party were disappointed to find was not a narrow defile, such as the Greeks defended at Thermopylae, but only an extensive depression in the range. The road to the top was one of easy grade, and on the summit we obtained an extended view of the San Joaquin valley and of the Sierra Nevada, which hems it in on the east. As agriculture is a greater source of wealth to California now than gold mining, some account of wheat culture is here in order. We rode for many days through continuous wheat fields, all unfenced, unmanured and unirrigated, which had been put in in the most economical manner that such a wholesale process can suggest. One day we camped next Mr. Funk, at Grayson, and watched his Leviathan harvester at work. Twenty horses in two lines were hitched one-half each side of the ponderous pole which extended behind, to propel the colossal machine. The end of the pole in the rear was supported on a castor wheel, and a man on a high seat on the pole guided the huge engine by a tiller. In front was a cutting-bar snipping off only the heads of the grain and making a swath 16 to 20 ft. wide. The height of the cut was regulated by a man on the platform in front attending a large lever, and the heads fell on to an endless apron which carried them to an elevator, which in turn lifted them to a mammoth threshing machine, mounted on the platform of the machine. Another man attended the threshing machine, which ran out its debris on the cut stubble, and delivered its threshed grain into a fan, also carried on the platform. This fan also had an attendant, who swiftly supplied it with empty sacks, sewed up the full ones, and then dumped these overboard into the ocean of a grain field through which they were traveling. Thus 40 acres were cut, threshed, cleaned and sacked per day by only four men and 20 horses! Wagons following in the wake of the saurian monster, gathering up the precious freight and hauled it to the riverside for embarkation. Mr. Funk said he was only a one-horse ranchero, and yet he drove his machine two and a half miles through his grain in one straight stretch without turning. The harvester was attended by a kitchen on wheels, 30 ft. long and 10 ft. wide, walled and roofed with canvas, so that the men had no need to return for their meals to the ranch house.

Of fruit we saw a great deal in Alameda county, where we were, though entire strangers, most kindly received by Judge Russell, of Haywards, as we were indeed all along our route. He has a 30-acre currant ranch, and this fruit (as also the cherries of this region) is perhaps the largest and finest in the world.

We had been warned in leaving Santa Barbara that there were numerous lions in our path; but it had been especially impressed upon us that we should have a terrible time in crossing the San Joaquin, as it overflows its banks when the snow melts in the Sierras, and makes a swamp of the plain through which it runs, extending many miles on either side. As we

neared the river we had reports of the wide extent of country submerged, and found our safety was to follow the stage. Putting our baggage on the seats of our wagon and three of our ladies in the stage, we followed it as our pilot through the lake. For 14 miles we traveled through the water, which was sometimes only fetlock deep, and sometimes up to wagon bed; and in some of the sloughs there was a dangerously swift current. The driver even had to have the road indicated by poles part of the way; and we had the comforting assurance during a portion of the day, that if we deviated only a foot from the hidden causeway over which we were supposed to be driving, we should mire down in eight feet of water. Once on this causeway the mules fell down and it was an arduous task to get them up again. We had a 40-mile drive that day, and with a heavy load, soft roads and tired animals, it was an exacting work to keep the horses steady.

But all difficulties were soon surmounted and we reached our desired haven—Merced—and entered on the new task of going up into the mountains in search of the Happy valley.

ASCENDING TO THE VALLEY.

At Merced, our party of nine, including two drivers and a cook, was enlarged by the arrival of our friends from the East, who with their driver just doubled our numbers. Our train consisted of a four-horse baggage wagon, three two-horse wagons, and four saddle horses—a caravan of quite imposing proportion. The drive up steep hills, five and ten miles long, the narrow shelf or ledge which constitutes the road which winds so closely into and around spurs as to keep one of our nervous gentlemen in constant agony looking out for "the man coming around the turn just ahead," and the still more dangerous drive down the steep grades, has often been so vividly described as to enable the reader to realize the situation. But who shall portray the Yosemite? Who can wield a pen or brush so as to convey in its fullness the sublimity of height and massiveness of this great natural wonder?

The Yosemite empties west out of Sierra Nevada into the San Joaquin valley, and is coursed by the Merced river. A rapid descent on the Coulterville trail of about 3,000 ft., lets one down to the floor of the valley, which is a nearly level area about six miles in length and from half a mile to a mile in breadth, sunk almost a mile in perpendicular depth below the general level of the adjacent region. It may be likened to a gigantic trough, hollowed in the mountains, nearly at right angles to their regular trend. This trough is quite irregular, having several angles and recesses, let back, as it were, into its sides, and at its upper end it turns sharply and soon divides into three branches, through either of which we may (going up a series of gigantic steps, as it were) ascend to the general level of the Sierra. The great height of the almost vertical walls of the valley, especially as compared with the width of it, and the very small amount of debris at the base of these gigantic cliffs, give the trough a U shape, rather than the V shape of other California valleys.

THE FEATURES OF THE SCENES.

Having entered the valley at its western or lower end by either of the three wagon roads, one is soon face to face with the gigantic El Capitan, a rock standing out from the north side of the valley, so imposing in its stupendous bulk as to seem as if hewn from the mountains, squarely cut and lofty, on purpose to constitute the type of eternal massiveness. On the other side of the valley we have the Bridal Veil fall, unquestionably one of the most beautiful objects in the Yosemite. This fall, though divided into two cascades, one of 630 ft. and the other of 300 ft., has the effect of a continuous leap of 900 ft. vertical height, its base being concealed by the trees which surrounded it. At 4 o'clock in the afternoon the sun shines on it and a shifting rainbow is seen, now rising, now falling, now swaying to the right and now to left, now iridescent, now evanescent, as the leaping water shifts and sways about under the influence of the passing wind. Proceeding up

the valley, we find on the same (south) side, a prominent and massive pile of granite, sculptured by nature so as to suggest its name of "Cathedral Rock." Just beyond are isolated columns of granite, at least 500 ft. high, standing out from, but connected at the base with, the walls of the valley; and these graceful pinnacles, graced by the winds and rains, well deserved to be called "The Spires." In fact the whole side of the valley along this part of it is fantastically but exquisitely carved out into forms of gigantic proportions, which, anywhere else, except in the Yosemite, would be considered objects of the greatest interest.

On the north side again, beyond El Capitan, is a triple group of rocks, rising in steps one behind the other, and known as the "Three Brothers," and from the summit of the highest, "Eagle Peak," there is a superb view of the valley and its surroundings. As you step on the crest and your eye glances over the vast field of wonder, before and beneath you, an overwhelming feeling of awe and bewilderment pervades the mind, for you look down perpendicularly almost 4,000 ft., and look up again to see mountain peaks quite 5,000 ft. above you. Just below is a large stream surging on to make the mightiest leap recorded; it shoots down at lightning speed 2,600 ft. and you realize, at least in some degree, the immense height of the Yosemite falls. This cascade, if not the most stupendous feature of the Yosemite, is at least the most attractive of the valley. All the accessories of this fall are of a character worthy of and commensurate with its immense vertical height, so that everything is added which can augment the impression which the descent of so large a mass of water from such a height could not fail, by itself, to produce. This fall though only 30 ft. wide at the start, widens, out, so great is the mass of descending water, probably to 300 ft.; and like Bridal Veil, gains in its headlong descent; a vibrating motion peculiar to themselves, with an effect indescribably grand.

Beyond the Yosemite falls are the Royal Arches, under which we camped on a sandy meadow amidst pine trees, which, though large, were dwarfed by the surroundings. East of this again is the "Washington Column," a rounded columnar rock; and surmounting this and the Arches is the "North Dome," the latter made up of concentric plates of granite. Here is where the valley forks, the left-hand branch containing the beautiful pool called "Mirror Lake," above which rises the "Half Dome," whose face next the lake is absolutely vertical for 1,500 ft. The right-hand fork, or Illilouette, is but rarely visited, as it is rough and difficult to climb; but the central canyon carries the main stream or Merced river, which descends 2,000 ft. in two miles, making, besides innumerable cascades, two grand falls. The lower is the Vernal fall, a perpendicular sheet, with a descent estimated at 475 ft., which is seen to great advantage from the base. Here, however, the visitor is on a narrow, steeply-sloping mountain ledge just over the raging torrent. The rocks are always wet with spray and consequently very slippery. Some of our ladies coming upon the fall unprepared were blinded by the water, and terrified by their apparent danger.

A remarkable parapet of granite, just breast high, at the top of the cliff over which the water flows, looks as if made on purpose to afford the visitor a secure position from which to enjoy the scene. Above the Vernal falls is a succession of cascades and rapids of great beauty, and beyond these again is the grand Nevada falls, environed by majestic scenery. The "Cap of Liberty," on the north side of the river, is a stupendous mass of rock, rising 2,000 ft. above its base, all the more imposing because isolated and nearly perpendicular on all sides.

This short sketch of the salient and most striking points in the walls of the Yosemite, every portion of which is sublime, necessarily omits others, which, though of great beauty, cannot be even so much as mentioned for want of space.

One word as to the supposed cause creating

this unique valley; the most natural explanation is that suggested by Prof. Whitney, viz: That the bottom sunk down to an unknown depth, and the vast mass of detritus which must have fallen from the walls, has gone to fill up the abyss opened by the subsidence. The atmosphere of the valley is exhilarating, tonic and delicious; the memory of the scene, a joy forever. The Yosemite is a Government park, given to the State of California in trust, "on condition that the premises shall be held for public use, resort and recreation;" but I regret to say that this commonwealth has ill fulfilled the trust she accepted, by neglecting to provide money to keep the roads, etc., in decent traveling condition.

THE SEQUOIAS.

On our return we stopped in the Mariposa group of big trees, which, though about 16 miles from the Yosemite, is included in the Congressional grant to California. Though these trees extend 120 miles north and south along the Sierras, they are mostly gathered in eight or nine distinct groups or groves. They are the largest and most interesting tree in America, and certainly the grandest and most impressive productions of the vegetable kingdom.

The genus, named in honor of Sequoia, an Indian chief of the Cherokees, who invented an alphabet and written language for his tribe before the whites had heard anything of it, will always keep his memory green.

There are several fossil species of the *Sequoia*, one being found in Greenland, but the *S. gigantea* is exclusively limited to the Sierras, on which it extends vertically 2,000 ft., while its twin brother, the redwood, *S. sempervirens*, is strictly a seaboard tree, and confined to the Coast Ranges of California and Oregon. The tallest specimen of the big tree is 325 ft. high, and the one of the greatest diameter was 27 ft. through; and the age of the oldest one whose rings have been counted was 1,300 years. The cones are about two and a half inches in length and about two inches in diameter. The seeds are much sought for, are widely distributed and readily vegetate, so that millions of plants, it is said, are now growing. Though so large a tree, yet it must yield the palm to the *Eucalyptus amygdalena* of Australia, of which one specimen reaches the enormous elevation of 480 ft., thus overtopping the tallest *Sequoia* by 155 ft.

The following itinerary of the route to Yosemite will prove of interest to those proposing to make the trip, and I give the distance from point to point.

From Santa Barbara to Gaviota.....	40 miles
To Ballard's.....	18 "
" Central City.....	24 "
" San Luis Obispo.....	30 "
" Paso Lobos.....	30 "
" Pileto Ranch.....	32 "
" Low's Mountain.....	30 "
" Soledad.....	43 "
" Natividad.....	25 "
" Gilroy.....	28 "
" Bell's Station.....	20 "
Cross Contra Costa Mts. via Pacheco Pass.	
" Los Banos.....	30 "
Cross San Joaquin river at Dickens's Ferry.	
" Merced.....	40 "
" Snellings.....	16 "
" Coulterville about.....	30 "
" Brown's Ranch.....	25 "
" Big Meadows.....	25 "
" Black's Hotel.....	8 "

A RETURN IN 1881.

Our last year's trip as outlined above was so satisfactory that we start again by May 15th, with 3 wagons, 14 people, 2 (combined) cooks and drivers, 6 saddle horses, to camp, to the Yosemite, to spend two months in the valley. Can't you come in and camp with us? I propose to hold two weekly camps fires, Wednesday and Sunday, for visitors. If you know any "saw-bones" looking for a job, send him in to spend his summer in the valley. His presence will create a crop of patients.—*Horace J. Smith, in Rural Press.*

SAXIFRAGE.—Messrs. Garreau and Machelart, Paris, have extracted from the stems of the saxifrages, tannin, starch and a new proximate principle, bergenine, which possesses valuable medicinal properties, and may rank between quinine and salicine.

RAILSIDE HORTICULTURE.

The Central and Southern Pacific railways have done a good thing for the State by their system of tree planting beside their tracks. We have been pleased also to see here and there a switch-tender so imbued with the love of the beautiful that he has embowered his little cabin with a fine growth of vines and surrounded it with miniature flower beds. There is also a disposition in some towns to beautify the surroundings of the railway stations. The Dwight-way station, in Berkeley, is enclosed in a pretty little park, arranged under the auspices of the Berkeley Neighborhood Improvement Society. There is room for much more good work of this kind all over the State, for many stations are unsightly places; as inhospitable and bare as neglect can make them. This is exceedingly unfortunate, for many reasons, and should be changed. First impressions are very strong with many persons and if one is met at the station, when descending from the car steps, with a view of desolation and unthrift, it may take many miles of flower gardens afterward to win a good opinion of the town. If the stations were made over into little oases of shrubs and trees the effect would be quite different. Each village and town should have a pride in a work of this kind. It would be comparatively easy if the people would interest themselves in it. We are of the opinion that the railway company would furnish most of the trees and shrubs, and then all that the people need do is to see that they are kept in condition fit for growth. There is no telling how wide reaching the influence of such improvements might be. It is quite possible that the picnic character of the surroundings would impel the station loafers to indulge in an occasional clean shirt, and the agent might tread the platform with polished boots. Even such great changes as these are quite within the possibilities.

Railside and station horticulture is not at all a new idea. It is practiced quite generally in the older States and abroad. The New York Tribune recently noted facts in this connection, stating that there are some pleasing examples of railway gardening in Maine. In Pennsylvania many of the station areas are brightened by the smiling beauty of flowers and the graces of foliage. In Europe, where there are more people with less to do, and where the shorter lines of roadways of all sorts can be kept on that account, in garden trim, it is common to see at every little country station, however lonely and retired, beds of bright flowers edging the walls and shining in the windows. All stations are inclosed there; the gates being opened from the gatekeeper's lodge for every passing vehicle. Here, each planted area has necessarily its own fence, all around being entirely open. The cuttings near Paris are planted all over the slopes with American locusts.

As we have hinted before, California has already some good examples of what we would make prominent. There are also some beautiful spots along the dreary overland route through Nevada. We would have a thousand times as much of it. Which town in California will have the prettiest station? It is time now to plan and next fall to plant.—*Exchange.*

SUBMARINE PHOTOGRAPHY.—Improvements are said to have been made in submarine photographic apparatus, by means of which views have been taken near Glasgow, at a depth of ten fathoms underneath the water. One of these views, taken in the bay of that city, shows distinctly a sandy bottom, with a large number of boulders covered with seaweed, and an old anchor; also, in the shade, three mooring cables, belonging to small yachts.

A COUNTRYMAN from New Hampshire, who had never heard of a bicycle, came to Boston, and when he beheld a youth whirling along upon one of those airy vehicles, he broke out into soliloquy thus: "Golly, ain't that queer? Who'd ever spect to see a man ridin' a hoop-skirt."

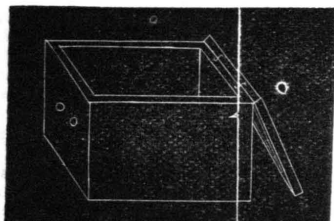
PHENOMENON PRESENTED BY VORTEX RINGS.

Our readers are all familiar with the peculiar appearance of vortex-rings, as they frequently result from the discharge of cannon or from the sudden discharge of steam through an open top locomotive stack. Professor A. E. Dolbear, of Tuft's college, Mass., has been making a careful study of the peculiar phenomenon, connected with these rings, and to facilitate his study has improvised a very simple apparatus for their production, which may easily be constructed by any person who may be interested in this curious study. We copy from *Science*:

1. If one vortex-ring strikes another vortex-ring upon the edge the two rings will bound away from each other as though they were solid elastic bodies, each one vibrating as it recedes.

2. If one vortex-ring overtakes another ring, both moving in the same straight line, and both are of the same size, then the forward one will expand in diameter, and the latter will contract in diameter and will go through the forward one, when each will return to its original dimension. At the same time the forward one will have its velocity retarded while the other will have its velocity increased, and it may overtake the forward one and go through it.

3. If a vortex-ring passes near any light object, as, for instance, a silk thread suspended,



or better still a small cloud of smoke or ammonium chloride dust, the latter will be seen to be apparently repelled from the front of it, but attracted and drawn into the ring from the rear.

4. If a vortex-ring be projected parallel with any surface, and at not too great a distance from the surface, the ring will move in a curved path toward it and strike it.

5. If two vortex-rings are projected so as to start in parallel lines near to each other, they will approach each other until they touch, when they may be either broken or else bound away from each other as in the first case above.

6. If two vortex-rings having the same rate of rotation be started in lines parallel to each other, and at not too great a distance apart, they will not only approach each other, but they will combine to form one ring, which continues to move in the same direction.

7. The combination is effected by the breaking of each at the point of contact, and the welding of the opposite parts of each ring to form one ring with twice the diameter.

8. These rings may in like manner be combined into one.

9. The structure of the vortex-ring is concentric, that is, a cross section of a ring generally shows a series of several concentric circles, with a hollow center. The middle of the ring appears to be a cylindrical unoccupied space.

As experimental work with such rings is very entertaining, as well as suggestive of the behavior of the real atoms of matter, it may be well to give the simple instructions necessary to perfect success.

Provide a cubical box with dimensions about a foot each way, having a swinging back frame, over which is stretched a piece of stout cotton cloth. On the opposite side, two or more inch-holes may be bored two inches apart. Pour some strong hydrochloric acid into one saucer, and some strong ammonia water into another. Set the two into the box, and shut down the

door. The box will at once be filled with the white fumes, and a tap with the finger upon the cloth back, will send out well formed rings.

The phenomena one to five, can best be seen by employing only one of the holes, so as to form but a single ring. By striking the cloth a little harder the second time than the first, the second ring may be made to overtake the first, and if it is desirable to exhibit the rings to a room full of people, there should be but a single hole in front, and that one about three inches in diameter; the rings can then be projected with force enough to make them go 10 or 15 ft. from the box.

The other phenomena can best be studied by using only small holes, and tapping gently. The rings will come together within a few inches of the box. It seems to be essential that the two rings that combine, should have the same rate of rotation, a matter easily secured by forming the two at once in the above described way, but well nigh impossible, if one is formed after the other.

It is sufficient now to remark that the new phenomena described above, stimulate in a very striking way, what we call gravitation and chemism.

MALLEABLE CAST IRON.

In a paper read by M. Fourquignon before the French Academy of Sciences on malleable cast iron, he states that, as a bar softens, one observes throughout the mass an abundant deposit of amorphous graphite. Matters stand thus when the bar lies in an inert mass, as in anthracite coal; but when the pig iron comes in contact with a substance capable of burning or absorbing the carbon, a secondary reaction sets in. The liberated carbon having disappeared from the superficial zone, the equilibrium determined by the heat undergoes a slight change. A portion of the graphite from the lower strata returns to its combination, and ascending to the surface, disappears, and is replaced in its turn by another. The phenomenon continues until the average composition of the bar corresponds to a certain minimum of carburization of the iron, varied according to the circumstances of the annealing process.

A proportion of manganese, even below 5-1-000 gradually arrests the softening process until it ceases altogether. The pig, of course, continues to lose carbon by oxidation, almost as much in fact as when it is pure, but the manganese resists the production of graphite and retains it in combination in the metallic mass. The silicon may, to a certain extent, saturate the manganese and drive out the graphite. He finds these explanations based on the following facts, as elicited in the course of his experiments: (1.) Pig iron which is truly malleable always contains graphite; (2.) pig may lose carbon, and yet remain brittle if graphite be not formed, or if the quantity existing before the annealing process be not augmented; (3.) pig may become malleable without losing a sensible portion of its total carbon, the annealing being effected by the medium of coal, the co-operation of an oxidizing agent not being indispensable to the softening process; (4.) if silicon be added to a manganiferous pig the metal is improved by annealing.

AN ELECTRIC SOLDERING IRON.—Mr. Ball, of Philadelphia, has patented a soldering-iron capable of melting the hardest solders, as those of gold and silver, by electricity. The electrodes pass through and project beyond the handle, and are connected with a ball of platinum; this, when battery connection is complete, becomes heated to any required degree, and the desired soldering is readily affected.

A NEW STEAM BOILER.—A new form of steam boiler, invented by Mons. Bernard, has been tested on a French vessel with such satisfactory results that the naval authorities in France have directed a careful examination of it, with a view to its adoption for war steamers. It is shaped like a gasometer receiver, and its chief advantage over other boilers is said to be superior economy in the consumption of fuel.

HOLLOW STEEL SHAFTING.

Hollow steel shafting is quite a new idea, and seems to be coming into quite extensive use in England. Specimens shown at the recent Manchester (Eng.) Exchange are said to have created quite a sensation among the iron and steel men. A large iron firm in Pittsburg, Penn., have experimented some in this direction, and are now prepared to make this a specialty. In a recent communication to the *American Manufacturer*, they say:

"Casting hollow steel ingots for shafting and pipes will be one of our specialties in our new Bessemer plant, and we claim, and think we can prove, that we were the first to cast hollow steel shafts and pipes which could be rolled as other steel or iron is rolled.

"We will, within a few days, cast a steel pipe 16 ft. long, 14 inches diameter outside, and 10 inches inside, weighing 4,500 lbs., which could easily be rolled to 40 ft. in length.

"Nearly two years ago we tried to interest two of our largest pipe manufacturing firms in rolling steel pipes, but without success.

"We will run our new plant on heavy castings, and shaped steel ingots for channels, beams, angles, hollow shafts, and any work which cannot easily be shaped with rolls.

"We intend to pay particular attention to making these special steel ingots of low or high carbon, of ordinary Bessemer or of refined Bessemer, made under our own patents."

THE REESE FUSING DISK, to which quite full allusion has been made in these columns, seems to have attracted considerable attention in England, and one party, at least, has undertaken some experiments to determine its practical utility. The results of those experiments, with illustrations, were furnished to *London Engineering*, from which journal they were copied into the *Scientific American*. The conclusions were anything but favorable to the practical value of the invention. In a subsequent number of the *Scientific American*, the inventor, Mr. Reese, appears with a communication, in which he says: "I have written *Engineering* that the statements made in the article are so astonishing, and the work exhibited is so radically different from any that I have ever seen produced by the fusing disk, that I think the gentlemen who furnished the article and cuts made the statements contained in the article have made a mistake, and I asked for their address that I might give them attention first." Mr. Reese further reiterates what he has heretofore said and claimed in regard to his invention, and expresses his willingness to explain and maintain his theory, and cheerfully accept the result of the discussion, whatever that may be.

THE RELATION OF THE ATOMS OF CHEMICAL ELEMENTS TO ELECTRICITY.—Prof. Helmholtz, in his recent Faraday lecture, affirms that the atom of every chemical element is always united with a definite unvarying quantity of electricity. This quantity stands in close connection with the combining power of the atom, or its quantivalence. If the amount of electricity of the monad atom be taken as the unit, that of the dyad is two, that of the triad three, etc. Prof. Helmholtz says: "If we conclude from the facts that every unit of affinity of every atom is charged always with one equivalent either of positive or negative electricity, they can form compounds, being electrically neutral, only if every unit charged positively unite under the influence of a mighty electric attraction with another unit charged negatively. This ought to produce compounds in which every unit of affinity of every atom is connected with one—and only with one—other unit of another atom. This is, indeed, the modern chemical theory of quantivalence, comprising all the saturated compounds.

WHEN you hear a mother calling to her son to "come here and shut the shutter," and hear him respond: "It is shut, mother, and I can't shut it any shutter," do you ever pause to analyze the delicate beauties of our language?

THE MAGNETIC NEEDLE, AND MINING PLANS.

Recent events in connection with mining operations show most forcibly the great importance of having the working plans of mines almost mathematically correct, yet we have had plain proofs that many, considered in every way most reliable, have just been the reverse. Many of the mining surveys now in use, says the *London Mining Journal*, cannot be relied on within five or ten yards at a distance from the shafts, and the protracting of one line from the preceding ones, and so on in succession, perpetuates every error, and is a system of "judging," as it is termed, that should not be adopted by the mining engineer. In many instances the taking of the magnetic variations have been entirely disregarded, and this has led to many errors appearing on plans. In taking the meridian there was a great deal of difference in the observation taken on one day and that observed on another. To some extent, no doubt, the atmosphere affected the needle, for oxygen being a component part of it was a substance that attracted the needle, and it was also probable that the heat of the sun also affected it. The difference in the weather and the seasons of the year, it may be taken, had a tendency to a variation of the needle from the true meridian. To determine the deviation of the plane of the meridian, or of the due north, it was usual for the direction of the pole star to be taken while the first star in the tail of the constellation of the Great Bear was passing precisely underneath the polar star. The true pole was a point in the line joining the two stars a little removed from the pole star, just opposite to the next star which is visible to the naked eye. It has been said that greater accuracy has been obtained by taking what is termed the "solar meridian," but how this can be done does not appear to be known to many of our mining managers. One gentleman has informed us that he has taken it frequently by a transit instrument; all that was required being to find the proper time the sun was passing the meridian of a certain place, and then fixing, on some important station on the surface, make the observation at the proper time. The Ordnance maps were generally tolerably correct, and they were used to find the longitude of the place wanted or required. As to taking the time, which, of course, was required to be most exact, it was done by ascertaining the Greenwich time at a place and then correcting it by means of calculation, so as to obtain the mean time at Greenwich.

As to old mining plans, as a rule, it is no doubt correct to say that if they were now brought into use, to have the workings correctly carried on such could not be done without going and comparing them or getting the true meridian again. But it has been stated by one of our mining engineers who has paid a great deal of attention to the subject, that by adopting the solar meridian there would be a universal similarity in all plans, as every plan would be drawn on its proper meridian. Every plan throughout the country would be as parallel as possible, and by that means they would be able to compare them at once. However, the taking of the solar meridian as yet has not been adopted by many of our mining engineers, who consider it of more importance to know the variation of the compass from a certain line. Still it has its advocates, whose number will in all probability increase, for it has its attractions, especially among the young members of the profession.

One of the simpler methods by which the meridian can be approximately determined is by drawing a thin rod vertically on a drawing board or some level surface, the shadow cast by the rod being measured a short time before midday, and the vicinity marked. Through the point with the rod as a center the arc of a circle is struck, when the extremity of the shadow again touches the arc after midday, the point where it touches is marked, and midway be-

tween the extremities of the two shadows may be found the point, which is in the same meridian as the rod itself. It is, however, most desirable for future reference to mark by strong stakes at several chains distance on either side of the shaft the meridional line which has been taken as a base for the survey. In the surveying of boundary lines on the surface, or of the mainways in the skeleton of the survey underground, the compass should be entirely discarded. Where very great care has not been taken it may be said the use of the magnetic needle underground, where the greatest accuracy is so necessary, has led to many errors which have led to litigation and loss of time by driving in the wrong direction. Surveying, however, can be done without a needle, especially where there is only one shaft, and this can be effected by two thin copper wires carrying heavy weights at the bottom immersed in buckets of water to diminish the oscillation, a deal straight edge being fixed so as almost to touch each wire at right angles to the lines between them. The extremes of six or ten successive oscillations should be marked with a pencil on each straight edge, and the mean taken with a pair of compasses, and the wires fixed to such mean points. Standing behind the wires the surveyor should next send a candle along the heading as far as it could be seen, and fixed in a line with the wires, and this operation should be repeated in the opposite direction, placing a candle against one of the wires, and to check the whole it should be seen whether the three candles are exactly in line. The latter, being the basis of the whole underground survey, should be permanently marked by a few pegs driven into the roof with nails in them, or by some other marks. On the surface permanent pegs should be placed at some chains distance on each side of the shaft in a line with the wires. By this means there is obtained a line on the surface exactly corresponding with the base line of the operations underground.

This system has been found to be a really good one after the most severe tests that it was possible to have, not only in ordinary mining but in tunnelling as well. Surveys for the purpose of ascertaining the extent and direction of underground workings should be so trustworthy and accurate as to enable the surveyor to show from this map or plan the very points on the surface below which the mineral has been taken away, and to what extent the subterranean excavations have extended. This, under ordinary circumstances he can do by taking the horizontal dimensions of the surface area from which the mineral has been excavated beneath. Another means frequently used in surveying was by having three stones in a line, and testing the compass frequently, when a correct survey could be ensured by a competent surveyor, and this could be done in thin seams of minerals where the theodolite could be brought into use. The magnetic needle, however, was a rather favorite mode of surveying, but in connection with it; but it was affected by magnetic stones and ironstone. Still, in making surveys of mines there can be no question as to the importance of the taking accurate note of the magnetic variations, so as to ensure the accuracy of mining plans, and these have at many places been entirely ignored, and with serious consequences to the owners of mines. In one case we are told of two beds of coal which were worked simultaneously according to the plans, and the result was that there was a difference of several chains, which greatly astonished the engineers. Only recently, too, in an action tried in one of the Superior Courts, heavy damages were awarded to a mine-owner for trespass and getting minerals by the party who had gone beyond his boundary, owing to the inaccuracy of the plans. To have plans accurate and in every way reliable it has been suggested that there should be a long line on the top, showing the variation of the compass at every time, so by that means no errors could well arise. However, the importance of accurate plans in connection with every description of mining operations cannot be too forcibly expressed, nor can the best known systems be too often brought

under the notice of mine managers and mining engineers, on whom so much responsibility rests for the safety of those employed under them, as well as for the security of the property placed in their keeping.

MINERALS CONTAINING SILVER.

Only a small proportion of the large amount of silver which is at the present time produced for commercial purposes is found native, and then not pure, as it is generally alloyed with a little copper, gold, platinum, mercury, arsenic, iron, lead, bismuth or antimony.

Native silver occurs in masses or in arborescent and filiform shapes in veins traversing gneiss, schists, porphyry, and other rocks; it also occurs disseminated in native copper and galena, but usually invisible to the naked eye, therefore requiring the aid of a good microscope to determine its presence.

Silver when pure has a metallic luster. Color and streak, silver white. Ductile. Hardness, 2.5-3. Specific gravity when pure, 10.5. Minerals containing silver are found in veins of nearly all descriptions, and even in sea water minute traces have been found by a careful analysis.

Silver is a metal extensively used in the arts and manufactures, and many products contain more or less proportions.

Silver will be found in the products as well as in the refuse from nearly all lead and copper smelting works, if carefully looked for, and a very small amount can be determined with accuracy. Any mineral or alloy containing what is called a "trace" of silver about one-half ounce to the ton of 2,000 lbs., can be assayed, and the metal extracted and determined with accuracy.

Mr. George Attwood, in his "Practical Blow-pipe Assaying," gives the following list of principal minerals containing silver:

Argentite, silver glance containing 87% silver, with sulphur.

Stephanite, brittle silver ore, containing 68% silver, with sulphur and antimony.

Proustite, light red silver ore, containing 65.4% silver, with sulphur and arsenic.

Pyargyrite, dark red silver ore, containing 59% silver, with sulphur and antimony.

Argentiferous grey copper ore (fahlerz), containing from 5.7% to 18-31.8% silver, with antimony and sulphur.

Argentiferous sulphide of copper, containing 53% silver, with sulphur and copper.

Polybasite, containing 72-94% silver, with copper, sulphur, arsenic and antimony.

Chilenite, containing 86.2%, with bismuth 13.8%.

Bromyrite, containing 57.4% silver, with bromine 42.6%.

Cerargyrite (horn of chloride), containing 75.3%.

Embolite, containing 60-72% silver, with bromine and chlorine.

Sternbergite, containing 33.2% silver, with iron 36%, and sulphur 30%.

Iodyrite, containing 46% silver, with iodine 54%.

Selenic silver, containing 11.6-42.8-65.5% silver, with selenium, copper and lead.

Hessite, containing 62.8% silver, with tellurium 37.2%.

A NEW line of railroad is to be constructed from the main line of the Missouri-Pacific at the Pacific junction, to Carthage, Mo. This line will open up a new and very rich section of Missouri and will shorten the through line to Texas by about 30 miles.

ADVICES from Paris say that *La Liberté* announces that Col. Flatters' Trans-Sahara Mission will be taken up, and the murder of Col. Flatters and his followers avenged. The new expedition will consist of a regiment of 700 men mounted on camels.

TO MY WIFE.

Dear wife, 'tis five-and-thirty years
Since you and I were wed;
It seems not half so long to me,
Time has so lightly sped.
Yet all our way has not been smooth,
Our days not always bright,
But God has tinged our darkest clouds,
With His own loving light.

Most of the friends that 'round us stood,
That lovely April day,
To hear our vows, and wish us joy,
From earth have passed away;
But nearer still death's shadows came,
As we passed down the years;
Four little graves, laid far apart,
Have witness borne of tears.

One after one, our cherished plans
Of home with plenty crowned,
Have met misfortune's blighting touch,
And fallen to the ground;
And yet, somehow, we've got along,
Despite our useless fears,
For God has led us side by side,
These five-and-thirty years.

What though we've had some stormy days,
Our hearts are happy still,
For surely, in the checkered past,
We've had more good than ill;
So, not one mournful chord I'll touch,
To mar our joy to-day,
For light, you know, is doubly sweet,
As darkness rolls away.

While struggling through life's toilsome way,
It oft has grieved my heart,
That one endowed with gifts so rare,
Should share so dull a part;
But genius ne'er can be suppressed
Though humble be the lot;
Such taste as thine can almost make
A palace of a cot.

Thus, while we've drifted here and there,
With fortunes good or bad,
'Twas thine to cheer the way and make
The best of what we had;
And well, my dear, thou'st done thy part
In every trying day,
With patience, love and taste combined,
To smooth life's rugged way.

To bear each other's griefs and cares,
Has made our burdens light,—
To share each other's happiness,
Has made our joys more bright;
Not all the sweetest flowers of earth,
Are borne of cloudless skies—
Full many a gem of clouded birth,
Shall bloom in paradise.

The sweetest lesson we have learned—
And yet are learning still—
Is just to leave it all with God,
And have no other will;
Receive the mission of our lives,
And pray, as it is sent,
"Give us this day our daily bread,"
And therewith be content.

But time, my dear, is on the wing,
Nor would we stay his flight,
The shades of time will soon be lost,
In God's eternal light;
Then, as we stand before His face,
O, will it not seem good,
To hear the Master say, again,
"She hath done what she could."

Los Gatos, Cal., April 23, 1881.

CHIPS.

A PEDAGOGUE told one of his scholars, a son of the Emerald Isle, to spell hostility. "H-o-r-s-e, horse," commenced Pat. "Not horse-tility," said the teacher; "but hoss-tility." "Sure," said Pat, "an' didn't ye tell me, only the other day, not to say hoss? Faith! it's wan thing wid ye one day, and anither the nixt."

WHY should a red cow give white milk? was the subject for discussion in a suburban agricultural club. After an hour's debate the secretary of the meeting was instructed to milk the cow, and bring in a decision according to the merits of the milk. It was blue.

DONALD: "What's this?" Waiter: "Broth, sir." Donald: "Hoo ay! Yis! A pea's here and a barley's there, and the wan whustlin to the ither 'Where are yo-o-o?'"

A WOMAN in Maine, attempting to talk through the telephone for the first time, exclaimed: "How do you do?" and then dropped into a chair, protesting that she "couldn't say another word; she felt as if she had been talking to a ghost!"

GIVING LESSONS.

A smiling, gentle-eyed lady came to visit me one afternoon; with her came her little son, Walter. Like his mother, he was fair, with a bright, smiling face. But for a slightly cruel expression about his eyes, so different from her eyes, and so unusual for one so young, he would have been a handsome boy.

Soon he went into the yard to play; in a short while we heard a flutter among the poultry. On going out we found that he had been throwing stones at them and lamed a pet hen. Kitty ran in dismay to the top of the barn, but even there she was not safe from his cruel aim; while poor Towser hid in his kennel, only to be found and rocked or whipped out. Even Crummie, who was lazily cropping the young alfalfa, was struck by a sharp stone, so that she broke the frail rope with which she was tethered. In vain his mother entreated, then commanded him to play gently; he would obey for a while, but his love of giving pain to the docile creatures would get the advantage of his regard for her commands, and another stone would be thrown, or Towser would suffer. His mother had no peace; she was deeply mortified, and said: "I don't know what to think of Walter; he is so cruel. I have tried every way to cure him and failed. I cannot convince him that it is wicked to give others, or even animals, pain. He pulls Carrie's hair most unmercifully when he thinks I am not near; and only last week, when I was ill, he killed several of my young ducks."

I could not account for it. I knew that her daily life was filled with acts of kindness. Having my full share of Mother Eve's curiosity, I have been wondering ever since what taught that otherwise sweet child to be so cruel. Well, this morning the problem was unexpectedly solved, so with the hope of doing some good I have concluded to tell the many readers of the PRESS about it.

While at my morning work, I heard several hard blows from a heavy whip, then every few minutes the words "Get up!" I went to the window and on looking into the street saw a wagon heavily loaded with lumber, and on that a number of bales of hay. The jaded horses could not draw the over-loaded wagon across the shallow ditch, and a man, whom I recognized as Walter's father, was beating them most outrageously; first with the whip, then a stout stick, then a chain. My heart grew sick with sympathy for the poor brutes as they shrank and trembled beneath the hard blows. I was about to turn from the window, when standing a few yards back I saw a little boy. Yes; there stood Walter receiving a lesson in cruelty, which his gentle mother's admonitions could not overcome for months, if ever.

This incident recalled another: Some years since I asked a lady who had reared a large family of sons, "Did you have any great difficulty in training your boys to be good men?" I remember well her reply. "Yes, one: to keep them from swearing. My oldest, little Willie, was my pride, with his large dark eyes, rosy cheeks and waving hair, but above all his manly ways. One morning when he was six years old he was in great glee, riding his rocking-horse. I sat watching him with a happy heart. How proud I was of my noble little son, whom I had striven to train aright. I was congratulating myself on my success, when suddenly he fell from his horse, and from his lips came a great oath. I was shocked to tears. He was not injured, but that oath from the mouth of my precious boy, how it hurt me!

"I talked earnestly with him and told him how wicked and unmanly it was to swear, but I could not fail to note the incredulous, half defiant expression in his eye; suddenly he looked firmly at me and said, 'Mamma, papa said it and I can say it too!' I knew not what to say. I wanted him to love and respect his father, so I tried to shield or excuse him by explaining to Willie that his father had no mother to care for

him, and learned that wicked habit in childhood and now in manhood, when suddenly angered he sometimes swore before he thought, (which I knew must have been the case when Willie overheard him), but it was a painful task, and I could never tell how many anxious tearful hours that one bad habit of their father cost me and our sons."

While mothers are often at fault in training their children, we know that their mistakes are a source of constant regret and that if fathers felt the responsibility resting upon them as keenly as mothers do, they would at least aid them by striving to avoid giving such lessons. Will the fathers who read the PRESS think of these but too true incidents?

San Bernardino, April 1st.

"Indian" Sheep Shearing.

The middle of April finds the sheep husbandman in the vast San Joaquin valley busy with shearing his flocks, and afterwards giving them "a tea-totally orthodox baptism" in a vile-looking decoction of some one of the so-called celebrated patented anti-scab remedies, which have come into popular use during the past few years. In Fresno county Mr. and Mrs. Lo (the good Indians in this instance) seem to take the lead in shearing. At W. A. Caruthers' sheep camp, five miles southwest of Washington colony, was recently to be seen perhaps an average Indian sheep shearing scene. First the strange traveler over the open plain, horseback, hot, hungry and thirsty, sees a dozen white tents pitched in a low swale of the land, with wagons, smoke, a dozen, more or less, fat squaws—the latter (mingled with dogs, muchachos, muchachas and papposes) cooking "grub." A little beyond, 29 Indian ponies, each trailing a 40-ft. lariat, are arranged along the watering trough. Hair from manes and tails having been used for riataes, the flies are clubbed with 20 and 9 stub tails. Nine out of 10 of the ponies own from one to half a dozen sores on their backs. One most horrible sore drips to the very ground.

On rising ground near by, is a long shed, fenced into four or more divisions, each having a pen holding 30 or more sheep, separated from the main flock of 7,500. In each apartment of the shed are five or six Indians and one or two squaws shearing with all possible energy. The rapidity with which these dusky men shear a fleece would certainly astonish a down East "shepherdist." A single hand is said to have sheared 100 sheep in a day. The women shear better than the men, but not so fast. All are paid by the piece and they board themselves. The fleeces are handed over to the front as fast as sheared, where each is tied into a package by itself, with the inner or cut side of the wool outward. They are then directly thrown into a sack, and a tolerably heavy man, weightier—and evidently better fed than the average newspaper scribbler—treads them down as the sack is filled up. After the stranger has accomplished a due amount of staring and foolish querying, he is taken over to the cabin by Mr. C., and paid off with a good dinner, and wholesome advice.

A STATION INDICATOR.—Many devices have been proposed for a practical railroad station indicator; but heretofore with very little success. Recently, however, a Hartford, Conn., inventor seems to have hit upon a device which is so promising of coming into general use that a company has been organized for its manufacture. It is described as follows: An ornamental box contains a roll of lettered canvas or other material, giving a list of the stations in their order, and over the opening where they are exhibited is printed "The next station is." By successively turning the roll of canvas the stations appear in due order, and at each change by a clever contrivance a shrill little whistle is blown for a moment, thus attracting the attention of all persons in the car. The whole thing is worked automatically by compressed air, and is all controlled by the engineer.

THE MALE SEAL.

The illustration presented on this page, a male seal, is taken from Capt. Scammon's "Marine Mammals of the Pacific Coast," of a full-aged male, an individual of bulk and strength, and of a surly expression. These old males are cruel, despotic wretches, and the account of their deeds as laid down by Scammon leads one to anything but admiration of them. They fight mercilessly for positions on the rookeries, and they are also most cruel to their female companions. It is no unusual occurrence in the height of the season to see two full-grown males fight by the hour, exhibiting much tact in their assaults upon each other, both endeavoring to gain advantage by some adroit movement—at times making a savage lock with their mouths, or seizing each other by the fore flippers, or gashing necks and bodies with their sharp, tusk-

viewing his family, scolding those wives which crowd or disturb the others and fiercely driving off the others. This surveillance keeps him actively occupied. In two or three days after landing on the rookery the young seals appear, weighing about six pounds each. The young seals are very vigorous and soon begin nursing. The mother manifests strong affection for her young.

NITRATE OF SODA.

The discovery of nitrate of soda near Brown's station, Nev., may lead to results vastly important to the Pacific slope and to the country at large. This valuable salt has been found in extensive beds only in the province of Tarapaca, among the hills which skirt the coast of Peru. These beds extend over a territory of 150 miles. The hills are covered with a light, sandy marl,

ful. The test is simple and admissible of no mistake. The suspected crystal or salt should be reduced to a powder, and intimately mixed with an equal proportion of charcoal. This, when placed upon a heated iron, a red hot shovel for instance, will deflagrate—will flash like powder—the fire running from grain to grain in a similar manner. The compound is powder minus sulphur. Where it is suspected that the earth is strongly impregnated with the nitrate, take a kettle and fill it two-thirds full of the earth and the remainder with water. Heat it, stirring the while, and when thoroughly mixed and heated, so that the water will have become saturated with the salt, allow the solution to settle. The liquid poured off, the mud will contain the salt, which is secured by evaporating. The crystal is then tested as before. The test is accurate, and may be applied by any one without apparatus.

A good nitrate mine is more valuable than a



THE MALE SEAL.

like teeth. Sometimes several old males are seen together on a separate bench, who are cut in every direction, and apparently had retired from the main herd, being unable to continue the fight in consequence of wounds received.

The old males maintain a rigid supremacy over the young males. The old ones are called by the natives, *seacuth* (married seals). These welcome the females on their arrival, and watch over and protect them and their young until the latter are large enough to be left to the care of their mothers and the young males. The males under six years old are not able to maintain a place on the rookery, or keep a harem, and they are called *holluschuck* (bachelors).

The old males first appear upon the rookeries in the pairing season, and taking their places prevent the young males from landing. Thus they compel them either to stay in the water or go to the upland above. In locating on the rookery each old male reserves a little more than a square rod of space for himself and his 10 or 15 wives. When the space is all filled the old male walks around complacently re-

mixed with minute fragments of shell. When this covering yields and crackles beneath the feet, it indicates the presence of nitrate of soda. On digging a foot or two the salt is found, overlaid usually by a stratum of common salt. Portions of this nitrate of soda are of a pure sugar-like whiteness, other portions being colored reddish brown, lemon yellow and gray. A large portion of the provincials find employment in extracting and refining the salt, which is shipped from Iquique. In 1837 the exportation aggregated 120,000 quintals, England consuming two-thirds and France one-third. The nitrate mines have long been the chief wealth of that section of the country, and their importance can well be imagined, when it is remembered that the Peru-Chilean war grew out of disputes over the revenues of those fields.

Some time ago the State Mineralogist of California, Mr. Hanks, received samples of crystallized nitrate of soda from this county. Tests prove the salt to be of good quality and exceedingly valuable. Mr. Hanks advises prospecting the desert regions, where evidences of volcanic action are present, or where alkalies are plenti-

gold mine. The cost of extracting the salt at Tarapaca, where it is principally secured by the process of lixivation above described, is as follows: Reckoning for each 100 lbs., labor is set down at 62 cents; fuel, 38 cents; tools and powder when blasting is necessary, 12 cents; transportation to Iquique, 75 cents, a total of about \$1.87.

In quantity, the salt sells for about \$8 the hundred lbs. The profit is apparent. The uses to which nitrate of soda is put are numerous. It is substituted for nitrate of potash—saltpeter—to which it is closely allied, in preserving meats as in curing hams, pickling pork and corned beef, the manufacture of nitric acid and various other purposes. Owing to its delinquent properties, it has not been employed in the manufacture of gun powder, although it is not known but in some varieties of explosives it might be employed, if indeed it is not already. Careful search over the regions given over to arid plains and lava beds may result in the discovery of hitherto unsuspected mines of wealth.

THE Yosemite valley is now open to tourists.

WHO SETS THE FASHION.

Who sets the fashions, I'd like to know,
For the little people beneath the snow?
And are they working a weary while,
To dress themselves in the latest style?

There's Mrs. Primrose, who used to be
The very picture of modesty.
Plain were her dresses, but now she goes
With crimps and fringes and furbelows.

And even Miss Buttercup puts on airs
Because the color in vogue she wears;
And as for Dandelion, dear me!
A vainer creature you ne'er will see.

When Mrs. Poppy—that dreadful flirt—
Was younger, she wore but one plain skirt;
But now I notice, with great surprise,
She's several patterns of largest size.

The Fuchsia sisters—those lovely belles—
Improve their styles as the mode compels;
And though everybody is loud in their praise,
They ne'er depart from their modest ways.

And the Pansy family must have found
Queen Elizabeth's wardrobe underground,
For in velvets and satins of every shade
Throughout the season they're all arrayed.

Pinks and daisies and all the flowers
Change their fashions as we change ours;
And those who knew them in olden days
Are mystified by their modern ways.

Who sets the fashions, I'd like to know,
For the little people beneath the snow?
And are they busy a weary while
Dressing themselves in the latest style?
—Josephine Pollard.

CHEERFUL ECONOMICS.

Was Tom Dorchester ever known to do anything with calculation? When his letter came home announcing his hasty marriage, and stating that he should bring his bride to show them "by the last of this week," they laughed and cried together, just as they had always laughed and cried over rash, generous, noble Tom.

They had scarcely possessed themselves of the fact of the letter when Hope came across the garden path, humming a little tune, let herself in at the porch door and stood before them, her white hood on and her crochet work in one hand.

"Why, what's the meaning of all these wet smiles?" she asked in surprise, as their damp eyes looked up at her and waved a welcome.

They gave her Tom's letter. Nobody's voice was steady enough to read it aloud.

"Just like Tom!" she laughed as she folded it.

"But what can we do in this short time?" burst out Charity, unburdening her perplexities. "Our guest-room is perfectly disreputable. We were intending, you know, Hope, to paper and refit it when mother's illness—"

"Yes, I know," Hope rejoined gently, with a glance at the invalid in her easy chair.

"And what sort of impression will it make on a city girl and a stranger during her bridal trip?" continued Charity in a tragic tone.

"Oh! don't despair so soon," remonstrated Hope with a mysterious air.

"We know your arts at decoration, dear child, said Faith, "and with flowers and vines you could make the room a bower, no doubt; but it is too late in the season for them, and even the autumn leaves are gone."

Hope still looked knowing.

"At any rate, let us go up-stairs and survey it all over," she persisted, leading the way.

It was a long, low chamber across the whole front of the house, and had a pleasant outlook from sunny windows. In some places the wall paper was stained and defaced undeniably; the shades were faded; there was none but the indispensable furniture; it looked like a room shut up and forgotten.

"I see very small encouragement there," said Charity, with a shiver.

"And you know, Hope," added Faith, "that mother's long sickness has drained our purse so low we cannot possibly afford the outlay of new furnishings, even if there is time."

"For all that," declared Hope stoutly, merely give me the authority to do just what I like in this room and to command your help where I

need it, and I promise you sha'n't be ashamed of the place when your dainty bride comes into it."

Hope cajoled them all; they promised. How busy they all were after that through the short, dark days, the last of the year! Already the room was clean as it could be. The carpet, Hope decided, would do, because there were some bright rugs in other parts of the house which would conceal it a good deal. She borrowed a little stove that had an open grate. "Because," she said, "nothing has in it such expressiveness of welcome as a blaze." She took down the shades, extemporized curtains of the Turkey red left over from the last tableaux in which she had figured, and arranged over them lambrequins of the gray Clematis down which she had gathered and hung in the attic since early fall. It only needed looping to form the right outline, tying together, and filling in dexterously.

The stained top of the dark old-fashioned bureau was covered with red Canton flannel, and the fringe which finished it put on with brass-headed nails, had been the result of a rummage through a friend's bag of odds and ends. The stiff chairs covered with black haircloth were whisked out of sight. Great-grandmother's straight-backed rocking chair and a couch outlawed this dozen years came down from the attic. The rocking chair had a new red cushion and curtain bows of red ribbon; the couch was decked out in a lavish display of gay, though cheap chintz, and stuffed and pillowed till it made you sleepy to look at it. A low sewing-chair, whose cane seat had broken away so that it was discarded as useless, next engaged Hope's energies. Deftly inserting a piece of cane from another broken seat, she threaded both seat and back in and out with red alpaca braid. The ends were fastened securely underneath, and the intersecting braids formed a sort of diamond-shape block. "Now for a dressing-table!" said Hope. The village carpenter made, at her order, a large, rounded pine shelf, fastened in place on the wall at the height a dressing-table should be by a strong, rude bracket of the same wood. Hope covered the shelf with common blue cambric, a curtain of the same falling from the edge; then she covered this in turn with coarse white muslin, puffed and frilled according to her fancy.

In one corner she arranged a rustic bracket. The carpenter fitted the three-cornered shelf to its place, and upon that she glued sheets of green-gray lichen. She cut from stout brown paper the shape of the bracket lambrequin she wished, then, using the same glue, covered it also with lichens, and when thoroughly dry, tacked it in place along the edge of her bracket-shelf. A great vase of red alderberries stood on this gray bracket, like fire on an altar, and for the three-legged, old-fashioned light-stand she made a basket of wood moss. For this she first bent pliable wire into the shape desired, then wound her mosses on, tying them with thread, and selecting those which grow in thin masses, easily scaled off from the bosc they have chosen.

"But what about the stains on the wall?" asked Faith meekly, subdued with admiration of Hope's exploits. "You shall see," said Hope, as, filling her moss basket with Mitchella vines and winter ferns, she set it in place and brought in a bunch of laurel. With swift fingers she shaped from stiff brown paper the letters of a motto, "Room in Heart and Home," and Faith and Charity helped her cover these letters with small laurel leaves, sewed on with black thread. How cheerful this motto looked when tacked up, and how well it disguised the stained chimney piece! A bough of bitter-sweet, skillfully disposed, covered another defect, and pressed leaves, mixed with the Maiden hair ferns gathered last June, were quite sufficient for all the stains that remained, as they wandered, with a graceful lack of apparent design, about the discolored wall paper.

On the chimney-piece was a rather unhappy-looking shelf, but its failings were smothered with chintz as the faults of the couch had been, and brass candlesticks, with tall tapers ready

to light were ranged there. Hope insisted on presenting one or two simple water-color pictures done by herself—a scarlet vine on an old wall and a stalk of chandelier lilies. * * *

When the shy, pretty little bride was ushered into this room, and looked from the dancing light of the fire to the deep green letters of welcome, from the softly-burning tapers to the quaint pieces of old china which Hope had found stored away and insisted on putting into use or on arranging for ornament, she cried: "O, Tom! I never saw anything so pretty as this, and I never was made so welcome in all my life!"

THE WILLOW AS A PREVENTIVE OF MALARIA.—Mr. Von Lennep, the Swedish Consul, writes from "Mahazik, near Smyrna," to the *London Times*, as follows: "Before the eucalyptus was ever heard of in Asia Minor, I had seen the bark of the willow used as a febrifuge. I had remarked the easy and inexpensive reproduction of this tree, its quick growth in damp places, its excellent qualities for fuel and for agricultural implements, and its great advantages for strengthening the banks of capricious streams, and had thence taken every opportunity after the winter floods to stick willow cuttings along the banks of streams and in other damp places in my property; also to scatter plane-tree seeds in marshy spots. The result has been that, whereas 20 years ago the full-grown trees in this neighborhood might have been counted, a luxurious growth of willows and plane-trees marks my place, fuel is abundant, fever is steadily decreasing, the meandering propensities of the streams are checked, my neighbors have to come to me for agricultural implements, and I have not had to go for timber for rough purposes." It may be interesting to observe in this connection that the comparatively new but well-known antiseptic preparation known as salicine is derived from the bark of a certain species of the willow. It is of a pure, bitter taste and highly febrifuge in quality. It is largely used in various solutions, in surgical operations, and is the most effectual preventive of putrefaction in the system known.

CURE FOR COLD-FEET SLEEPLESSNESS.—The *British Medical Journal* says this is the plan to adopt with cold feet: They should be dipped in cold water for a brief period; often just immerse them, and no more, is sufficient; and then they should be rubbed with a pair of flesh-gloves, or a rough Turkish towel, till they glow, immediately before getting into bed. After this a hot-water bottle will be successful enough in maintaining the temperature of the feet, though without this preliminary it is impotent to do so. Disagreeable as the plan at first sight may appear, it is efficient; and those who have once fairly tried it continue it, and find that they have put an end to their bad nights and cold feet. Pills, potions, lozenges, "night-caps," all narcotics, fail to enable the sufferer to sleep successfully. Get rid of cold feet, and then sleep will come of itself.

A HUDSON citizen said to the young man who visited his daughter that he couldn't afford to have so much wood burned in the parlor stove evenings; the young man must come less often or quit earlier, or furnish his own wood. Next day two cords of nice hard wood were purchased by the young man and piled in the citizen's yard, with a big sign over the pile reading, "for use nights only." That young man means business.

SHE was a Boston girl. She was visiting her Whitehall country cousins. While walking out, several butterflies passed her. "Oh, dear me, what charming little birds. They are perfectly exquisite." "They are not birds, my dear," replied her country cousin, "they are butterflies." "Oh, you don't say so. Then these are the dear little creatures that fly from flower to flower and gather the sweet yellow butter that we use? They are too lovely for anything."

FOWL CHOLERA.

The Department of Agriculture has lately issued an important circular concerning the poultry disease known as cholera, which contains explicit information concerning the character of the malady and its treatment. The suggestions may also be of value in the handling of some other poultry diseases which are liable to spread through the flocks by contagion. Dr. D. E. Salmon, one of the U. S. Commissioners on animal diseases, is the author of the circular from which we quote as follows:

Although the cholera of fowls is an exceedingly virulent and fatal disease, destroying vast numbers of birds of different species, and remaining on premises for years after being once introduced, we are satisfied, after a long series of experiments, that there are points in its natural history which enable us to control it with comparative ease and with a considerable degree of certainty. These points are:

1. The Virus is not Diffusible.—That is, the disease germs are seldom if ever taken up by the air and carried any considerable distance to produce the malady. The virus remains in the fixed form, and is generally, if not always, taken into the body with the food; it is distributed over the grounds, feeding places, etc., in the excrement of affected birds, and the food, drink and gravel are thus contaminated. Healthy birds may be kept in coops within a few feet of the sick ones for months without contracting the disease; but if the former are now placed in the same inclosure with the latter they sicken in a few days.

2. The Virus Must be Carried upon the Grounds Frequented by Fowls before They Contract the Disease.—It is not probable that this disease originates, in any considerable number of cases, in any other way than by contagion. There is a possibility that it may originate in occasional instances by filthy surroundings if closely confined, or by feeding on decomposing substances; but there are few facts to support such a conclusion, and it appears certain that in the vast majority of cases the disease is imported and kept up by contagion alone.

It is thus brought upon farms either (1) with sick or infected fowls newly acquired; (2), with the blood or parts of the bodies of dead birds, carried on the feet of people or brought by dogs or other animals; (3), with infected manure or feathers; or (4) possibly by wild birds, animals (rabbits), or even insects that have contracted the disease or have eaten the blood or bodies of affected birds recently dead. The origin of the disease can generally be traced in country districts, where houses are a considerable distance apart, to recently acquired poultry. It is only in districts more thickly peopled, and then in exceptional instances, that the germs are carried by wild birds or animals or by insects.

PREVENTIVE MEASURES FOR INFECTED GROUNDS.

1. Is the Disease Cholera?—Fowls frequently die in considerable numbers from diseases that are not contagious, and hence it is a matter of primary importance to decide as to the nature of the affection when cholera is suspected. In my own experience I have found that this might be done with comparative certainty by inspection of the excrements. With fowls the excretions of the kidneys are joined in the cloaca with the undigested parts of the food, and both solid and liquid excrement are consequently voided together. They are not mixed to any great extent, however; the part excreted by the kidneys is easily distinguished, as during health it is of a pure white color, while the bowel discharges are of various hues. The kidney excretion will be hereafter referred to as the *urates*, and it is the only part which claims our attention.

After a fowl takes the contagion into its body the first and only reliable symptom is a coloration of the urates. At first these have only a faint yellow tint, which rapidly changes, however, into a deep yellow color; up to this time

the bird shows no other signs of the disease, its temperature is unchanged and its excrement of a normal consistency. In one or more days after this yellow color appears the urates are greatly increased in quantity and constitute the whole or a greater part of the discharges and an obstinate diarrhoea sets in; in a few cases the urates now become greenish, and exceptionally they are of a deep green color.

The only lesion seen in post-mortem examinations that is likely to attract the attention of non-professional observers is the enlarged liver, which is nearly constant—it may be of various shades of color. Besides this the presence of yellow urates in the cloaca and ureters is a valuable sign and is generally present.

2. Sick Birds Must be Destroyed.—The excrements of sick birds are the principal means of spreading the contagion, and the first step in stamping out the disease is, consequently, to destroy all which are voiding yellow urates. Care should be had to make the distinction between the urates and the bowel dejections, for the latter are frequently of a yellow color in health; but a little observation will preclude any mistake of this kind. The killing should not be by any method which allows the escape of blood, as this fluid is even more virulent than the excrement; wringing the neck is a quick and easy method of destroying the life. Once killed the bodies are to be taken beyond the limits of the poultry run and deeply buried.

If it is decided to keep the sick birds till they die or recover, they should be placed in an inclosure by themselves, as far as possible from the healthy ones, where they may be cared for without entering, so that there will be no danger of carrying particles of the excrement on the boots and spreading the infection.

3. Healthy Birds Must be Placed on Disinfected Grounds.—If a piece of land is at hand to which the sick birds have not had access and which is consequently free from the contagion, the healthy birds should be penned upon it; but if all of the land is infected, then a piece is to be selected and thoroughly disinfected with the solution mentioned further on in this paper. The fowls are to be restricted to this disinfected ground for several months, or even a year or more, if practicable. The drinking vessels and feeding troughs are to be new, or if used before they must be soaked for 12 hours with the same solution before being placed in the new inclosure.

4. Observations to be Continued to Note the First Re-appearance of the Disease.—Some of the fowls, though well at the time of removal to disinfected quarters, may be infected with the disease, and after the period of incubation, which varies from 3 to 20 days, will sicken. It is necessary, therefore, to make a careful inspection of the excrement each morning for at least three weeks after the separation of the sick fowls. If yellow urates are discovered, the birds must be watched until the sick one is detected. To facilitate the early discovery of such sick fowls and prevent infection of the healthy ones it is advisable, where practicable, to separate the birds into lots of two or three each at the start; and this separation may always be practiced as a last resort where the disease successfully defies our efforts for a considerable time; but where this is impossible a little patience will generally enable one to pick out the sick before any harm has resulted. As soon as the sick bird is removed the excrement must be scraped up and burned, and the run must be again sprinkled with the disinfectant; or, the well birds may be changed to fresh ground as before. This method of management is to be continued as long as new cases of the disease occur.

By a careful observance of these rules one can frequently check the disease with a loss of but one or two fowls out of a large flock.

5. Disinfection.—For this disease we have a very cheap and most effective disinfectant. It is a solution made by adding three pounds of sulphuric acid to 40 gallons of water (or $\frac{1}{4}$ lb. of acid to $3\frac{1}{2}$ gallons of water) and mixing evenly by agitation or stirring. This may be applied to small surfaces with a common watering pot, or to larger grounds with a barrel mounted on

wheels and arranged like a street sprinkler. In disinfecting poultry houses the manure must be first thoroughly scraped up and removed beyond the reach of the fowls; a slight sprinkling is not sufficient, but the floors, roosts and grounds must be thoroughly saturated with the solution, so that no particle of dust, however small, escapes being wet. It is impossible to thoroughly disinfect if the manure is not removed from the roosting places.

Sulphuric acid is very cheap, costing at retail not more than 25 cents a pound, and at wholesale but five or six cents; the barrel of disinfecting solution can, therefore, be made for less than a dollar and should be thoroughly applied. It must be remembered, too, that sulphuric acid is a dangerous drug to handle, as when undiluted it destroys clothing and cauterizes the flesh wherever it touches. The safest way is, therefore, to take a five-gallon keg nearly full of water to the druggist, and have him place the strong acid in this; the contents of the keg may then be safely transported and added to the barrel of water.

6. Fumigation.—In those cases where the disease has been raging for a considerable time the feathers become saturated with the contagion, and it is necessary, before placing the fowls on the disinfected run, to put them in a close building and thoroughly fumigate them with sulphur. For this purpose a pan of burning coals is taken and flowers of sulphur thrown upon them as long as the air can be breathed without danger of suffocation. When the disease is recognized at the outset this is not necessary.

The experiments on which the above regulations are founded will be detailed in future reports of the Agricultural Department; they are sufficiently numerous to be worthy of the fullest confidence.

The value of the method of preventive inoculation or vaccination discovered by Pasteur has not yet been decided, but in view of the comparative ease with which the affection may be controlled by the measures detailed above, we doubt if it can ever be advantageously adopted as a means of preventing this particular disease.

WOOL EXTRACTING.—For separating wool from cotton from mixed goods (wool extracting), M. Paul Poulin, of Paris, has patented the employment of the two following solutions in which the goods are immersed: First, chloride of calcium at 20° Be., 4 volumes; water, 3 volumes. The chloride of calcium at 20° Be. is itself prepared by dissolving in a mixture of 1 volume of muriatic acid at 22° Be., and 2 volumes of water, enough chalk to saturate it; or, second, solution of 1 lb. of salt and 1 lb. muriatic acid in $\frac{1}{2}$ gal. of water. The solution is kept boiling by means of steam for 30 or 40 minutes; then cooled and poured on the goods under pressure. The rags are washed and dried, the residue is pure wool.

STEWED LIVER.—Brown two pieces of bacon in a saucepan, add a finely cut onion, pepper, corns and mace; simmer for a quarter of an hour; add liver cut in slices, washed and dried; simmer again for 20 minutes or half an hour till done. Make bread dumplings with it. Take bread-crumbs, with a little flour mixed with an egg and a very little baking powder, first flavoring with nutmeg, a handful of finely chopped parsley, a little chopped lemon and some suet; amalgamate with water or milk as you like. Now brown the dumplings in butter or lard, and then just let them steam through for ten minutes with the gravy. When served, this makes an inexpensive tasty dish.

CABBAGE.—Chop fine one good-sized solid head. To four well-beaten eggs add four tablespoons sweet cream, one of celery seed, nearly one of salt and ground mustard, one-half teaspoonful black pepper, one-half cup good vinegar; put on the stove and stir till it just boils; if it cooks too long the egg will become lumpy; pour over the cabbage and mix thoroughly.

SILK CULTURE.

The last regular meeting of the California Silk Culture Association, at the Academy of Sciences, was one of special interest. Mrs. E. B. Barker presided. Mrs. Keeney, one of the vice-presidents, gave a full account of the progress of that industry. At the rooms of the society at San Rafael about 10,000 silkworms are doing finely, most of them being now in the second state. Many visitors have been in to see the new work, and all expressed themselves as delighted with the progress made, and the pleasure of the work, and give the association a hearty "God-speed." The wife of the Japanese Consul manifested a good deal of interest, and said that the worms were the largest for their age she had ever seen. The Japanese Consul has written to the proper Japanese authorities, advising them to have a good supply of eggs and cocoons for the American market next year, as he feels certain that silk culture will speedily rank among the most important of our industries. Those in charge of the rooms in San Rafael (corner of 5th and F Sts.) are pleased to see all visitors, and will gladly show them their work.

Mrs. A. P. Stanton gave an interesting account of her observations during her trip in and around San Jose. She found the interest in this industry very wide spread, and many experimenting with the worms. So far, all experiments have succeeded admirably. Instruction will be given at the Normal School, next season, on silk culture, and the faculty of the University of the Pacific are so interested in it that it is very probable a class will be opened there also.

Mrs. T. H. Hittell, the author of the "California Silk Grower's Instructor," was voted an expression of cordial thanks by the society for her earnest work. The Cor. Sec'y, Mrs. Hittell, reported many letters received from all parts of the State, showing the great interest felt. All desire information and the society are mailing the "Instructors" as rapidly as possible.

Miss Marwedel, the well-known kindergarten teacher, reported 2 oz. of eggs received and ready for distribution. She also had a long talk with a young inventor who had made an appliance by which his sister and others of the family had reeled silk in England, and he expressed a hope that he might be able to attach this reeling apparatus to a common sewing machine. How much such an invention would aid the silk grower.

Mr. Herman, an expert in silk manufacture, says that no climate is so suited to the silk industry as that of California. He has traveled widely in the silk-producing countries, so his ideas are doubly important. He takes a great interest in the society and is endeavoring to further the industry in San Jose. He knows from personal experience that the exporter of the real silk dress goods is unable to compete with the home market because of the protective tariff. The temperature of 74° F. is considered proper for the hatching of eggs.

The finances of the society are in a flourishing condition and constantly improving. There is no doubt but that this new industry will bring wealth to California. So let all patriotic Californians interest themselves in this work, and, by so doing, aid their Golden State.

A RACE AT NAIL FEEDING.—The *Wheeling News Letter* of April 3d says: The nail-cutting contest between the Belmont and Top mill factories came off last week and resulted in a victory for the latter. At the Top mill the total amount of nails cut was 7,061 kegs. The men worked 11 hours each day and 110 nail machines were employed, several of which, however, were idle at times during the week. The largest previous output of the factory in one week was 6,876 kegs, working on the 12-hour system. The following will show that the boys put in their time to advantage: Bernard Burt, on 30d., cut 265 kegs; James Kenney, 20d., 222 kegs; Thomas Tagg, 8d., 85 kegs; Robert Ditty, 12d., 125 kegs; Josep Siple, 10d., 113 kegs; Daniel

AMERICAN POMOLOGICAL SOCIETY.

The next session of the society will be held this fall, and we hope that our State will be represented in the persons as well as in the writings of our horticulturists. Now that our State is enjoying such advancement in horticulture it is especially fitting that some well-informed fruit growers should be at the meeting, as there will no doubt be not a little request for the leading points of Oregon experience. The notice of the meeting is given early, and as many will make money enough this season to treat themselves to an Eastern trip, we expect that there will be many Oregonians present.

We have received the following circular in reference to the meeting:

The Massachusetts Horticultural Society having invited the American Pomological Society to hold its next meeting in Boston, the undersigned give notice that the 18th session of this national association will be held in that city, commencing Wednesday, September 14th, 1881, at 10 o'clock A. M., and continuing for three days. This session will take place at the time of the annual exhibition of the Massachusetts Horticultural Society, which is expected to be of unusual excellence, and will give additional interest to the occasion. All horticultural, pomological, agricultural, and other kindred associations in the United States and British Provinces, are invited to send delegations as large as they may deem expedient; and all persons interested in the cultivation of fruits are invited to be present and take seats in the convention. It is earnestly hoped that there will be a full attendance of delegates from all quarters of our country, thereby stimulating more extensive cultivation by the concentrated information and experience of cultivators, and aiding the Society in perfecting its catalogue of fruits. This session will be held at the home of its President, where, after an interval of years, occasioned by ill health and a serious accident, he hopes to have the pleasure of meeting, not only his old friends, but others from the various sections of our country, and again to unite heart and hand with friends for the promotion of the objects of the society.

When we consider the importance of fruit culture in North America, its progress during the last 30 years under the beneficent action of this society, its moral, social and sanitary influence, and the increasing demand for its products both in this country and Europe, rendering it a source of national wealth, we feel justified in urging the attendance of all who are interested in the welfare of our country, and the development of its wonderful resources, in this branch of industry.

Members, delegates and societies are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the society and the science of American Pomology. The sense of the last meeting of the society was that the exhibition of large collections of fruit is not desirable, but that the show of its fruits should be confined mainly to new or rare varieties or remarkable specimens, or such as being peculiar to any locality, or for any other reason, possess special interest. Intending contributors—whether as States, societies or individuals—will oblige by giving notice as far as possible, and at an early date, what quantity they propose to exhibit. Three specimens of a variety will be sufficient, except in fruits of special interest. Each contributor is requested to prepare a complete list of his fruits, that a report of all the varieties entered may be submitted to the meeting as early as practicable. A limited number of Wilder medals will be awarded to objects of special merit.

Packages of fruits, with the names of the contributors, may be addressed as follows: "American Pomological Society, Boston, care of Massachusetts Horticultural Society." Freight and express charges should be prepaid.

All persons desirous of becoming members can remit the fee to E. W. Buswell, Treasurer, Boston, Mass. Life membership, \$20; Biennial, \$4. Life members will be supplied with back numbers of the Proceedings of the Society as far as possible.

MARSHALL P. WILDER, Pres., Boston, Mass.
ROBERT MANNING, Sec'y., Salem, Mass.

A CURIOUS musical instrument called a color organ has been invented. When the various notes are sounded by touching the keys, different combinations of colors are reflected upon a ground glass plate, and these change and blend in a charming manner as a quick air is played. Thus two senses are gratified at once, and the beholder feels more than he understands the harmony between melody and color.

THE LARGEST PYRAMID.—We believe it is not generally known that the largest known pyramid rests on American soil. The Pyramid of Pueblo, in Mexico, is larger than the great Pyramid of Cheops, in Egypt. The latter covers only fourteen acres, while the Mexican one covers forty-four acres of ground, and was originally 600 feet high. It is made of sun-dried brick, and is supposed to have been built 7,000 years ago.

SALTING MEAT.—Salted meat is far less nourishing than fresh, and far less wholesome. We will endeavor to explain why. The preservation of meat by means of salt has been practiced from time immemorial, and is one of the simplest methods for this purpose. It depends for its efficiency upon the dessication or drying of the tissues, as the salt used for this purpose enters slowly into solution, deriving the moisture it requires for this purpose from the fluids of the flesh. Hence it is that when dry salt is strewed upon fresh lean meat, it gradually disappears in the form of a liquid brine. As the flesh loses its natural juice, the fibers contract and the meat lessens in bulk. The action of the salt, if a large quantity is applied, penetrates deeply, and as much as one-third of the natural juice of the meat is often forced out of it. The preservation of meat by means of salt, therefore, may be explained to depend upon the separation of water, upon the exclusion of air, and upon the saturation with salt of the juices remaining in the meat. But meat, though preserved in this manner against putrefaction, suffers a notable loss of its normal nutritive properties, inasmuch as the brine which gradually forms about it, contains probably one-third or one-half of the nutritive substances (albumen, kreatin, phosphoric acid, potash, etc.) of the flesh, which are extracted along with the juices. These are the very substances which are more completely extracted by digestion with water, as in making beef tea or broth; and in proportion as these constituents are extracted, they diminish the nutritive properties of the meat. The change in the constitution of the meat by salting has been shown by Leibig to be greater than that produced by cooking, and the loss of nutritive value considerably greater; for in cooking, the nutritive albumen, etc., is simply coagulated in the fibers and retained, while in salting, the extracted substances enter the brine and are lost. Not only does salting greatly diminish the nutritive value of meat, but those who are compelled to subsist upon it almost exclusively for any length of time, are generally afflicted with scurvy, a fact which proves its unwholesomeness, and which doubtless stands in close relation with the loss of the nutritive elements, as vegetable substances which are capable of supplying what the meat has lost, are found to be the best preventative of, and the best remedy against, the disease.—*Manufacturer and Builder.*

SPENCE'S METAL.—This metal compound, having a variety of advantages in non-liability to oxidation, cheapness, etc., is of especial utility to builders, and is described in the *Building and Engineering Times*: It will very probably ere long entirely supersede lead for packing and cementing purposes. This metal fuses at a very low temperature, and can be melted in an iron pot or kettle over an ordinary fire in a few minutes. It is advisable that such a pot or kettle should be a closed one, as the metal, being a compound of sulphur, is liable to catch fire if due precautions are not taken. When heated to the proper temperature of first fluidity, the metal may be poured with ease, and used for the cementing hermetically of pipe joints, the setting of iron railings into stone, and for similar purposes. A great advantage this metal has is that it expands at the moment of solidification, and thus entirely and hermetically fills any recess into which it may be poured. This property of high expansibility at the moment of solidification renders it of great value for obtaining sharp impressions from intricate molds, and the most perfect casts of busts, statues, medals, bas reliefs, etc., are thereby obtained in it. It may be colored to resemble bronze, and consequently produces a most artistic effect. It is recommended also for repairing and even covering roofs instead of asphalt or lead flashing, as it is perfectly waterproof and water-tight and very light. It is not liable to oxidation or corrosion in the least degree, and may therefore be extensively adapted to the lining of tanks and the making of acid bottles, etc.

USEFUL INFORMATION.

NEW CONCLUSIONS—THE PHOTOPHONE.—The opinion is gaining ground, especially among French savants, that the musical sounds produced by Prof. Bell in disks of various substances, such as mica, India rubber, metal and wood, by holding them in the path of a rapidly interrupted beam of light, are really due to heat and not to light. Radiophonic notes, such is the new term, have been obtained by M. Mercadier from ordinary gas lamps without employing lenses to concentrate the interrupted beam, by simply bringing the receiving disk near the source. Even a plate of copper heated to a bright red heat produced very distinct musical tones, which gradually died away as the plate cooled to a dull red followed by obscurity. The fact that when the receiving disks were coated with silver on the side next the light the effects were feeble, and that when coated with absorbent lampblack they were strong, would seem to tell against Prof. Bell's conclusion that the sounds were due to light. It is a curious fact that when the radiometer was first brought out by Dr. Crookes he intimated his belief that its rotation was due to the impact of light waves; but heat is now known to be the cause of the motion.

SMALL PULLEYS AND SHORT BELTS.—Pulleys that are too small form a serious defect often found in our manufactories, and these are especially detrimental where double belts are used, because the double belt will not lead to so small a curve as a single belt will, hence there is less contact with the double. Small friction wheels, or belt-tightening wheels, again waste the power, running too fast, and therefore involving extra wear and friction. Short belts, especially vertical ones, are very wasteful in the transmission of power, and if the line shafting is at right angles, no possible arrangement of either bevel gearing or flat belts will give such satisfactory results as V belts, provided that the sizes of the pulleys are properly proportioned; that the thickness of the belt is suitable; and the angle of the V is also properly proportioned to the requirements.

ASHES AS EMERY.—A manufacturer whose business requires the use of large amounts of emery, has been trying an experiment with the ashes of anthracite coal, and he affirms that he has obtained good results from the use of ashes as a substitute for the finer grade of emery. He takes ashes and saturates them with water, the liquid being poured off after standing an hour or two, then being poured off again, and so until he obtains several grades, down to a substitute for emery flour. When dried, the deposit cuts readily and leaves a satisfactory surface.

ORGAN pipes made from paper have been patented by Giles Beach, of Gloverville, N. Y., and are now in satisfactory use. These pipes possess important advantages, being lighter, impervious to moisture, unaltered by variations of temperature, more easily transported and with greater safety. The tones produced are not inferior to those of metal pipes.

TO PREVENT CORROSION IN STEEL PENS.—According to the *Moniteur des Produits Chimiques*, this can be done by placing them for half an hour in a solution of sulphate of copper, and then letting them dry slowly. Of course the process simply gives the steel a thin coating of copper, which is not likely to be affected by any of the inks in ordinary use.

HARDENING PAPER.—Paper can be hardened without destroying its pliability by the following process: Pass the paper quickly through strong oil of vitriol and wash thoroughly in running water; or use hot syrupy solution (aqueous) of zinc chloride, and rinse quickly and thoroughly in water containing a trace of soda.

SCIENTIFIC AND MECHANICAL.

ROAD MATERIALS.—"Whinstone is the most durable of all materials, and wherever it is well and judiciously applied the roads are comparatively good and cheap. A road made of small broken stone to the depth of 10 inches will be smooth and durable. Ordinary-sized wheels touch the road for about an inch of their circumference, and every piece of stone put into the road which exceeds an inch in any of its dimensions is mischievous. The stones should be broken so that none shall exceed six ounces in weight. Every road is to be made of broken stone, without mixture of earth, clay, chalk, or any other material that will imbibe water and be affected with frost. Nothing is to be laid on the clean stone on pretence of binding; broken stone will combine, by its own angles, into a smooth, solid surface that cannot be affected by vicissitudes of weather, or displaced by the action of wheels, which will pass over it without a jolt, and consequently without injury."—J. L. M'Adam, on Roads.

SECURING GLASS IN SKYLIGHTS ROOFS AND .—A recent English patent shows what seems to us a very convenient and reliable way of fastening sheets of glass in skylight frames of either wood or iron. In the case of a wooden rafter a piece of sheet lead is cut three and one-half times the width of the rafter, laid across the rafter, projecting equally on either side, and nailed at intervals. The lead is then doubled back over the heads of the nails to the center of the rafter on either side and turned up at a right angle. The glass is then laid and the lead turned down over the face of the glass so that when finished the lead covers the glass the same width of the rafter. If T iron is used for a rafter the lead is doubled under the edge of the T instead of nailed, as in the case of wood, and in all other respects handled just the same as with wood.

A NEW WHITE LEAD PROCESS.—The production of white lead has given rise to various processes and improvements, one of the most recent of the alleged improvements in this line being as follows: Very fine ground litharge is subjected, in a mixing vessel, to a salt brine, by the action of which chloride of lead and caustic soda are produced. This mass is then run into an iron vessel, into which carbonic acid is pumped, causing a further chemical change in the production of carbonate of lead and common salt once more, and the latter, being washed out from the white lead, may be used over again as in the first operation. It is stated, however, that though the article produced in this way is very white and chemically pure, it is somewhat less heavy than that made by the old process.

TO DISTINGUISH AMBER.—Some of the ways of distinguishing amber from copal are thus given in *La Nature*: "Copal is yellow, of a more or less deep tint, but uniform throughout, and has yellow points like sulphur on its surface. Amber in a fragment of 12 centimeters in length will show a variation in shade. Amber when rubbed will yield a strong aromatic odor; its imitations will not. Amber may be bent after being smeared with tallow and heated; the imitations will not bend. Amber may be cut, sawed, rasped or polished, but cannot be cemented or soldered like copal. The density of amber is 1.09 to 1.11; that of copal is 1.04."

THE BLUE OF THE SKY.—M. Chappuis thinks that the blue of the sky may be due to ozone present in the upper regions of the air. He argues that the electrical discharges constantly taking place will produce ozone; and the recent researches of himself and M. Hautefeuille have shown that ozone, at any rate when near its condensation point, is of a blue tint. He has examined the absorption-spectrum of ozone and finds nine dark bands in it, three at least of which correspond with known bands in the telluric spectrum.

DOMESTIC RECIPES.

JULIET CORSON'S WAY WITH POTATOES.—Lives there a cook with a soul so dead as not to be willing to expend all the powers of fire, water and salt to produce mealy potatoes? If so, the writing of her epitaph would be a cheerful task. And if cold ones are left they can rehabilitate themselves in favor by appearing chopped, moistened with white sauce or cream, and either fried in butter or baked quickly, with a covering of bread crumbs. Steam fried, that is sliced raw, put into a covered pan over the fire, with butter and seasoning, and kept covered until tender, with only enough stirring to prevent burning, they are capital. To fry them Lyonnaise style they are cooked in their jackets to keep them whole, sliced about a quarter of an inch thick, browned in butter, with a little sliced onion, sprinkled with chopped parsley, pepper and salt, and served hot. Larded, they have bits of fat ham, or bacon inserted in them, and are baked tender. Note well that the more expeditiously a baked potato is cooked and eaten the better it will be.

FLOATING ISLAND.—Make a boiled custard of the yolks of six eggs, a large quart of milk, sugar to sweeten and a pinch of salt. The yolks must be well beaten and strained before adding to the milk. Flavor the custard and while boiling hot pour into a dish and spread the whipped whites smoothly over the top. Cover tightly to cook the whites. When cold, sift powdered sugar over the top, and you may, if you wish, strew over grated cocoa-nut, or bits of jelly or jam.

PLUM PUDDING.—One pound of suet, chopped fine; one lb. of English currants; one lb. of raisins; one and a half lbs. of flour; cloves, cinnamon and nutmeg, one-half teaspoonful each. One large tablespoonful salt. Mix all well together, then add two cups sugar, one cup molasses, seven eggs and a half pint sweet milk. To be made over night, then put in a cloth and boil four hours. To be eaten with sweet sauce.

TO REMOVE TAR.—A correspondent writes that "tar is instantaneously removed from hand and fingers by rubbing with the outside of fresh orange or lemon peel, and wiping dry immediately after. It is astonishing what a small piece will clean. The volatile oils in the skins dissolve the tar, and so it can be wiped off."

TO DISSOLVE SILVER FROM PLATED GOODS.—Mix one ounce of finely powdered saltpeter with ten ounces sulphuric acid, and steep the goods in this mixture. If diluted with water, it acts on copper and other metals, but is very strong, it dissolves the silver only, and may be used to dissolve off plated goods without affecting the other metals.

PYRAMIDAL SECRETS.—A Cairo (Egypt) despatch of May 3d says: "Maspero has just opened some more pyramids of the Sakkaro, enclosing the tombs of the kings of the fifth dynasty. The mortuary chapels of each contain about 60 square meters of the smallest and most closely written texts, giving precise details of the religious belief of that age. It is a complete *coup de grace* to the Ostris Masmic theory, and all previous conceptions are entirely upset. Except the finding of the Rosetta stone in 1799, no discovery in Egypt equals this in scientific value. The entrance passage is difficult and dangerous on account of the loose blocks that encumber it. An American Egyptologist and a correspondent are the only persons allowed to visit the interior with Maspero. The latter explorer returns to Paris next month, and will publish the discovered texts. All the Sakkaro pyramids, about 60 in number, will be opened as soon as possible.

THE BEHRING'S STRAITS CURRENTS.

It will be remembered that a short time since, we mentioned the fact that W. H. Dall, of the U. S. Coast Survey, who has passed a number of years in Alaskan waters, on Coast Survey duty, denied the existence of any branch of the Kuro-Shiwo, or Japanese warm stream, in Behring's straits. That is, he failed to find evidence of the existence of any such current, although he had made careful observations. At the islands in Behring's straits, his vessel had tailed in opposite directions with ebb and flood tide, and he thought the only currents there were tidal in their nature. The existence or non-existence of this current is an important point in Arctic research on this side of the continent.

At the last meeting of the Academy of Sciences, Prof. Davidson, of the U. S. Coast Survey, author of the "Alaska Coast Pilot," refuted Dr. Dall's opinion of the non-existence of a branch of the Kuro-Shiwo, or Japanese warm stream, from the north Pacific into the Arctic ocean, through Behring's strait. He said that in 1857 he gave to the Academy his own observations, and recently he had conferred with Capt. C. L. Hooper, who commanded the U. S. steamer, *Thomas Corwin*, employed as a revenue steam-cruiser in the Arctic and around the coast of Alaska. Capt. Hooper confirms the opinions of all previous navigators, every one of which, except Dr. Dall, say that a branch of this warm stream passed northward into the Arctic through Behring's strait. It is partly deflected by St. Lawrence island, and closely follows the coast on the Alaskan side, while a cold current comes out south, past East cape in Siberia, skirting the Asiatic shore past Kamschatka, and thence continues down the coast of China. He said ice often extended several miles seaward, from East cape on the Asiatic side of Behring strait, making what seamen call a false cape, and indicating cold water, while no such formation makes off on the American side, where the water is 12 degrees warmer than on the Asiatic shore off the Diomed islands, situated in the middle of Behring's strait, the current varies in intensity according to the wind.

Frequently it is almost nothing for several days, when after a series of southerly winds the shallow Arctic basin has been filled, under a heavy pressure, with an unusual volume of water, and a sudden change to northerly winds, makes even a small current setting southward for a few days, just as at times the surface currents set out our Golden Gate continuously for 24 and 48 hours, as shown by the United States coast survey tide gauges. Whalers report that the incoming water then flows in, under the temporary out-flowing stream.

Old trees, of a variety known to grow in tropical Japan, are floated into the Arctic basin as far as past Point Barrow, on the American side, but none are found on the Asiatic side, or near Wrangel Land, where a cold stream exists, and ice remains late in the season. On the northern side of the Aleutian islands are found cocoanut husks and other tropical productions stranded along the beaches. The American coast of Alaska has a much warmer climate than the Asiatic coast of Siberia, and the American timber-line extends very far north. The ice opens early in the season on the American side, and invariably late on the Asiatic.

Capt. C. L. Hooper says that when just north of Behring Strait, off the American coast, in the Arctic basin, the U. S. steamer *Thomas Corwin*, when becalmed for 24 hours, drifted 40 miles to the northward. From all these, and other facts, and the unanimous testimony of American whalers, who have for years spent many months annually in the Arctic, and from his own observations, he argued that a branch of the Kuro-Shiwo, or Japanese warm stream, unquestionably runs northward through Behring's

strait into the Arctic basin along the northwestern coast of Alaska.

Prof. Davidson then called to mind the testimony in regard to the existence of Plover island, between Herald island and Wrangel land, which he said was first made public through this academy. The evidence of Capt. Williams, Thomas and Long, were recited and highly praised. One of the officers of Admiral Rodgers' expedition climbed to near the top of Herald island, at a time of great refraction, when probably a false horizon existed, and hence did not see Plover island, although Wrangel land was in sight.

Prof. Davidson thinks all the authorities are against Dr. Dall, who attributes the warm current he observed on the American coast, to water from the Yukon river, and to the large expanse of shallow water exposed to the sun's rays. As Dall's observations only covered a few days of possibly exceptional weather, and the whalers, and Captain Hooper's cover vastly longer periods, and whalers all say it is a pretty hard thing to beat southward through Behring's strait, owing to the northerly current setting into the Arctic, we are forced to the conclusion that Dr. Dall has mistaken the exception for the rule, and his conclusions are therefore erroneous. When, in 1824, Wrangel went north, he, like others, always found broken ice and considerable open water. In 1867, when Capt. Thomas Long made his memorable survey of the coast of Wrangel land, the season was an exceptionally open one, and in California we had heavy rains, extending into July.—*Scientific Press*.

MINERALS OF THE PACIFIC COAST.—Many persons have the impression that gold, silver, copper and quicksilver make up the sum of the mineral products of California. This is a mistake. Many other valuable minerals are abundant. Without regard to scientific classification, the following economic minerals may be mentioned, the localities of which are well known to mineralogists: Platinum, iridium, ores of lead, cobalt, tin, tellurium, molybdenum, chromium, antimony, bismuth, nickel, zinc, arsenic and iron; oxide, silicate and carbonate of manganese; red and yellow ochre, amber, carbonate and sulphate of baryta, limestones, marbles in many beautiful varieties, dolomite, hydraulic cement, gypsum, granite, syenite, porphyries, freestone, quartz sand, asbestos, mica, pegmatite, corundum, burh-stone, tripoli, diatomaceous earth, pumice stone, asphaltum, mineral oils, fluor spar, strontianite, carbonate of magnesia, carbonate of soda, salt, sulphur, tungstate of iron and of manganese, lignite, graphite, fire-clay, borax, boric acid, besides gems and minerals valuable only for ornamental purposes, and perhaps others; and there are no doubt unknown mineral resources in the State that may develop into sources of wealth. It should be the policy of the State Mining Bureau to discover, investigate and bring them into notice.

ATOMIC WEIGHT is the weight of the atom of an element as compounded with that of the atom of another element, ascertained from the proportions by weight in which they combine; or, leaving out of view the hypothetical idea of an atom, it is the number expressing the proportions by weight in which the elements combine—one of the elements, either hydrogen or oxygen, being assumed as the unit for comparison with the others. Oxygen and hydrogen combine to form water in the ratio of 1 hydrogen to 8 of oxygen; and 1 and 8 are therefore the combining proportions of hydrogen and oxygen—also called, to avoid hypothesis, their combining equivalents.

THE days are already passed for prospecting in the Wood River country—on horseback. Those who go to find mines must go prepared to dig under grass roots or sink on iron croppings for the rich deposits of galena which yield a return for all labor thus far rendered.

TOBACCO SMOKE.

In further research on this subject Dr. Le Bon finds that collidine, the new alkaloid existing in tobacco smoke, with other aromatic principles, and prussic acid, as well as nicotine, is a liquid of agreeable and very penetrating odor, and as poisonous as nicotine, the twentieth part of one drop sufficient to paralyze and kill a frog. It is the prussic acid and various aromatic principles that cause headache, giddiness and nausea in smoking certain tobaccos that contain little nicotine. Other tobaccos, rich in nicotine, have no such effects. The tobaccos containing most prussic acid and collidine are those of Havana and the Levant. The dark semi-liquid matter which condenses in pipes and cigar-holders contains all the substances just named, as well as carbonate of ammonia, tarry and coloring matter, etc. It is very poisonous. Two or three drops of it will kill a small animal. The combustion of tobacco destroys but a small part of the nicotine, and most of this appears in the smoke. The proportion absorbed by smokers varies according to circumstances, but hardly ever falls below 50 centigrammes per 100 grammes of tobacco burnt. About the same quantity of ammonia is absorbed at the same time. Naturally, more of the poisonous principles are absorbed where the smoke is breathed (as in a room); less in the open air. A frog placed in a receiver containing a solution of nicotine, with about one drop of that substance to a little of water, succumbs in a few hours. Tobacco smoke contains about eight milliliters of carbonic oxide per 100 grammes of tobacco burnt. The poisonous properties of tobacco smoke are not due to this gas, as has been maintained in Germany.

KEROSENE AND SALT FOR DIPHTHERIA.—A correspondent of the New York *Sun* says: In 1862, on a plantation in South Alabama, where there was great difficulty in securing good medical advice, I saw a whole plantation of blacks, as well as the white members of a large family, successfully treated for diphtheria with kerosene and salt, used thus: Every patient was given a lump of rock salt about the size of a boy's marble, and instructed to keep it in his or her mouth, swallowing the salty saliva. At the same time the throat was rubbed with kerosene oil, and a flannel saturated with kerosene kept around the neck until the symptoms were abated or entirely gone. If necessary, mild cathartics were given. Not a case was lost, and there were fully 150 in all on the plantation."

TREATMENT OF FETID PERSPIRATION OF THE FEET.—A correspondent of the New York *Medical Record* writes: "As a recipe for fetid perspiration of the feet seems to be in order, and as I do not remember seeing mentioned one that never failed in my hands, I herewith send it: A 1% watery solution of permanganate of potassa. Bathe the feet in it night and morning, oftener if necessary, even to every hour, letting the feet dry after each bath without wiping. A stronger solution may at times be necessary; generally a weaker one will answer. The stronger the solution the greater the discoloration of the feet, but, as it is temporary, patients prefer it to the fetid moisture."

DYEING BLACK.—Four ounces copperas and one ounce logwood extract to each pound of goods; dissolve the copperas in water sufficient to cover the goods; wet them in clean water before putting them in copperas water, to prevent spotting; boil them in the copperas water about 20 minutes; take them out, rinse in clear water first, then wash in soap-suds till it seems soft; before it was put in the copperas water; then put into the logwood dye and let it boil about 20 minutes; take out and let it dry; wash before it dries, or after, as is most convenient; it will neither crock, fade, nor grow rusty.

THERE is great want and misery in the State of Bolivia in consequence of the ravages of locusts on the cereals—especially rice and Indian corn.

HONRED TOADS.

We give on this page an engraving of a native Californian, who can be met with in the middle and southern part of the State. We have at our office several living specimens, which appear to be thriving well.

In the volume on zoology in Lieut. Wheeler's "Surveys West of the 100th Meridian," it is stated that they found the *Phrynosoma*, or "horned toad," very numerous. There are 11 distinct species of this interesting little reptile, according to Prof. Cope. The one shown in the engraving is the form found in California and Arizona—*Phrynosoma cornuta*.

In its general aspect it somewhat resembles a frog, and is called a horned toad, though really a nearer kindred to the lizard tribe. In fact, it is a true lizard, and is in no respect a batrachian. The genus, which is North American, is characterized by a more or less oval body, flattened and covered with tuberculated scales, the head having sharp spines or knobs.

In confinement the reptile is sluggish, but it is said to be active in pursuit of insect prey in a wild state. It passes the winter in a state of lethargy in holes dug by gophers and other rodents, coming out in April generally. Those specimens which we have burrow under the soft earth in their box, covering themselves entirely up. They are very abundant on the Fresno plains. Those interested in the natural history of the reptile can find detailed descriptions in Stanbury's "Expedition to Great Salt Lake," and Vol. II. of the "Mexican Boundary Survey."—*Scientific Press*.

OMLETTE SOUFFLE.

1. From five eggs reserve the whites of three. Beat the remaining whites and yolks together, and mix with them a gill of cream. Into a frying pan put a piece of butter the size of a walnut. When it is brown pour in the beaten eggs and let them cook as fast as they can without burning. When nearly done spread the reserved whites beaten to a stiff froth over, and put the frying pan into a hot oven for a moment until the whites are just stiffened. Pour upon a platter and serve.

2. Beat the yolks of three eggs with three tablespoonfuls of pulverized sugar; add a little lemon or vanilla; then beat the whites of six eggs to a stiff froth. Put the yolks in a deep bowl, turn the whites on them, and with a spoon, giving it a rotary motion, cut the two, mixing them carefully together. Turn this on a tin or earthen baking dish with sides two or three inches high and slightly buttered. Smooth over the top, sprinkle over sugar, and put into a moderate oven. If it must be turned or moved in the oven, do it as gently as possible. When risen well and of a fine yellow color it is done. Serve immediately or it will fall.

3. Beat the whites of three eggs, add a tablespoonful of marmalade cut fine, or little pieces of fresh peaches; mix with powdered sugar. Bake on a buttered dish in a quick oven.

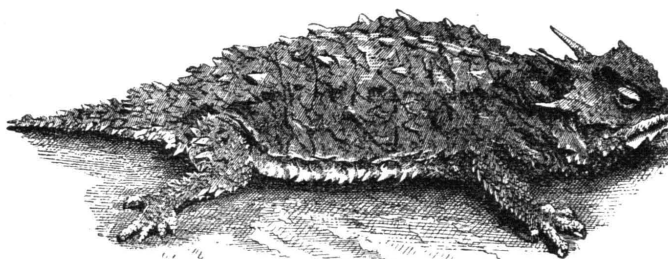
TO RESTORE BLACK MERINO.—Soak the goods in strong soft-soap suds two hours, then, having dissolved one ounce of extract logwood (which is the amount required for one dress) in a bowl of warm water, add sufficient warm—not hot—water to cover the goods, which are to be taken from the suds without wringing. Allow the goods to stand in the logwood water over night; in the morning rinse in several waters without wringing; in the last water add one pint of sweet milk, which stiffens the goods a little; iron while quite damp. It will not crock, and looks like new.

TOMATO SOUP.—Put two-thirds of a two-pound can of tomatoes on the stove and let it boil. Put one tea-spoonful soda into the tomatoes; after it is done foaming put the tomatoes into two quarts of boiling milk, season with salt, pepper and a liberal lump of good butter.

THE ORGAN OF VOICE.

The larynx is the organ of voice, and is placed at the upper part of the air passage. It is situated between the trachea below and the base of the tongue above, and forms that visible projection in the middle part of the neck known as *Adam's apple*. Its form is that of a triangular box—narrow below and broad above. It is composed of nine different cartilages, bound together by ligaments and moved by numerous muscles. Below the larynx stretches the wind-pipe, passing down into the lungs and subdividing like the branches of a tree into the right and left bronchi.

The laryngoscope enables us to look down into the larynx and watch its many movements. The image we see in the mirror differs materially from anything else we meet with in our anatomical studies. The epiglottis occupies the highest part of the laryngeal image. Its free border may be watched, alternately rising and falling during the examination. It presents a scroll-like form, and in the middle we see the under surface turned up like a lip. The vocal cords are the next most prominent objects in the image. They stretch from the front to the back of the larynx and are to be seen as two smooth, white bands, standing out in remarkable contrast to the surrounding red structures, alternately approaching and receding from each other as the patient breathes. These two moving bands once seen will never be forgotten.



THE CALIFORNIA HORNED TOAD.

Right here permit the remark that Laryngology has done many wonderful things in detecting and remedying the defects and diseases of the human voice. Light has been thrown into dark places; slight changes have been readily diagnosed; tumors, ulcerations and abrasions are seen at a glance, and thus every appliance of science is brought to the aid of the most beautiful and fascinating specialty in the whole domain of medicine and surgery. As the statue of Memnon is said to have grown vocal when touched by the first beams of the morning sun, even so has the voice of the dumb broken forth into songs of thanksgiving when set free by the skillful hand of our God-given art!

As the skin covers the body on the outside, so the mucous membrane lines it in the inside, and under certain circumstances they become readily transformed into each other. "This is only a single instance of the marvelous handiwork of Nature, and one may well stand in awe and in wonder when he contemplates the Divine wisdom which has fashioned such an exquisitely fitting garment, woven without seam, adapted by a hundred variations to every office it has to fulfill, covering the body outside and lining it inside, winding at every turn through the intricate labyrinth and inclosing within its folds the strange machinery of life." We not only trace the finger of God upon the stone tablets of the earth, the letters and the law of its everlasting form, but we see it in every line and movement of this wonderful human frame of ours!—*Sanitary News*.

It is funny, but a soft-palmed woman can pass a hot plate to her neighbor at the table with a smile as sweet as distilled honey, while a man, with a hand as horny as a crocodile's back, will drop it to the floor and howl around like a Sioux Indian at a scalp dance.

EUCALYPTUS AND THE ATMOSPHERE.

H. N. Draper writes for *Chambers' Journal* an article concerning the eucalyptus in the Roman Campagna. We take therefrom two paragraphs which will interest growers of the tree everywhere, both in showing how rapidly the trees exhaust moisture from the soil, and the influence of the leaf-exhalations upon the atmosphere:

The question of how and why the eucalyptus exercise sanitary changes so important as those which have been effected at this little oasis in the Campagna, may be best answered when two remarkable properties which characterize many of the species have been shortly considered. The first of these is the enormous quantity of water which the plant can absorb from the soil. It has been demonstrated that a square meter—which may roughly be taken as equal to a square yard—of the *Eucalyptus globulus* will exhale into the atmosphere, during 12 hours, four pints of water. Now as this square meter of leaves—of course the calculation includes both surfaces—weighs two and three-quarter pounds, it will be easily seen that any given weight of eucalyptus leaves can transfer from the soil to the atmosphere nearly twice that weight of water. M. Vallee does not hesitate to say that under the full breeze and sunshine—which could necessarily form no factor in such accurate experiments as those conducted by him—the evap-

times the weight of the leaves. One ceases to wonder at these figures, on learning that it has been found possible to count, on a square millimeter of the under surface of a single leaf of *Eucalyptus globulus*, no less than 350 stomata, or breathing-pores. And it now begins to be intelligible that, if such an enormous quantity of water can be transferred from earth to air, it may be possible that an atmosphere, which without such aid would be laden with malarious exhalations, may be rendered pure by this process of leaf distillation; the putrescible constituents of the stagnant water are absorbed by the roots, and become part of the vegetable tissue of the tree.

But this is not all. Like those of pine, the leaves of all species of eucalyptus secrete large quantities of an aromatic essential oil. It has recently been shown—and the statement has been impressively put by Mr. Kingzett—that under the combined action of air and moisture, oils of the turpentine class are rapidly oxidized, and that, as a result of this oxidation, large quantities of preoxide of hydrogen are produced. Now, preoxide of hydrogen is—being itself one of the most potent oxidizers known—a very active disinfectant; and as the leaves of some species of eucalyptus contain in each 100 lbs. from three to six lbs. of essential oil, we can hardly avoid the conclusion that the oxygen-carrying property of the oil is an important element in malaria-destroying power of the genus. Moreover, the oxidation of the oil is attended by the formation of large quantities of substances analogous in their properties to camphor, and the reputation of camphor as an hygienic agent seems sufficiently well founded to allow us to admit at least the possibility of these bodies playing some part in so beneficent a scheme.

oration of water would be equal to four or five

SINALOA AND DURANGO.

Under the auspices of some of Boston's prominent bankers and business men, for the purpose of development of Mexico and securing the profitable advantages offered by the Mexican government in her concessions for the securing of the construction of lines of railway and telegraph, the Sinaloa and Durango Railroad Company, (Limited), has been organized under the general railroad act of Massachusetts, of which Mr. Thomas N. Hart is president, and Mr. S. W. Richardson, of the banking firm of Richardson, Hill & Company, is treasurer. The company, having secured one of the most valuable concessions made by the Mexican government, are now receiving subscriptions; and in the proposal an opportunity for investment is given which is not often offered upon such advantageous terms. For \$2,700 cash, payable as the same may be assessed by the board of directors, but not more than 20% in any one month, the company will deliver to the subscribers twenty shares of the capital stock at par, \$1,000 in income bonds and \$3,000 in first mortgage bonds. Subscriptions may be made in sums of \$2,700 or in multiples thereof. This company has secured the concession from the Federal government of the republic of Mexico, celebrated August 16, 1880, between Manuel Fernandez, Chief Clerk of the Department of Public Works, representing the Executive of the Union, and Senator Mariano Martinez de Castro, representing the government of the State of Sinaloa, authorizing the construction of a railroad and telegraph line in that State, between the Pacific seaport of Altata and the city of Culican, with the privilege of extension into the State of Durango, to reach the city of the same name, or to any other point in the State where it can connect with the line of inter-oceanic or national railway which is to pass through that place. Under the grant and among the concessions to the company are exemption from all taxes and imposts, for a period of twenty years, on its property, including the capital employed in the construction of the road; exemption from all duties on all materials necessary for the construction and operation of the railroad, including locomotives and rolling stock, and for the necessary repairs of the same, for a period of twenty years; the right of way, seventy meters—278 ft.—in width, the entire length of the railway; the public domain, which the line may occupy in the extension fixed, and the lands necessary for stations, warehouses and other buildings, as well as for the water stations and other indispensable accessories of the road and its appurtenances, if the property of the nation, shall be given without compensation; the ore beds, also those of coal and salt. The marble and other mineral deposits encountered in the works and excavations made upon the line of the road and its branches, shall be the property of the company, without prejudice to the rights of others, provided it claims and works them subject in all respects to the mining laws; and also a subsidy of \$9,000 per kilometer, or at the rate of \$14,484 per mile, to be paid to the company by the general federal treasury. The estimated cost of constructing this railroad and telegraph line from Altata to Culican, a distance of forty miles, is \$500,000, and to either Corsala or Tamozula, as the surveys may determine, forty miles further, \$500,000 more. The area of the State of Sinaloa is 185,200 square leagues, and its population 162,587, equal to thirty-one inhabitants to each square league. This State, according to existing political division, contains the capital, Culican, which is the seat of the legislature, the Supreme Court, the governor and the federal authorities. It has nine districts, in the principal towns of which there are political prefects, 31 municipalities, 91 villages, 515 hamlets, four cities and nine towns. There are 114 mining districts, with 400 opened mines of silver, gold, copper and lead; fifty reduction works and nine deposits of salt; 1,229 haciendas, cattle ranches and cultivated farms. The States of Sinaloa and Durango are now producing between four and five millions of dollars of gold and silver per annum, and the

production is now on the increase. The American processes of reduction are almost exclusively in use, the mills being built in San Francisco. As a considerable part of the ore mined is rich, large quantities are carried on mule back to the coast and shipped to European ports in a raw state and also as concentrations.—*Economist*.

COPPER IN ARIZONA.

A correspondent of the *Bulletin*, writing recently from Tucson, has the following: The copper interests of the Territory are attracting great attention at present, and good copper mines and prospects are eagerly sought after by our resident capitalists as well as by strangers in our gates. The famous Copper Queen mine of Bisbee, the representative copper mine of the Territory, which bears the same relation to copper mines that the Contentment mine of Tombstone bears to the silver mines, has paid its fortunate owners, Messrs. W. H. Martin & Co., of San Francisco, the well-known seaway contractors, the handsome dividend of \$100,000 per month for the past four months. A recent careful examination of the mine made by John R. James of Tucson, a recognized authority on copper, shows that \$1,925,000 are in sight, estimating copper at 19 cents per pound. The original cost of this mine was \$30,000. A furnace was erected at a cost of \$11,000, making the total cost of mine and plant fall inside of \$50,000. The success of the Copper Queen has stimulated the development of copper properties in other sections of the Territory, and scarcely a day passes without reports of new strikes and big finds of this most valuable metal. The latest transfer of copper properties was made recently, to Mr. Christopher and other California capitalists, by O. A. Hyatt and others of the Apache, Midas and St. Nicholas mines, lying on the easterly slope of the Santa Catalina mountains, and situated about 55 miles from Tucson. The mines have an elevation of about 7,500 ft., and the vein lies between limestone and porphyry, the limestone being the overlying formation. The ores are found in the shape of carbonates and sulphurets, the carbonates predominating. The average assays show 30% in copper, and about \$20 in silver per ton. On the Apache location a cross-cut has now penetrated the vein for 15 ft. in ore of the above description, and the hanging wall of the vein has not yet been encountered. The ledge has been uncovered on the surface for 60 ft., and has been traced the whole length of the claim, 1,500 ft. Some specimens of copper ore taken from the cut, assay as high as 70%. The Midas and St. Nicholas claims are extensions of the Apache, and show the same characteristics. Charcoal is abundant, and can be furnished for 15 cents per bushel. Water rights have been secured, and the cost of smelting should not exceed \$10 per ton. As 30% copper ore is worth about \$60 per ton, there is a large margin of profit in smelting the ores on the ground. Yellow pine abounds, and this variety of timber makes the best charcoal known to the smelter. The climate is good all the year round. A good road can be constructed from the railroad tracks to the mines at an expense not to exceed \$3,000. The ores are free smelting, and there seems to be no reason why the successes of Bisbee should not be repeated at an early day in the Santa Catalinas.

There seems to be a disposition in some quarters to discourage copper mining in Arizona and mysterious hints are thrown out and circulated here in Tucson by certain Boston gentlemen to the effect, that the Calumet and Hecla mine of the Lake Superior region can produce enough copper to supply the demand in the United States. Of course, it is perfectly natural that said company should desire to retain the vast monopoly it has enjoyed for years, and which has enabled it to pay \$18,000,000 in dividends, but the claim of its friends and stockholders that it can supply the American market is preposterous and without foundation. The consumption of copper in the United States amounts to about 25,000 tons per annum, and

the consumption is increasing, owing to the new and various uses to which the metal is applied. The Calumet and Hecla produces about 600 tons a month, not one-third of the annual demand. Besides its ores, it averages only three per cent in copper, and has to pass through the process of crushing, concentrating and smelting before ready for market. In our Arizona mines where carbonates abound, the rudest kind of furnace is sufficient to work the ores and convert them into marketable copper. With the construction of the Guaymas railroad our producers will be able to ship from Guaymas direct to foreign ports, and will compete successfully with Chili in supplying the English demands which amounts to about 40,000 tons per annum. The future of the Arizona copper mines is bright and full of promise, and now that avenues of transportation are open by which products can reach tide-water, we ought to be able to under-sell every other copper country.

Value of Mineral Springs.

The following is an extract from a letter from W. P. Jervis, Conservator of the Royal Industrial Museum at Turin, Italy, and author of several works on the mineral resources and mineral springs of Italy, to the State Mineralogist of California:

"I have received your interesting reports, circulars, programmes, etc., by which I learned with pleasure that a mining bureau had been established in California which will in time be one of the economic triumphs of the United States, and of the rich State which has hitherto labored under the disadvantage of being without any scientific headquarters. I hope you will permit me to have the pleasure of presenting the third volume of my work—'I Tesori Sotterranei Dell Italia.'

"In reading carefully your excellent programme, I shall be happy to aid you as far as lies in my feeble power; meanwhile, if you approve of it, I will make you a good lithological collection, consisting of several hundred Italian rocks, with the principal minerals and ores contained in them, arranged stratigraphically, for nomenclature and consultation—such a series I made several years ago for the British museum.

"For many years I have devoted myself to the study of the mineralogy of Italy and its mineral springs, which I consider to be one of the greatest mineral riches of the country, as they attract thousands of persons annually, by whom immense sums of money are spent, besides the incalculable number of cures effected in many severe disorders.

"There are 1600 mineral springs in Italy. California has many still neglected. Has any one ever thought that they may turn out to be more valuable than gold mines, if the waters were properly analyzed under your able instructions, and if capitalists would erect proper bathing establishments or 'spas,' to be placed in the hands of skillful medical men, as in France and in Italy and Germany?

"The mineral springs of Vichy alone bring in yearly some one and a half millions of francs by the sole sale of the products, to say nothing of the incalculable amounts gained by the hotel keepers and the shops of Vichy. The same may be said of the waters of Aquì, Monte Catina, Albano, Porretta, and others in Italy on a lesser scale."

MULBERRY TREES.—Mrs. J. O. Whitney, Chairman of the Committee on Trees of the California Silk Culture Association, makes the following request: "Persons having mulberry trees in any portion of the State of California will confer a favor by sending us their address, as well as the number of trees they are raising and the names of the different varieties." California Silk Culture Association, care of lock box 1,229, San Francisco, California.

CALIFORNIA SCENERY.

It is hard to bring magnificent scenes to measurement by the industrial standard. At first thought it would seem to be a profanation of nature, as estimating the painter's masterpieces by the square-yard is an insult to art. And yet this is something of an industrial age, and the suggestion that there is business in a thing, means more to many people than a hint of the presence of the loftiest sentiment or the deepest emotion. It is sometimes of advantage to a writer that there is such a vein in men's minds, for those of us who are denied the power to picture beauty or frame tributes to sublimity find our pencils moving very freely to the jingle of the coin. Therefore, with due respect to the poetry which others can voice in praise of California scenery, we would mention its value as one of the material resources of our

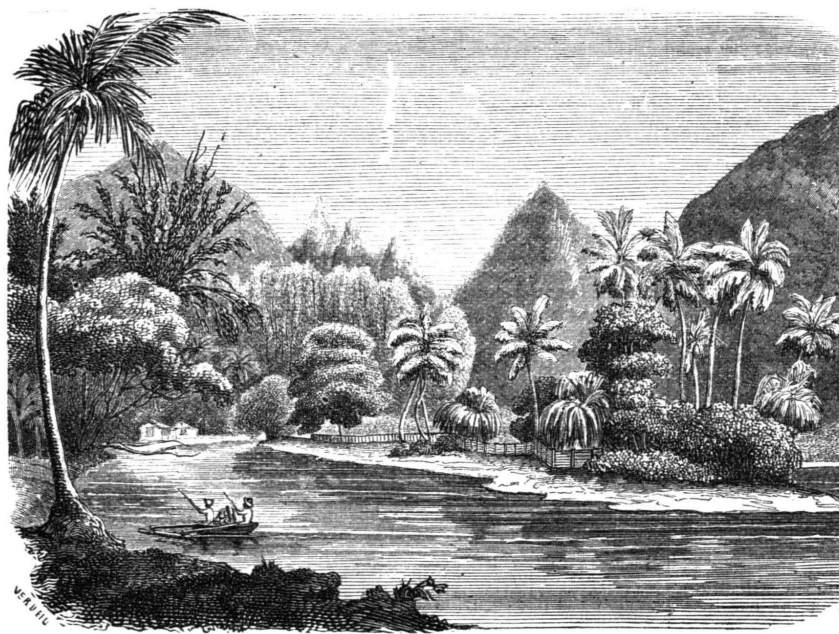
pening their wealth upon all classes of producers. California can surpass all these European countries in embodiments of the sublime and the beautiful. The Alps, with all their glaciers and wonderful heights, have no such vertical walls or magic waterfalls as Yosemite. They have no El Capitan that would require 30 Palace Hotel buildings, one above the other, to form the corner wall. They have no South Dome, upon whose vertical edge one can sit and his limbs will hang over a precipice of 5,000 ft. And these are but items in the great list of wonders in the valley. Beyond the confines northward and southward to the ends of the State there are other scenes which entrance the beholder and dwell in his speech to the end of his life.

It is eminently fitting that the State should have a care for the perpetuation of its natural inheritance, and should prepare for continual benefits from its unceasing and increasing charm for tourists. That our scenery is each year yielding us returns can be seen by the report of the Yosemite Valley Commissioners,

IN THE TROPICS.

The engraving on this page gives a glimpse of a tropical scene—a piece of moist low land covered with the luxuriant vegetation which flourishes beneath a torrid sky. Such spots are common the world around, if the traveler keeps within the "lines." They entrance the beholder, and win his praise until in the sultry air he feels his strength and purpose weakening, and then he longs again for the invigoration of the temperate zone. Tropical scenes make fine pictures and rich material for poets, but for life with noble purposes and notable accomplishments they are not adapted.

GERM FOOD AND ITS MANUFACTURE.—An Eastern firm has lately introduced an article of diet called "Universal Food," which is thus described by the *Miller's Journal*: In the manufacture of this food, those portions which the miller is so anxious to exclude as coloring the flour, the germs, are made use of. The principle on which the food is based is the introduction



A SCENE IN THE TROPICS.

State, which may be made to contribute far more than it does to the prosperity of our people.

It is conceded by those who have traveled that California has varied scenery of sea coast and plain, and hill and mountain, which no similar area on the globe can surpass. It is also true that these gems are arrayed in a setting of genial climates as peerless as themselves. In the vernacular of the showman, the State has peculiar "attractions," and people come from the uttermost parts of the world to see them. The result is that California has achieved an enviable position in art and literature; other results are that all visitors bring money which ministers to the success of our various productive enterprises, and many of them, won by the beauties of earth and air which they sought from afar, make the State their future abode, and bring their capital and their energy to aid in the development of our resources. In any way in which it may be viewed, California scenery is of inestimable value to her name and fame, and as an agency in industrial development, should not be overlooked.

We all know that Switzerland, Bavaria, Savoy, portions of Austria and France and other countries, derive a large part of their revenues from the expenditures of tourists. France, it is urged by some, could never have paid the enormous war indemnity to Prussia but for the steady tide of tourists pouring into her gates and dis-

and what is learned from the record of the valley is to a certain extent applicable to all our greater scenes. J. M. Hutchings, the able guardian of the valley, and whose voice and pen first introduced its grandeur to the world, in his report last December, shows that 25,518 persons had visited the valley during 16 years. These persons spend during their stay in the State, and irrespective of railroad fares, etc., an average of \$600 each, which being distributed among the smaller industries of the State has produced much comfort to many of our people. It may be fairly expected that the opening of new railroads from the East to this coast and the increased travel which will result, will make our valley resource still more valuable.

It is wise therefore that the State of California into whose charge the valley has been given, should take measures to fit the region for the fullest enjoyment of tourists. There will be \$25,000 expended for the improvement of the valley, the purchase of trails, etc. This sum judiciously expended as we expect it will be, will add greatly to the attractiveness of the valley.

YOUNG lady, examining some bridal veils: "Can you really recommend this one? Overzealous shopman: "Oh, yes, miss! It may be used several times."

of a natural chemical agent into the system, which has either not developed, as in the case of the infant, or which is lacking from such cases, as in disease. This chemical agent is diastase. Diastase is one of the chief ingredients in the pancreatic juice and saliva in the healthy adult. When from any cause the system becomes diseased, the percentage of animal diastase or ferment becomes less and less, until sometimes it is entirely absent. In children under one year of age it is found very sparingly. Starch, as starch, possesses no nutritive powers; it is only when converted into sugar and dextrose that it becomes of any value in the system. The province of diastase is that of a ferment. By its action starch is reduced into its component parts of dextrose and sugar; and if this fermenting agent be absent, the starch remains unchanged and useless. If therefore through disease or insufficient development this active principle of digestion is not secreted, the production and use of a food which shall fulfill this want is to be commended. The wheat germs are ground to a flour and made into a dough. This dough is cooked at a temperature of 150° F. for 30 hours in sealed boxes. This is re-ground and put upon the market in the form of a flour.

EADS' ship railway contract has been unanimously approved by the Mexican Chamber of Deputies.

SPEAK WELL OF THE LIVING.

"At midnight las' night," said the old man in a solemn voice, as he looked up and down the aisles, "at midnight las' night de speerit of brudder Charles Climax Goshport, a local member of dis club, passed from y'arth to de unknown. Only a week ago he sat in dis hall; to-night he am dressed fur de grave. What ackshun will de club take?"

"I 'spose, sah," said the Rev. Penstock, as he rose up, "dat it am in order to present a resolushun to de effect dat he was a man of de highest integrity, liberal-hearted, high-minded, an' dat his loss am a sad blow to de hull city."

"Yes, such a resolushun am in order. Brudder Penstock can you remember dat you ebber took Brudder Goshport by de han an' gin him a word of praise fur his hard work an' honest ways?"

"I—I—doan' remember that I ever did, sah."

"Am dar a person in dis hall who kin remember dat he ever put hisself out to favor Brudder Goshport?"

Not a man answered.

"Kin any one of you remember dat you took any pertickler interes' in how he got along?"

Not a voice was heard in reply.

"To be a little plainer," continued the President, "am dar one single pusson in dis hall who eber felt five cents' worth of anxiety fur Brudder Goshport's worldly or spiritual welfare?"

The hall was so quiet that the sound of Elder Toots rubbing his back on the sharp edge of a window casing gave everybody a start.

"Not a man in dis hull club—not a man in dis hull city, so far as we know, eber put hisself out to do a favor for or 'speak a word in praise of our lamented brudder, an' yet we have the cheek to talk of a resolushun settin' forth his many virtues an' our heartfelt sorrow! No, sir! We doan' pass no sich bizness heah! I should be ashamed to look his widder in de face, if we did. It am de way ob de world to let men alone jist when a little help would give 'em a broad and easy road. We h'ar of dis or dat man havin' won de gratituçe of de people, but we doan' h'ar of it until he am dead. When a man has gone from y'arth de papers an' de public suddenly diskiver how honest he was; what a big heart he had; how much good he wuz allus doin' an' what a loss to de world his death will prove. De time to praise a man is when he am livin' besides us. Praise hurts nobody, but many a good man has grown weary fur de want of appreciashun. Heah am 72 of us in dis hall to night, an' we have to own up dat not one of us neber wenten outen our way to prove to our brudder dat his gentle ways, his squar' dealin' an' his upright life war' any mo' 'preciated by us dan as if he had bin a hoss-thief! An' to pass a resolushun would be to brand ourselves hypocrites. Let no man dare offer one."—*Lime Kiln Club in Detroit Free Press.*

STRAWBERRY SHORTCAKE.—Mrs. H. M. Conant, of Santa Cruz, sends us the following: Prepare a dough the same as for soda biscuit, except stir a very thick batter instead of making a stiff dough; spread one inch thick on a well buttered tin; when baked, remove the brown crust on the top with a very sharp knife, butter and pile up the berries with sugar and a little cream, have ready a meringue of the white of eggs beaten to a stiff froth with pulverized sugar, at the rate of an even tablespoon to each egg, spread over the berries and set in the oven to brown.

REMOVING STAINS FROM MARBLE.—To remove stains from statuary marble, take equal parts of fresh oil of vitrol and lemon juice; shake up these substances very thoroughly in a bottle; wet the spots with the mixture, and in a few minutes afterward rub with a soft linen cloth, and the spots will be found to have entirely disappeared.

INTEREST IN JERSEY CATTLE.

There are many indications that Jersey stock is continually gaining ground in this State. The quick demand for young bulls which has prevailed for the last three years is evidence that satisfactory success has followed the use of the Jersey in the improvement of common cows for butter making, and the confidence which breeders of full blood Jerseys have in their operations, shows that the thoroughbred is both a pleasant and a profitable article. It is worthy of note that the Jersey interest all over the country is in a satisfactory condition, and some of the latest sales at the East have yielded excellent prices. For example, the herd of Mr. Wing was sold in New York May 5, by Peter C. Kellogg; 46 animals, old and young, averaging \$510 per head.

It is an interesting fact that American breeders of Jerseys have reached a position of excellence which makes them possessors of animals quite as good as any remaining on Jersey island, indeed there is reason to believe that there are American bred Jerseys which are better than any which can be imported. In this success the Jersey breeders have followed in the illustrious steps of American Short Horn breeders, who, as is well-known, drew so heavily upon the best Short Horn blood of England, and bred it with such success that English buyers have paid almost fabulous prices at American Short Horn sales and have taken back to England representatives of valuable blood, which had well nigh disappeared from English herds. The same course seems to be taken with Jerseys, for it is an open secret that Jerseymen are lamenting the fact that Americans are despoiling them of their best blood. This was freely said when the famous cow Coomassie was purchased for \$1,050 and brought to this country. Of this purchase and others like it the *Bulletin of the Jersey Cattle Club* says.

From the Jerseymen's point of view the exportation of Coomassie and the exportation of other of their finest cows, will make the year 1886 memorable as one of disaster. No money is too much for us to pay to gain possession of the best animals. No money can compensate the farmers of the Island of Jersey for the loss of their best animals. Coomassie was one of the very best cows in Jersey. She is now one of the best in America. Her influence for good here—if she breeds—will prevail through all future time. The loss of the future influence of her blood on the stock of the Island will never cease. Our fortune is not to be made, nor is the pre-eminence of the race as developed in Jersey to be undone, by the importation of any single cow; but, happily for us, and unhappily for Jersey, the importation of Coomassie indicates that the best blood will follow the longest purse, and that as fast as animals of remarkable excellence are produced there they will be purchased here. This result is probably inevitable.

But there is ample reason to believe that American Jersey breeders have already reached a point of excellence in the improvement of these cattle, which places them in advance of anything obtained by the home breeders. Richard Goodman, a Massachusetts breeder, recently cited evidence in support of this proposition in the *Ploughman*, of Boston. He shows that both for Jersey prices and Jersey butter records, America is pre-eminent at the present time. He says:

For one record of 16 lbs. of butter a week in England or Jersey we have a dozen well authenticated here. And for annual records we stand not only far ahead of Jersey and England, but we stand alone.

Pansy (1019) and Jersey Queen of Barnet with over 600 lbs. each, Jersey Belle of Scituate with 705 lbs., and Eurotas with 775 lbs. of butter for a running 12 months! What reports have we from the old country which equal or come near to any one of these four?

As to prices, great acclaim has been made over the paying of \$400 for a bull, and \$1,000 each for three cows in the Island of Jersey lately, and these, be it remembered, were famous prize animals. But in New York last May \$600 was paid at public auction for a bull calf, and \$1,400 and \$1,425 for young cows; and as to Jersey Belle of Scituate, it is reported upon good authority that \$10,000 has been offered and refused for her; and for Eurotas it is probable that \$15,000 would be declined. And the owners of these two cows would be likely to decline these prices respectively for their animals, for at the rates at which their calves, male and female, are selling and are engaged for a number of years to come they are bringing their owners a good 6% upon a principal of \$20,000 and \$30,000. And these are *American* Jerseys; that is to say, so little blood of recent importations runs in their veins, and, as far as we can learn, their butter performances are so much better than those of their imported ancestors, that we can fairly claim that their superior qualities are the

result of American food, the American climate and American breeding. Jersey Queen, of Barnet, is three generations from importation on her dam's side, and through both of her grandsires has half a dozen generations of American ancestors. Jersey Belle, of Scituate, is backed up by three solid rows, of half a dozen generations each, of ancestors bred in America. Eurotas, though sired by an imported bull, is thoroughly American on the side of her dam. Pansy (1019) in three of the four lines running through her grandparents has two and three generations of American sires and dams between her and her imported ancestors.

The deductions from these records are weighty, and they are that America has now the best living Jersey cows; that the best cows have the longest lines of American ancestors behind them; that there has been wonderful improvement secured in the American animals over the foundation stock in the past and that there may be still greater improvement in the future. It is also evident that as Jerseys are bred over the whole breadth of this country, we may secure infusion of new blood from part to part of our own country as well as to seek it abroad. There is in the United States such a variety of climates that any advantage there may be in using blood from different surroundings, may be secured without going beyond our borders. As these points will probably all figure in the future of Jerseys in the United States it is well that California has already secured some of the best attainable blood, and is using it wisely and intelligently. It is fortunate also that our breeders are displaying enterprise in their operations, and that the Jersey interest is awake on this coast. When the general command is onward, it is well not to be laggards.—*Exchange.*

THE QUEEN TURKEY.

When a little girl I became interested in a plain hen turkey with brownish feathers and subdued looks. She had stolen her nest, as we say, when a hen takes a notion to be private about her affairs. To my great delight, she came off with twelve young turkeys, every one of which she raised. She received considerable help from the inmates of the farm house in supporting her large family, all of which proved to be male turkeys.

Like a good judicious mother, she was equal to the occasion, and never allowed her sons undue liberties. Unlike some human mothers, who are always apologizing for lack of authority by saying "Boys will be boys," she kept an eye on her brood, and trained them properly. Again, like a human parent, she could not always remain at home, and when her family were fully grown, and trustworthy, as she believed, she hid away to her former nest to deposit to its safe keeping other eggs.

She slipped away so quietly, for some time she was not missed. At last the news seemed to be telegraphed from one to another that "the queen mother was gone," when there arose such an outcry, each young aspirant strutting and gobbling furiously, as though disputing for the ascendancy in authority. Presently I saw her crossing the garden, with dignity in her step and decision in her eye. Fearlessly, she walked in among them, cuffing and pecking them right and left, till each one smoothed out his ruffled feathers and assumed a meek and obedient demeanor. Cautiously, and seemingly unobserved, again she withdrew to her retreat, when the clamor of insubordination again arose.

This time she was truly indignant, and hastening to the spot, with unusual severity, and unsparing authority, she dealt them blows, accompanied with a kind of scolding noise, which soon quelled the insurrection. The angry red-faced gobblers much larger than herself, retired to contemplate and cool off; while she deliberately and in full view returned to her chosen nest to remain undisturbed, and always after retained her right as queen.

ORANGE SALAD.—Peel eight oranges with a sharp knife so as to remove every vestige of skin from them; lay them either whole or cut in slices in a deep dish; strew over them plenty of powdered sugar; add the juice of a lemon and a little more sugar. Keep the dish covered until serving.

A MARRIAGE AMONG THE QUAKERS.

BY AUGUSTA ALLEN.

Sweetly the April sun smiled upon that bridal morn. Swiftly the clouds sped along their azure paths, loth to obscure for a moment the light which made earth so glorious.

It was not Sabbath morning. Among "Friends" the good "First-day" is held too sacred for the signing of a contract, however solemn.

There is joy in the very air. No wedding chime disturbs its serenity but the flowers swing their tiny bells in rapture and their silent music floats on breath of perfume.

In moist hollows cowslips tip their golden cups and fair Iris, Heaven's own child, unfurls her flag and beholds its dew-drops kissed into diamonds by the sunshine.

With hearts in sympathy with love and nature we dance along the path leading to the old meeting house.

One fortnight ago the lovers announced within these walls their purpose of marriage and received the consent therefor from the grave mother church, who wisely chose from her number four most sedate elders to be present at the marriage feast, that all might be conducted "soberly and in orderly manner."

To-day the same walls witness the union.

Without are many signs of festal morn. Dandelions sprinkle the grass with gold. Wild violets cluster in groups, winking their blue eyes as they nod in secret conference.

Creamy locusts bend to strew the bride's pathway with fragrant snow, while the birds warble a wedding carol in the branches overhead and the sweet note of the meadow lark is heard in the distance.

Within, the walls are cold and bare. No blossoms wreath the gray pillars. No marriage bell with calla clapper sways in odorous silence. Still there is no dearth of flowers. See the Quaker maidens! the lilies of the valley. Pure, colorless, chaste as the very snow. The children are the rosebuds. They form animated wreaths and clusters to grace the homely benches, while the tiniest, fairest buds of all nestle on the bosoms of the mothers.

The congregation is assembled and silently waits. Not the hushed wait-

ing of Sabbath worship, however, for there are impatient turnings of the head among the young. Bright eyes glance momentarily toward the side door which stands open. The eyes of the old are fixed upon the floor and each placid face is an open book which he who lists may read.

See! With noiseless footsteps a young pair approaches. The bride! None other could lean so lovingly upon another's arm. None other could possess a face so full of heavenly radiance.

Her dress is silk of purest white and falls in soft folds to her feet. Her little bonnet is white and simple as her robe. No bridal veil enshrouds her graceful form. Her only ornament is that of a meek and quiet spirit, and right well does it become her beauty.

The bridegroom is plainly clothed in drab. Behind these two walk three other couples similarly clad. Noiselessly they move along the aisle, keeping step to the music of their own happy heart-beats.

Quietly they take their places upon the rising benches facing the main portion of the congregation.

A profound silence falls upon the assembly.

The bride sits with her head slightly bowed forward, her sweet lips trembling, her moist lashes resting upon her pale cheeks.

The groom, with head erect and beaming eyes, says as plainly as words can speak: "Envy me all ye young men, I am the happiest man in the world."

The bridesmaids blush and smile, sending conscious glances about their circle of young friends. Those white robes, those hueless bonnets are not everyday affairs. Few and great are the occasions upon which this maiden beauty finds so fair a setting.

It is a solemn time to the dear old fathers and mothers. Each is recalling a like scene in the dim past, when the world was new and there was no such thing as pain or trouble in it.

At a given word the lovers rise, turning toward each other. Right hand clasps right hand and the groom's voice, strong and fervent, pronounces the solemn vow: "In the presence of the Lord, and before these friends, I take thee, Rachel Wood, to be my wife, promising, with divine assistance, to be unto thee a loving and faithful husband

until death do us part." There is a moment's hush and her sweet voice tremblingly begins: "In the presence of the Lord and before these friends I take thee, Elwood Hooper, to be my husband, promising, with divine assistance, to be unto thee a loving and faithful wife until death do us part." What faith, devotion and constancy are breathed in her words!

Their seat is resumed, a tiny table provided with pen and ink is wheeled to their side by the first groomsman. The first bridesmaid removes the bride's right glove. The groom signs his name to the marriage certificate. The bride, with face suffused with blushes, writes beneath it "Rachel Hooper." The stand is carried to the parents of the young couple. They sign their names as witnesses. A person, previously appointed, reads the marriage certificate aloud and the rite is performed.

Again there is silence throughout the house. The spirit of love broods over the place. An old man feels that Heaven requires a few words from his lips. He removes his broad hat and his white locks fall about his face. He has known these lovers in their infancy. As children they have been his cherished pets, and to-day his heart is very full in their behalf. Tenderly he speaks to them of the dangers before them. Lovingly he teaches them to shun the evil. Earnestly he exhorts them to a life of purity and holiness.

When he resumes his seat and replaces his hat, heads are reverently bent. The air seems freighted with ascending prayers.

At length a voice announces. "Our young friends may now consider themselves dismissed." The wedding party moves out as noiselessly as it entered. Handshaking and cheery converse extend throughout the congregation, while all who wish affix their names to the important document lying upon the little stand.

Upon the wide porch the people throng to kiss the bride and shower congratulations upon the happy pair. How the staid old house echoes to the bursts of laughter from the porch and from the groups upon the sward. Soon the carriages bear the happy company to the home of the bride. The marriage dinner is announced and about the table gather the fathers and mothers,

the dear "elders" sent by the "meeting," bride and groom and gay young friends.

It is customary among Quakers, as elsewhere, for the whole bridal company to sit together at the marriage feast, intimate friends being chosen, as a mark of special honor, to wait upon the table. But to-day the wedding attendants, quaintly and properly called "waiters" among Friends, stand behind the chairs to serve those who are seated.

All heads are bowed low and all unite in silent pleading that this meal may be blessed to those who participate.

Now the carving begins and with it merry jokes and honest laughter. The good old "elders" join in the glee with as much zest as though they were not here for the expressed purpose of preserving sobriety. Dear hearts! They have not forgotten their youth. Under those drab vests and folded kerchiefs is a fund of mirth undreamed of by the world.

The bridesmaids, with coquettish aprons tied over their silken robes, flit about, serving with dainty grace. It is a pretty picture upon which the eye delights to rest.

The feast over the waiters are served in their turn. The afternoon and evening are spent in harmless games and merriment. At an early hour the gay company disperses with loving good-nights and best wishes.

As we walk homeward under the April stars, our feet bending the dewy grass and brushing the sleeping flowers, we wonder why the world spends so much for wedding pomp and show, with its attendant strife and bitterness, when there is such sweet, wholesome joy in simplicity.

Idaho has a total area of 55,228,160 acres, of which 15,000,000 are agricultural in a natural state, or such as may be reclaimed by irrigation; 5,000,000 acres of pasture land, 10,000,000 of timber lands, and the remainder consists of mineral, lava and mountainous lands.

Ask your druggist to show you a large bottle of Ammen's Cough Syrup, and read the label. We can honestly recommend it as the best. Try it.

For first-class photographs go to Abell's gallery, west side of First street, between Morrison and Yamhill.

WM. O'DONNELL.

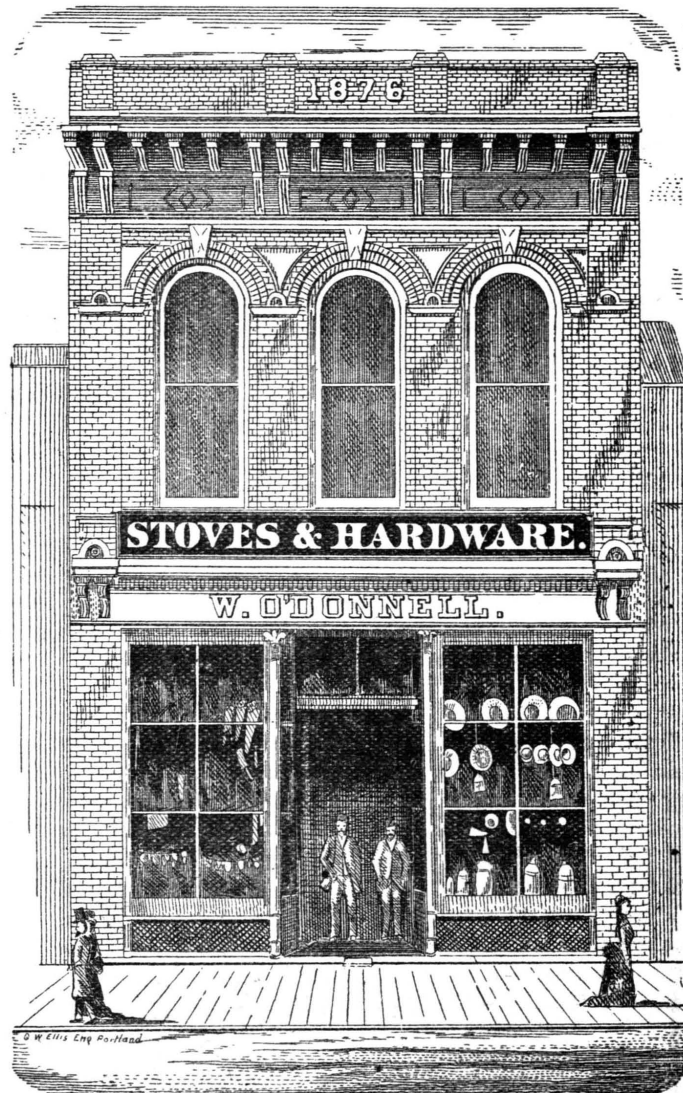
It is always a pleasure to us to be enabled to write of the progress of the different cities and their business men, and we therefore present our readers with a view of the store of Wm. O'Donnell, at Walla Walla. The establishment is a substantial brick building, fitted with the most modern contrivances for the rapid transaction of business. The proprietor is a practical tinsmith, learned his business in St. Louis, Mo., afterwards came to the Pacific coast and for several years worked at his trade for L. M. Starr, Esq., then in business in Portland. About ten years since he removed to Walla Walla, and from then dates his success. By strict attention to business he has not only amassed a handsome competency but built up the largest trade in his line east of the Cascades. The lower floor of his building is 30 feet wide by 80 feet in depth, and is used as the salesroom. In it we find a complete stock of stoves, ranges, tin-ware and house furnishing hardware generally. The shelvings are well stocked with builder's hardware, and the rear contains pumps and everything needed for plumbing and steam fitting. The entire upper part of the building is used as the workshop, where Mr. O-

Donnell furnishes steady employment to a number of skillful workers in tin and sheet iron. For enterprise and pluck the proprietor of this establishment has few equals east of the Cascade mountains.

To obtain a fine view of your residence leave your order with I. G. Davidson. He has now in his employ an artist who makes a specialty of views of buildings, animals, steamboats, etc. In his gallery, cor. First and Yamhill streets, the best of work, at living prices, is being executed, *sa heretofore*.

G. Davies & Co., at Seattle, make all importations of stationery and books direct from publishers. Mr. Davies is now in the east making arrangements with publishers which will enable them to furnish everything in their line as low as the largest San Francisco importing house. Their stock of blank books is especially complete.

"The Aldus," at Seattle, under the management, of Jack Levy, has the well-deserved reputation of being the only strictly first-class hotel on Puget sound. A good hotel is something Seattle has been in want of for some time past, and we are glad to see the want supplied.



SALESROOM OF WM. O'DONNELL, WALLA WALLA, W. T.

PLANTING FOREST TREES.

The remarkable inroad made upon the forests between here and The Dalles, as the Oregon Railway & Navigation Co.'s lines progress eastward, should teach our people a lesson. So rapidly are the giant firs along the middle Columbia disappearing, that it is no vague prediction to say, that by the time the Baker City and Union Flat lines are complete, that stream will be as badly denuded of timber as the frowning basaltic cliffs and desolate sand dunes that are to be met above Celilo. Already the principal manufactories in Dayton and Walla Walla are shipping their timber from Portland.

The federal legislation on this subject has not seemed to meet the intent of the law, so far. The provisions of the timber act are easily avoided, and it seems to be a matter in which there is more apathy than interest, even on the part of those who were, before its passage, the most earnest advocates of the scheme. But as the coast continues to settle up, the evidence of wasting timber becomes painfully evident to those who have nurtured this great state into its present power from a weak and struggling Indian territory. If none of the timber were cut but such as could be worked up at once, or if that cut for fuel were cut merely from the uprooted and windshaken timber lying upon the ground, the outlook would be a better one. But the cordwood chopper is no economist, either politically or socially, and his keen axe lops down straight grained trees, and away they go, for two dollars per cord, into the furnace of the first passing steamboat.

Our cottonwood groves along the rivers have remained intact, so far, merely for the reason that cottonwood is inferior to fir as a generator of steam. But the time is not far off when they too must be leveled with the ground. Up to 1868 there was no branch of industry to utilize this class of timber. But about that time the investments of San Francisco in sugar plantations in those lovely tropical isles where the young ladies wear cotton from May to September—in their ears—began to create a demand for tasteless and colorless staves for barrels. Then it was that the cottonwoods along the Sacramento and Feather river bottoms were felled and split, till the forest leper, the

sycamore, remained sole spectator of the havoc created by the axe. Now we learn that a constant demand has exhausted the limited supply and that the sugar magnates, of whom King Spreckles is chief, are looking to the Oregon rivers for their supplies of staves and shooks.

The supply of ash along the Willamette and its tributaries was never too abundant, but would probably have sufficed but for the remarkable progress made in the manufacture of parlor and bedroom furniture in the city of Portland. The Oregon style of ash mounted with burl maple, is certainly the best furniture in the world for its price. A representative of the largest billiard table manufactory in America visited Portland about a year ago, and our man about town took him around sight-seeing. On visiting the warehouses of the Oregon Furniture Manufacturing Co., he was agreeably disappointed at the quality of the goods; but when he was told the prices he seemed utterly staggered. "And can you pay wages and rent at such prices?" he asked. The truth is, that Oregon furniture is sold daily in San Francisco by the jobbers there as their own product, and such is the demand for it, that the ash trees along our rivers begin to show signs of depletion.

One can hardly go amiss in the planting of either hickory, black walnut or elm trees in this state. It is as good as a life insurance policy, for though it will not yield him any great revenue during his lifetime it will insure a handsome legacy to his children. The man who plants the apple or peach may hope for some remuneration at once, but he who plants shade trees can have nothing selfish in his composition. In the years to come, when his head is pillowed beneath the daisies and the gentle lark carols above his narrow couch, those he loved in life shall mourn him in death, and echo benisons upon his name amid the grateful shade of the branching elm for spreading beech. We wish everybody could look upon this matter as we do.

PACIFIC COLONY.

During the week there arrived in this city the locating committee of the Pacific Colony, recently organized at Russell, Kansas. The committee consisted of Mr. T. Ackerman, president of the Russell National Bank, and

Messrs. H. W. Tusten, J. W. Ellithrope, J. J. Denham, and G. de Nevue. They represent a colony of 100 families who intend to emigrate to the Pacific Northwest, and settle together, if possible. The committee appear to be well pleased with what they have seen. They are going to examine the Palouse and Spokane country.—*Union*.

Send them up this way; we can show them better land than either the Palouse or Spokane valleys, along the Idaho side. The Potlatch, Camas prairie, Weiße and Waha sections of country are all excellent, and waiting for settlers.—*Lewiston Teller*.

Why does not the proprietor of Ammen's Cough Syrup publish testimonials from those who have been cured or relieved by his medicine? The answer is, the greater the humbug the more testimonials they publish. Ammen's Cough Syrup is no humbug, and to prove that, let it stand on its own merits; a 15-cent sample bottle is prepared, which is certainly more convincing than a testimonial from a stranger. Large bottles, \$1.00. Ask your druggist for it.

When you meet with an accident, get a sprained ankle, or are otherwise injured, don't go to the expense of sending for a doctor, but apply some of Kendall's Spavin Cure, and you will experience relief at once. Read their advertisement in another column.

The immense stock of dry goods of the firm of J. F. D. Wrinkle & Co., cor. of First and Salmon streets, is now in and ready for inspection. It comprises every novelty in the line of seasonable goods for ladies' and children's wear. Residents in the country will be furnished free of charge, on application, with samples of anything they may desire, and can rely on receiving by return mail their selections fully as cheap as if they did the closest shopping. J. F. D. Wrinkle & Co. is one of the houses it will do to tie to.

The Oregon Blood Purifier is now the favorite medicine with persons suffering from impurity of the blood, not only here at home, but it is rapidly finding its way into eastern homes. Wm. Pfunder, Esq., the originator and proprietor of this famous preparation has every reason to feel proud of the success attained.

Jacobs' Fever & Ague Cure is accomplishing wonders in not only curing but also in entirely eradicating from the system all malarial diseases. This remedy has some of the very best testimonials regarding its efficacy from reliable and well-known gentlemen of the Pacific coast. Mr. A. F. Gunn, of the house of Cunningham, Curtis & Welch, testifies that after suffering from fever and ague for several months and trying the prescriptions of numerous reputable physicians without finding relief, he was entirely cured by using Jacobs' Fever and Ague cure.

H. HANSON, Nursery and Seedsman.

Seedstore and office, 84 Front St., Portland, Or.
Catalogues free. Nursery, East Portland.

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Board per week \$4; Board per week, with Lodg-
ing, \$5; Board per day \$1; single meals, 25 cts.
lodging, 25 cts.

Baggage conveyed to and from the House free of
Charge. No Chinamen employed.

The Latest Styles of elegant DRESS HATS

can be had
only at
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THE DALLES, OREGON.

Keeps at all times a most complete
stock in his line, as well as a fine
assortment of Fancy Goods
and Toilet Articles.

E. O. SMITH,



Dentist,

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Livery, Hack and Feed Stables,



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Reasonable Charges for Hire. Particular at-
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Hacks promptly attended to, Day or Night.
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Oregon Transfer Company.

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Office—Southwest corner Second and Stark Sts.
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Beef, Pork, Mutton, Veal, and Corned
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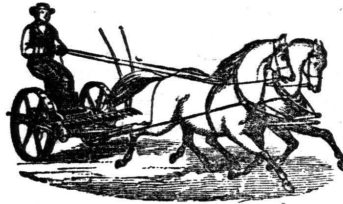
(SUCCESSORS TO HAWLEY, DODD & CO.)

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Offer for sale at lowest rates the following first-class machinery, for which we are Sole Agents:

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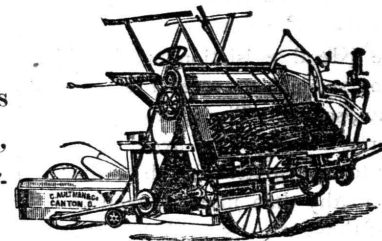
So large a portion of the grass and grain
crop of the Pacific coast has been cut by the
Buckeye that no farmer here can be ignorant
of its merits, or require argument to convince
him of its superiority. It is too well and fav-
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As IMPROVED for 1881 it stands unrivaled.

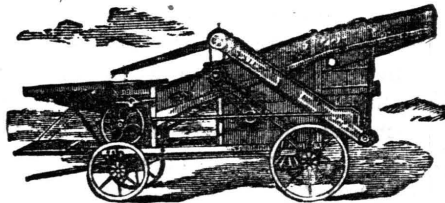
THE BUCKEYE WIRE AND TWINE BINDER.

The Standard of Excellence.

It leads all labor-saving machines
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Strongest and Lightest-Running Self-
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THE NE PLUS ULTRA OF ALL
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Unequaled for Light Draft, Power,
Durability, Fast Threshing and
Clean Separation. An IMPROVE-
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stands ahead of all other threshers.

Send for special Price List.

CANTON MONITOR UPRIGHT ENGINE, with or without traction.

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Send for Special Circulars and New Price List.

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PRICE OF CANDIES!

TO THE TRADE:

The constantly increasing demand for our goods during the last year induced us to greatly en-
large our factory, and we are now prepared, and have decided to place our Candies at such prices
that we feel confident the dealers in this State, Idaho and Washington Territories will find it to
their advantage to patronize "home industry."

References required with first order. SEND FOR PRICE LIST. Respectfully yours,
P. O. Box 64. ALISKY & HEGELE.

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Between San Francisco & Portland.

In consequence of accident to the steamer State of California, the following schedule of sailing days of ocean steamers has been arranged, to wit:

LEAVE SAN FRANCISCO,

COLUMBIA--May 28th.

OREGON--June 4th.

CALIFORNIA--June 9th.

LEAVE PORTLAND,

OREGON--May 29th--June 10th.

COLUMBIA--June 3d.

Due notice will be given of any further change.

Right is reserved to change steamers or sailing days.

THROUGH TICKETS sold to all the principal cities in the United States and Canada.

RIVER AND RAIL DIVISIONS.

Columbia, Willamette and Yamhill Rivers.

FEBRUARY 1, 1881.

Leave Portland for	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Dalles, Walla Walla, Umatilla and up-river points.	5 A. M.	5 A. M.	5 A. M.	5 A. M.	5 A. M.	5 A. M.
Astoria, Kalama, Tacoma, Seattle.....	6 A. M.	6 A. M.	6 A. M.	6 A. M.	6 A. M.	6 A. M.
Victoria, New Westminster.....			6 A. M.		6 A. M.	
Cathlamet, Bay View, Skomocoway, Brookfield.	6 A. M.		6 A. M.		6 A. M.	
Westport, Clifton, Knappa.....		6 A. M.		6 A. M.		6 A. M.
Dayton.....	7 A. M.		7 A. M.		7 A. M.	
Salem, and intermediate points.	6 A. M.			6 A. M.		
Points on Snake River.	5 A. M.			5 A. M.		

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A. L. MAXWELL,
Ticket agent O. R. & N. Co.

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Gen'l Freight & Pass'r agent.

T. F. OAKES,
Vice Pres. and Manager.

SPECIAL NOTICE--O. R. & N. CO.
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Hereafter, until further notice, boats of this company carrying passengers and merchandise will not run above Salem on the Willamette river.
GEO. J. AINSWORTH,
Superintendent.

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Leading Clothiers,
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Nothing but first-class goods sold,
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Manufacture Steam Engines and Boilers, either high or low pressure, and

GENERAL MACHINE WORK.

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COFFEE AND SPICE MILLS.

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Always ask for Fell's Coffee at the Mines.

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Bedding and Lounges on hand or made to order. Carpets Sewed and Laid, Wall Paper Hung, and all kinds of Upholstery work done at reasonable rates.

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L. Rose & Co., London, Lime Juice Beverages,
Etc., etc., etc.

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Keeps constantly on hand Tea, Coffee, Butter, Eggs, Flour, Oilman's Stores, etc.

Ask for Gossnell's own Home-cured Hams and Bacon.

At the London Bazar

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May always be found a fine assortment of
Rare Vases, Clocks, and Parlor Ornaments;
Toys, Shells, and Curios,

Just such Goods as visitors from abroad delight in examining.

Callers are made welcome.

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FEVER & AGUE
CURE

202 Sansome St., Room 1.

The subscribers beg leave to inform the public that they are the sole possessors of J. J. Jacobs' great Remedy for the positive cure of Malarial and Fever and Ague, which they guarantee to effect a perfect cure in six days, no matter how long the patient has been suffering from those serious and painful diseases. The great feature of this medicine so attunes and renovates the system that when cured renders the patients perfectly impervious to any further attack and enables them to live in all malarial districts, with the positive assurance that they will be entirely free from any future ailment of said diseases.

Price of Bottle, to Effect Perfect Cure, \$10.

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Interior Merchants' Agency

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**Buying of all kinds of
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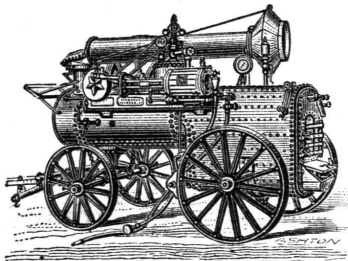
We guarantee obtaining the highest market prices for all goods consigned to us.
Charges reasonable.

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And receive FREE The Nichols Shepard & Co. 1881 Circular, giving full information and details of their improved

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Second Street, bet. C and D, extending to Third.

Within three blocks of eight of the largest hotels in the city, and five blocks of the depots of all railroads, steamships and boats.

Supplied with abundance of Light and Ventilation; Stalls as good as the Best on the Coast, and every accommodation obtainable anywhere will be found here.

VERY FINEST TURNOUTS FOR HIRE.

Consisting of Two-seated Top Rockaways, for one or two horses, Open Sidebar Road Wagons, Top and Open Buggies of the Very Best.

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WHOLESALE GROCERS,
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Wheat, Flour, Wool, and all kinds of Oregon Produce.

Liberal Cash Advances on Consignments.

INDEPENDENCE DAY!

Races! Races!

The Northwestern District Agricultural Association



Will give their first meeting at the New Park near East Portland, on

MONDAY, JULY 4, 1881.

And continuing four days. The following programme was adopted by the Board:

First Day.

1:30 P. M. Trotting for 2:26 class. First horse \$450; second, \$225; third, \$75 \$ 750
3 P. M. Running race; dash of five-eighths (5/8) of a mile, for all ages. First horse, \$240; second horse, \$120; third horse, \$40 400
3:45 P. M. Running race; dash of one mile and repeat. First horse, \$300; second horse, \$150; third horse, \$50 500

Second Day, July 5.

10 A. M. Glass ball shooting for a purse, open to all the Pacific Coast, for teams of 4 persons, ten balls each—first team \$125; second team, \$50; third team \$25; entrance 10 per cent. or \$20 per team 200
1:30 P. M. Trotting for 2:50 class, open to all horses owned May 20th in Oregon, Idaho and Washington Territory. First horse, \$240; second horse, \$120; third horse, \$40 400
3 P. M. Trotting for 2:38 class; open to the coast. First horse \$300; second horse, \$150; third horse, \$50 500

Third Day, July 6.

1:30 P. M. Trotting race for gentlemen's road horses; to road wagons, to be driven by their owners or private gentlemen who have never driven a race for money. First horse \$150; second horse \$50 200
2:30 P. M. Trotting race for 2:38 class, free to all horses owned in Oregon, Idaho and Washington Territory. First horse \$300; second horse, \$150; third horse, \$50 500
3:30 P. M. Running race for all ages, dash of mile and a half. First horse, \$275; second horse, \$130; third horse, \$45 450

Fourth Day, July 7.

1:30 P. M. Trotting race, free for all horses on the Pacific coast. First horse, \$450; second horse, \$225; third horse, \$75 750
3 P. M. Running race for all ages, 2 1/4 miles. First horse, \$450; second horse, \$225; third horse, \$75 750
3:45 P. M. Consolation purse for all horses that have not won first or second money during the week, seven-eighths of a mile. First horse, \$180; second horse, \$90; third horse, \$30 300

Entrance, ten per cent. on all the above trotting purses, to close Monday, June 20, 1881, at 7 P. M., of which entrance one half must accompany the nomination. The entrance money on running races for Monday, July 4, must be paid to the secretary by 6 P. M. on the previous Saturday, July 2, and on all other running races on the night before the race, at 6 P. M.

All races must be ridden in colors, to be filed with the secretary. Three entries to fill, or no race. All the trotting races are mile heats, three in five, national rules to govern. Running races governed by Pacific Blood Horse rules.

R. B. KNAPP, President.

THOS. B. MERRY, Secretary.

WHALLEY, FECHHEIMER & ACH,

Attorneys at Law,

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

The State Fair.

Commences Wednesday, June 29, 1881, and closes July 6th. Grand celebration on Grounds, Monday July 4. Booths rented at auction, Wednesday, June 8th. By order of the Board.
E. M. WAITE, Secretary.

Silk Hats.

The largest and best assortment at

Meussdorffer's Hat Manufactory,
151 Front and 162 First Sts., Portland

\$5 TO \$20 per day at home. Samples worth \$5 free. Address
STINSON & Co., Portland, Maine.



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BLOOD IS THE LIFE!

IT HAS A MARKED EFFECT wherever there is an atonic effect of the Visceral Muscular Coat, such as Dyspepsia, Headache, Neuralgia, Vomiting, Bilious Attacks, Rheumatism, Pains in the Stomach and Bowels. Irregularity of the Bowels, Costiveness and Constipation, which are so obstinate and yet so common in cities, where people of necessity must live a sedentary life most of the year.

A Lady in This City who had been a sufferer for years from obstinate Constipation of the Bowels, and had been unable to obtain relief from other medicines, was relieved after one week by the use of the celebrated "OREGON BLOOD PURIFIER," and subsequently was PERMANENTLY CURED by its use, and is now using it occasionally to prevent a relapse.

In this case it is apparent that the "Oregon Blood Purifier" was THE REMEDY much needed. It corrected the torpidity of the Liver, overcame the inaction of the Bowels, and restored them their wonted functions. Your Druggist keeps it; insist upon getting it; take no other remedy instead.

Price, per Bottle, \$1 00; or Six Bottles for \$5 00.

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**Catalogue of New, Rare,
and Beautiful Plants**

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INTRODUCTORY.

Our Dry Goods Department!

Farmers'
and
Mechanics'
Store.



Farmers'
and
Mechanics'
Store.

The necessity has long been felt of a Dry Goods House which has for its standard,
SQUARE DEALING AND PRICES TO SUIT THE TIMES.

With the view of satisfying this daily increasing want of our patrons, and deeming it incumbent upon us to show our appreciation of the generous support vouchsafed us, we concluded to make this line one of our specialties, and instructed our California and Eastern buyers to make a careful selection of the goods desired, which we have just received and offer to the public, comprising a full line of

Imported and Domestic Dry Goods.

Our clerks are instructed, under the penalty of dismissal, to make no misrepresentation of goods.
We refer to the following Price List:

Cashmere, double width, from 30 cents to.....	\$1 00
Cashmere, single width per yard, 15 cents to.....	25
Silk Lustres, plain and brocaded, per yard.....	25
Worsted Brocades, double width, 20 cents to.....	50
Camel's Hair, all wool, per yard, 20 cents to.....	30
Plaids, per yard, from 18 cents to.....	40
Plaids, Silk and Tinsel, per yard.....	45
Momie Cloth, double width, worsted.....	30
Momie Cloth, single width, 15 cents to.....	25
Grenadines, all shades.....	15
Worsted Dress Goods, per yard.....	12 1/2
Repps, from 15 cents to.....	19
Snowflakes, 10 cents to.....	18
Isabella Suiting, per yard.....	08
Fine Black Satin, per yard.....	60
Black Silk.....	90
Velvet.....	65
Tamise Cloth, 25 cents to.....	50
Empress Cloth, all wool, all shades.....	40
Debege, all wool, double width.....	30
Best prints, 16 yards for.....	1 00

DOMESTICS.

Fancy Lawns, fancy colors per yard.....	10c
White Pique.....	10c
Grass Cloth.....	10c
Fine Dress Linens.....	15 and 20c
Table Linen, plain and checked.....	35 to 40c
Fine Nottingham Curtain Lace.....	75c
Florida Flannels.....	15c
Extra width, all-wool Flannel.....	50c
Cheviot.....	10 to 15c
Heavy Cottonades.....	20 to 30c
30-inch Gingham.....	12 1/2c
Lonsdale Muslin, 10 yards for.....	\$1 00
Crash, per yard.....	8c
Canton Flannel, extra heavy.....	15c

Embroideries

From 5 cents per yard upward.

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The Model Hotel of the Northwest.
Rates, with Board, \$2, \$2.50 and \$3.00 per Day

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Dolmans, Capes, Walking Jackets,
Etc., in great variety.
LEWIS & STRAUSS,
123 First St.

HARDWARE!

Wholesale and Retail,
At **BOTTOM PRICES.**

DAYTON, HALL & LAMBERSON,
194 First St., Portland, Or.



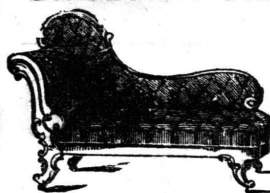
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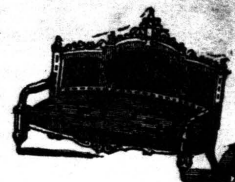
WM. KAPUS, Secretary.

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If you have SICK HEADACHE, DYSPEPSIA, CONSTIPATION, BILIOUSNESS, NERVOUS and GENERAL DEBILITY, IMPURITY of the Blood, Etc.,

USE ROSE PILLS,

Which promptly RELIEVE and CURE those disorders.

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