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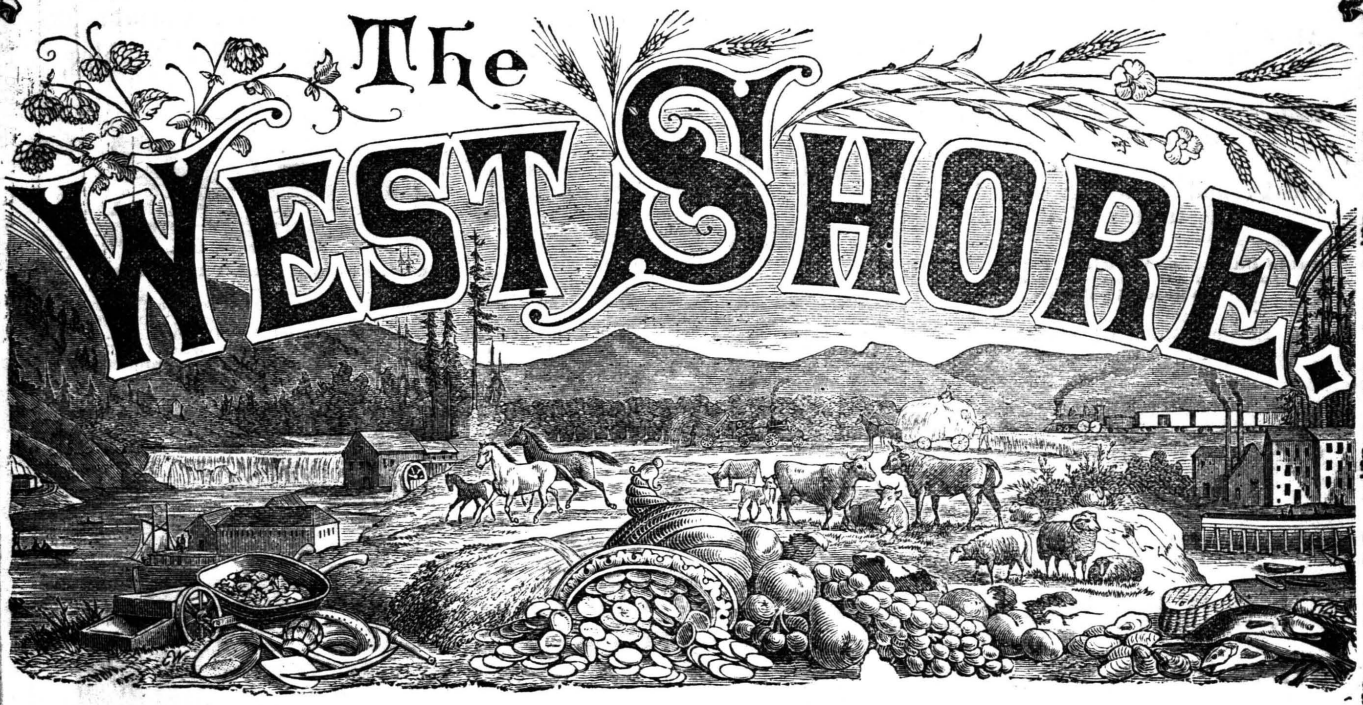
The WEST SHORE.



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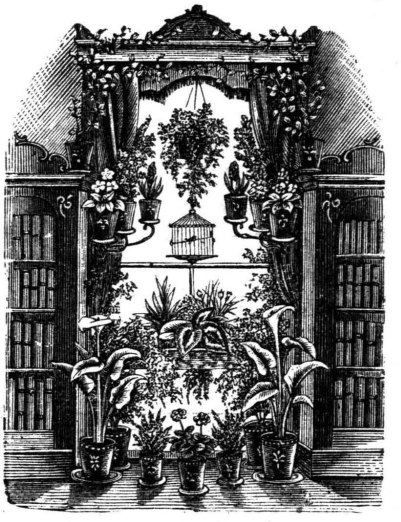

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THE WEST SHORE.

VOL. 7—No. 3. { L. Samuel, Publisher, 5 Washington St, Portland, Oregon, March, 1881. Per Annum, $2.00. } Single copies 25 cts.

THE LIVERPOOL OF THE PACIFIC.

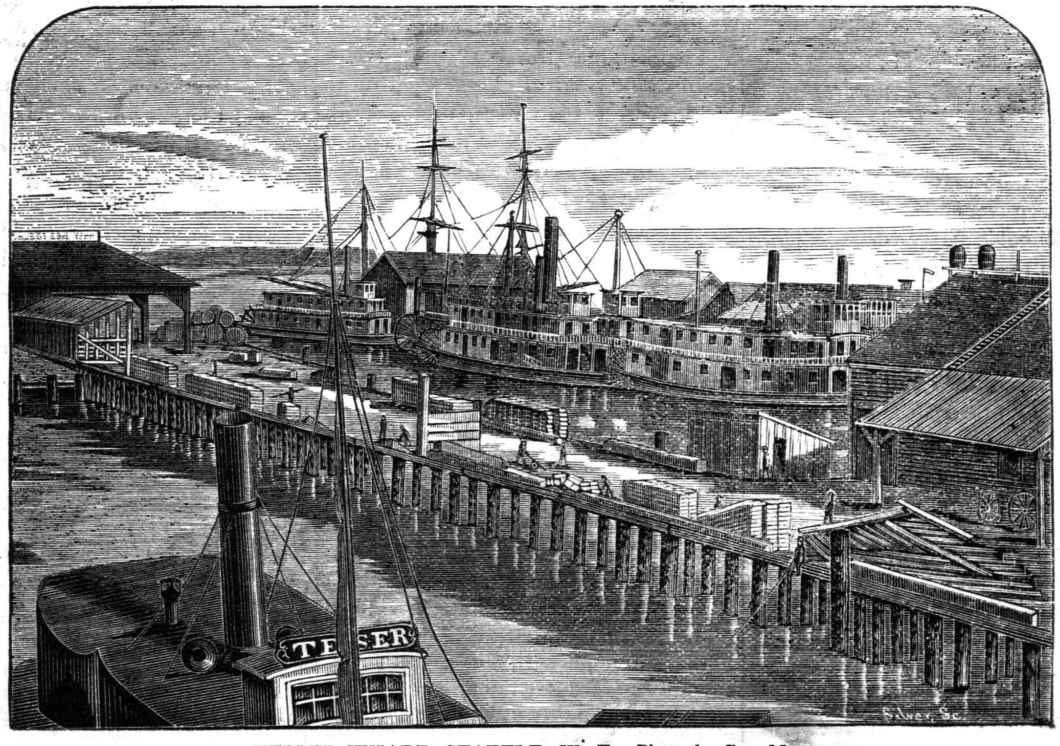
Seattle, bears the same relation to the commerce of the Pacific as Liverpool sustains to the Atlantic ocean. Seattle is the great coal port of the Pacific and ships more of the "black bonanza" to San Francisco in one week than all the other coal ports in Oregon, Washington and British Columbia do in a month. During the past month the exports has been unusually heavy, the bark Lizzie Williams, being the smallest of eight vessels dispatched thence within ten days and her cargo was 1,140 tons, while the largest was that of the Alaska, 2,178 tons.

Seattle coal has become a deservedly great favorite for household use in the San Francisco market, for while it is but a lignite formation it is the highest lignite found on the coast. It contains no more heating power or combustive property than that found at Coos Bay, but it is less brittle and makes less dust, while it is by far less impregnated with sulphur. The chief mine is at Newcastle, about 18 miles southeast of Seattle, which has been worked with the greatest success for the past seven years. The other mines are the Talbot and the Renton, situated on Cedar river, six miles southwest of Seattle. This magnificent property is now owned by the Oregon Improvement Co., of which T. F. Oakes is president. They are preparing a line of steam colliers for the transportation of coal to San Francisco, one of which—the Willamette—is already on her way around Cape Horn to engage in the trade.

Our view of the stern-wheel fleet alongside the Yesler wharf shows two old Columbia river favorites—the Otter and Annie Stewart—the others being built on the Sound. The Dispatch, Messenger, Fanny Lake, Zephyr and Nellie, are all serviceable boats, though inferior in size to our magnificent fleet built by Gates & Holland for the Oregon Steam Navigation Co. Yet they have done a great deal of good in bringing the trade of Snohomish, Skagit and other rivers to Seattle and amassed neat little dividends for their owners. The two finest boats on Puget Sound, the George E. Starr and North Pacific, were not in port when our illustration was taken and as they do not arrive there till after dark, our artist was obliged to get along without them.

The coal wharf at the south end of the city was built by the Seattle and Walla Walla Railroad Co., under superintendence of James M. Colman, the best saw-mill man on this coast, if there is one better than another. He saw that the greatest loss to coal miners is in breakage and hence resolved upon a new departure. Formerly the coal was brought in on cars and dumped into a monster receptacle called a bunker, to await the arrival of a ship then it was again dumped into the ship's hold, thus occasioning double breakage in handling, Mr. Colman designed to handle the coal but once, and hence he equipped the road with a vast amount of rolling stock so as to shoot 1,200 tons of coal per day down a ship's hatches. His design has been a complete success.

Seattle is the most cosmopolitan of all northern cities, for she supplies labor and stores to all the milling ports. Sailors who may be discharged elsewhere go to Seattle to obtain work on other vessels, hence it is no wonder that on her streets you may jostle against the mercurial Frenchman, the rollicking Patlander, the plodding German and the tawny Lascar. Seattle has a splendid harbor filled with delicious fish, although she has never been able to make a success of oyster culture. It is no longer a question of time as to her prosperity. Her splendid cedar forest enables her to turn out the finest panel doors in America, and her ash and maple furniture is the best made on the coast for the money. While Portland has no cause to fear the business rivalry of Seattle, we are frank to say that no man who has so far bought property in the "Liverpool of the Pacific" will lose his money.



YESLER WHARF, SEATTLE, W. T.—Photo by Geo. Moore.

SPELLING REFORM.

W. D. LYMAN.

This article is called forth primarilly by the writer's conviction of the need of the above reform, and secondarilly by the unexpected attitude toward it of the leading newspaper of the state. When a newspaper asserts that a movement supported by nearly al the great scholars of England and America is one of the passing shams of the day, it becomes a matter of interest to ascertain the grounds of the assertion. To such readers, therefore, as prefer the testimony of Max Muller, Whitney, and others, to the random assertions of the eminent journal alluded to, we address this article. We may add that it employs the spelling sanctioned by the Spelling Reform Association hereafter given:

Thirty-thre per cent. of the English people can neither read nor write.

The illiteracy of the U. S., though not nearly so great, is sufficiently appalling. In Prussia, the illiteracy is nothing. This extraordinary differenc between peoples so closely allied in origin, in religion, and industrial pursuits is largely due to our system or rather lack of system of spelling. We state this on the authority of Max Muller, the greatest of filologists. The German language is essentially fonetic. Hence, when the Prussian boy has lerned a thing, he keeps it.

His progres is by a series of natural logical steps. As to the kind of steps that the English boy takes, we will call for the testimony of Prof. Morell, one of the government inspectors of English schools.

He states that eighty per cent. of the children in those schools leave without having accomplisht enough of the language to do them any good. Dr. Morell says that the spelling is responsible for this practical failure of the government schools of England. "The main difficulty of reading English," he remarks, "arises from its intrinsic irregularity. A confusion sets in in the mind of the child respecting the powers of the letters, which is very slowly cleared up by chance, habit, or experienc, and his capacity to know words is gained by an immense series of tentativ efforts. It appears that out of 1,972 failures in the civil service examinations, 1,866 failed in spelling."

To professional scholars who have almost forgotten the difficulties of their childhood's study, the above may seem an exaggeration. But any one who has any acquaintanc with the poor children of great cities and of sparsely settled country regions, where school is "kept" only three months—and very wasteful months at that—in the year, knows that our faith-destroying and reason-distracting method of spelling presents an almost unsurmountable obstacle to progres. The innocent child is launcht on a tossing sea of exceptions, compassles and rudderles. He soon finds that almost every word is an exception to all the other words. Every new word contradicts everything he has previously lerned.

His instinctiv efforts at logical systematization and generalization, efforts which ar the foundation of al knowledge, ar shattered at the very beginning by those unaccountable exceptions in spelling. Not only does the child lern the language very slowly and painfully, but his nativ logic is half paralized.

He lerns to spell fly, f-l-y; and then is marked incorrect for spelling high, h-y. One contradiction. Then having lerned the proper spelling of high, he spells tie, t-i-g-h. Incorrect. Another contradiction.

It is a crime against human nature to spell might m-i-g-h-t, and then laugh at a boy for spelling kite, k-i-g-h-t.

The brighter the boy, the greater the mystification. In brief, a person to be a correct speller of the English language must be personally familiar with al the eccentricities of the five or six thousand words in common use. This requires from eight or ten years to a life-time; and there ar comparativly few who accomplish it even then.

It would seem that a mere mention of the monstrosities and absurdities of our spelling should convince any reasonable person of the need of change. But there ar always some people who, even amid the iconoclasm of this age and nation, instinctivly shrink from change. Like the Dutchman who, having been accustomed to go to mill on horseback, with wheat in one end of a sack and a stone in the other to balance it, viewed with horror the heresy of his son in filling both ends with wheat, these conservativs regard any attempt at discarding the ded weight left by the ignorance of past ages, as fraught with unknown terrors.

Having by years of drudgery acquired some knowledge of that lingual hash called English spelling, they strenuously resist any attempt to mitigate the orthografical throes of futur generations. Permit me to suggest the possibility of improvement in a language which uses the same characters for the following sounds: through, though, rough, bough, ought; or which, on the other hand, employs for the same sounds the following characters: aisle, sleight, eye, die, choir, guide, buy, try, ay, and I; or once more; any, said, says, dead, heifer, leopard, friend, guess, bury, end; ten words in which the same sound is expressed in ten ways. It has been demonstrated that *scissors* may be spelled by English analogies in 596,580 ways.

Our spelling ranges from the mild idiocy of o-n-e, *wun*, to the hopeless insanity of e-i-g-h-t, *ate*. Consider a moment the monstrous absurdity of so spelling *youth* that its two sounds are expressed by five letters; or *thought*, of which the three sounds are expressed by seven letters. There are hundreds of words in which half the characters (the silent letters) ar just so much ded weight.

Such is the character of our spelling. Now, first, is improvement possible? Some say that spelling is entirely a matter of convention anyway, mainly arbitrary, and hence we can never expect a fonic alfabet. We ar about as near perfection now as we can hope to be, and there is no use in trying to improve. All that nonsens is sufficiently disproved by the fact that numerous languages, both ancient and modern, hav had fonic spelling. German has it now. Spanish and Portuguese ar mainly fonic. French is as bad as English. Improvement, then, is possible in the natur of the language. The next question is, how must the improvement be made?

We answer, by a *fonic alfabet*. What, then, is a fonic alfabet? It is one in which every sound has its own character and every character its own sound. That is the natural way of growth of alfabets. Of the two forms of language, written and spoken, the spoken necessarilly comes first. Then a time comes in the history of the language, when it occurs to some genius that the fundamental sounds can be represented by written characters. That genius forthwith analyzes the fonetic

mas of the language and ascertains the fundamental sounds. Then he devises a written symbol for each of those sounds. Thus he has a perfectly logical and natural fonic alfabet. As a matter of fact most alfabets hav been formed in essentially that way. The English was an exception. By considering for a moment the history of our language, we shall see the reason of its imperfection and viciousness. When the Latin missionaries went to England during the times of the erly Saxon kings, of the 8th and 9th centuries, they employed the Latin letters for the yet unwritten Saxon sounds.

Some of these Latin letters made a very imperfect fit to begin with. Some did not cover and some overlapped the Saxon sounds to which they wer applied. Henc the English alfabet was a lop-sided affair to begin with. Nevertheles it hobbled along for some centuries, constantly needing a new alfabet and constantly departing farthur from it. Then came the Norman conquest in 1066, and it became confusion wors confounded.

The burdened stomach of the language, struggling with Saxon ignorance, was called upon to assimilate a mas of verbal cookery from France. Many Latin and Greek words wer added; the English became a fortuitous concurrence of Saxon, French, Latin, and Greek. It was spelled by the laws of permutation and accident.

Many of the Saxon gutterals they tried to represent by the letters gh, but the refined French tongue dropped the gutteral, and those letters became silent and hav remained so ever since. Furthurmore, many words really of Saxon origin, wer supposed by the imperfect scholarship of the time to be from the Latin, and wer spelled so as to indicate that supposed fact even in violation of the sound. Such words as *island*, from Saxon *iland*, but thought to be from the Latin *insula* and therefore having the unnecessary s; *rhyme*, really from Saxon *riman* not from the Greek, illustrate these false derivations and consequent false spellings. There ar multitudes of similar cases. Then, after al those blunders and contradictions, the spelling has been changing at random and by accident ever since. Thousands of changes hav occurred since the time of Shakspere.

In brief, our language has never had any system of spelling. It has been simply one grand hodge-podge of orthografical accidents. If now any editor of a daily newspaper or of anything els is disposed to advocate the excellenc of such a libel on spelling, he is welcome to the heroic effort.

What, then, is to be done? Our present system must be obliterated and a fonic system introduct. Our language has forty fundamental sounds. It should hav forty letters; fifteen vowels, fifteen sub-vowels, and ten aspirates. Two of our present alfabet, C and X, would be dropped. Al silent letters would be dropped. We would hav no more double letters, as th or ph, to represent simple sounds.

The sound of k, for instance, would be always represented by the letter k, not by ch or que or ck or c or some other absurd and accidental combination.

We may say without dogmatism that there is no use in reasoning with any one who would deny that such an ideal alfabet would be infinitly preferable to the present. But the next question, of vast importance, too, is this: is such a change as the adoption of that alfabet would involve, practicable? Would it not be better to submit to the acknowledged evils of our present method than to throw the whole literary world into confusion by changing?

Would the future saving counterbalance the present waste? Here lies the practical bearing of the question. We answer, the adoption of a new system must be gradual.

The leaders of this movement realize this fact and their caution must reassure all frightened conservativs. The Spelling Reform Association has advanced, as an entering wedge, the following five rules, (a) omit *a* from the digraf *ea* when pronounct like *e* short, as in *head*: (b) omit silent *e* after a short vowel, as in *have*: (c) write f instead of *ph*: (d) when a word ends with a double letter, omit the last; (e) change final-*ed* to t when it has the sound of t, as in wished.

The American Philological Association has made essentially similar rules and has publisht the following words as illustrating their rules, viz.: ar, hav, liv, gard, catalog, tho, thru, giv, infinit, definit, and wisht.

That Association is under the control of such men as Whitney, March, Marsh, Child, and others of world-wide fame as scholars, and the public may depend on their acting with prudenc. It wil, therefore, be seen that these changes ar to move so slowly that all can keep up.

In conclusion, let us set before us the main objections urged by opponents of Spelling Reform. They may be reduct to thre: 1st, People who hav alredy acquired the old method will find it hard to change. We hav alredy answered this in part by showing that the changes wil be gradual; and the acquisition of the new method we may ad, wil be very easy. I hav demonstrated in my school-room that any one of ordinary brains can completely master a fonic system in a week of honest toil.

2nd, Many of our words preserv their etymological history in their spelling; wer that changed, their history would be lost. We answer this objection by saying that of only a very few words is this true; that the *people*, for whom the language should exist, would never trace etymological history anyway; and that *scholars* must hav a *great deal more* than the spelling in order to study etymology. It is the height of absurdity to drag the corpses of ded letters around with living ones, in order that every body may see when they died. If a scholar wants to be familiar with the demise of ancient words and letters, let him study the old books and manuscripts.

The third objection is one of real magnitude, to wit; the old libraries, worth millions, will become unintelligible to those who ar familiar with the new system only. Notwithstanding its weight this objection is something like saying that it would not pay to cure a cripple because then his crutches would be waste property.

It is to be observed, however, that a fonic system would differ from the present but little more than *it* differs from the spelling of Chaucer and Wycliffe, and most any one can, by a little pains, read those authors. Furthurmore, books wil be only two-thirds as large and expensive when printed by the new method as now.

We may reduce the advantages of the proposed change to five: 1st, A child or foreigner could lern the language in a *fraction of the time now required*. 2nd, Our fluctuating pronunciation would be fixed by having given symbols always correspond to given sounds. 3rd, Any given amount of matter could be printed on two-thirds of the present space. 4th, *The mastery and constant employment of a sensible system of spelling would giv to children at the outset of study a habit of logical thought which would be of incalculable value to their subsequent mental growth.* 5th. The years now squandered in acquiring a sensles and arbitrary mas of verbal forms would then be devoted to useful study. A child would lern a fonic system in a few months, and from that time the question of spelling would never trouble him. So soon as he should hear a word he would know from the sound what letters should compose it. We leave any unprejudiced and thoughtful reader to decide between the compara-

tiv weight of the advantages and disadvantages.

We conclude by saying, that notwithstanding the opposition of conservatism, and the objections of ignoranc, this movement has every assuranc of success. Our great scholars ar at work. In this telegrafic age when great ideas flash simultaneously thru the great nerve centers of the world, the masses ar within easy reach of their leaders.

The reform must be united, filosofical, final.

MT. TACOMA.

BELLE W. COOKE.

Morning dawns, and lo! Tacoma
Stands against the eastern sky,
Rising up from flood and mountain
With its snow crest lifted high,

With the glory of the sunrise,
Pink as rose-leaf's brightest blush;
Blue and cool the marbled shadows
Lie beyond the rosy flush.

Then, anon, the rose is folded
Back from off the fields of snow,
And a lily-gleam, like satin,
Spreads o'er all a softened glow.

Icy points and glaciers glisten,
Light the snowy fields like stars,
While, across the bay, low-lying,
Forest shadows stretch their bars.

Rounded tree-tops, intervening,
'Twixt the pointed fir-tree spires,
Stand against the lower foot-hills,
Tipp'd with yellow sun-lit fires.

Far across the glassy water
Glides the sylph-like, frail canoe,
While, o'er distant coves and inlets,
Lies a film of faintest blue;

Rocky crags, in broken masses,
Gather round the mountain's base,
And, in quiet splendor, dreaming,
Smiles the kingly upturned face.

A BABY CARRIAGE IN THE HALL.

A baby carriage in the hall.

The handsomest piece of furniture that any house can boast, always making an honorable exception in favor of the cradle.

The baby carriage means a home.

Without it, only a place to stay in.

It means a "dear dimpled darling" —that makes sunshine all the time— when it has not got the colic.

It means a happy mother, whose life is filled with all tender care, all sweet responsibilities, all wonderful hopes for the future.

It means a father who holds up his head among men with the grandest dignity that any man may know.

To mother it is "baby."

To father it is "my boy."

The baby carriage in the hall means all the wealth of rosy hours as mother sings lullaby song—perhaps

"Hush, my dear, lie still in slumber,
Holy angels guard thy bed."

When all the time she is the angel that God appointed to guard it, as none of all high heaven's host could do.

It means a world of plans and projects which all center in that one little life.

It means a father who studies his bank balance with wonderful diligence for "my son" must have a good education, a good start in life, you know. And he goes home and catches up the laughing toddler, and reddens the dimples with his whiskers, and then putting sturdy twelve-month-old on his feet, sets him at his a, b, c of walking, addressing him with comical dignity, "Well, governor, where shall we go now?"

And although he only calls him governor, the mother's heart says—and the father's won't deny it were she to put it in words—that more likely it will be president, in that dim, beautiful and certainly very grand future.

Her choice, however, would be that he should be a good man and a happy one.

Between them both, they parcel out for his manhood's years all that makes life worth the living.

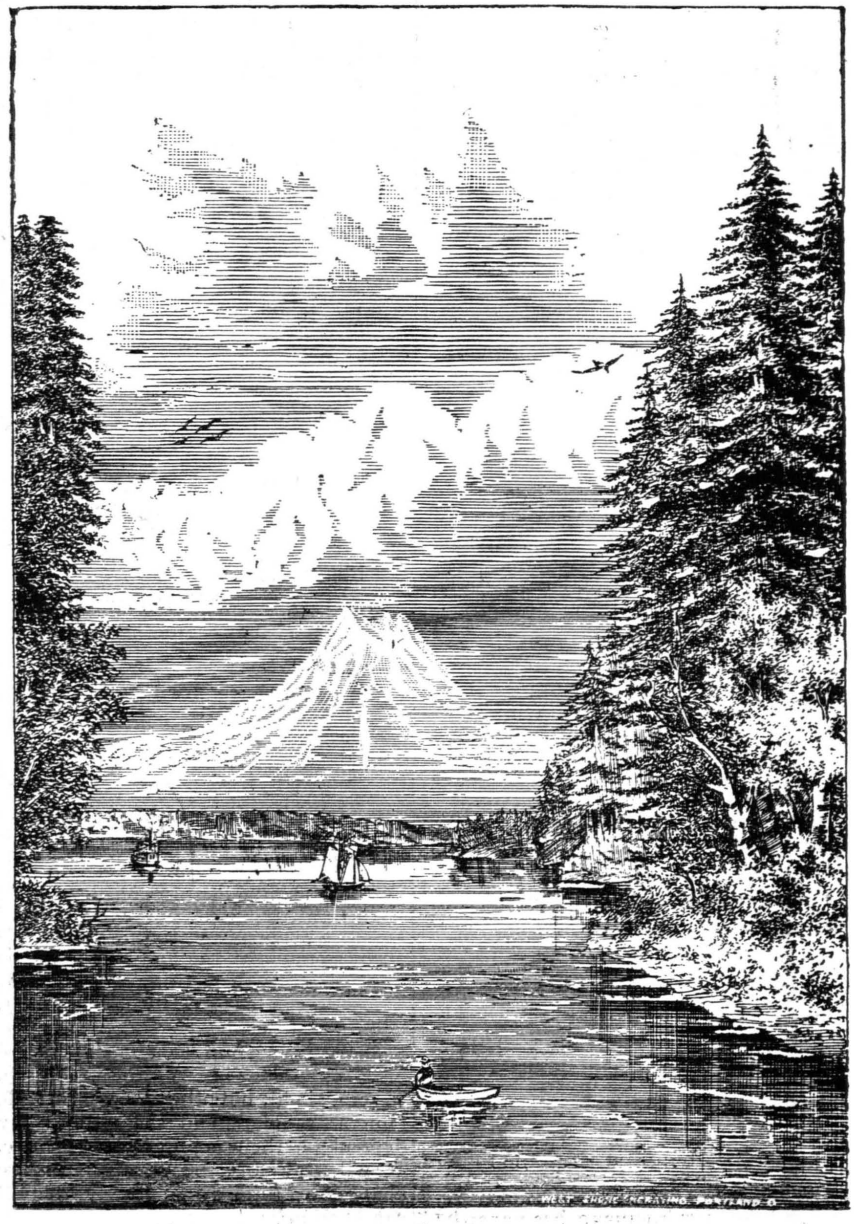
The baby carriage in the hall means a good deal, does it not?

It means everything to the father and mother.

It means more than can be told.

If you have such a piece of furniture in use, you know all about it.

If you haven't, it's a waste of raw material to bother with you.



MOUNT TACOMA, FROM BALCH'S PASSAGE, W. T.

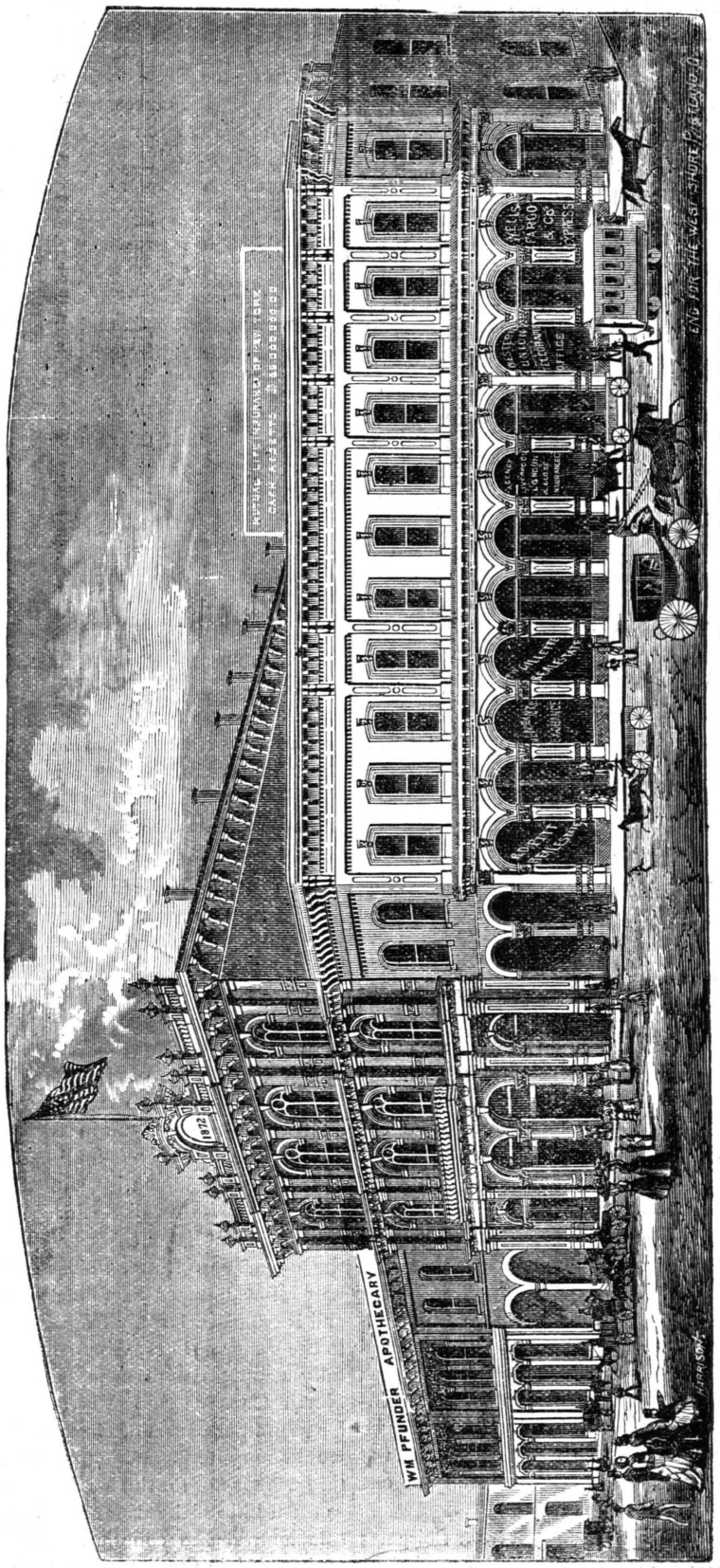
SHIPYARDS ON THE COLUMBIA.

Hitherto the carrying trade of the Columbia and Willamette rivers, so far as sail vessels are concerned, has been entirely controlled by bottoms built at Coos Bay. Those shrewd and energetic Yankees, the brothers Asa and Robert Simpson, did more in two years to noise abroad the good fame and name of Oregon than any other hundred men in the state. Their ship, the beautiful and ill-fated *Western Shore*, was a mechanical triumph for any state to be justly proud of, and it is doubtful if a better paying piece of ship property was ever built.

And, without unkind feelings toward these worthy gentlemen, let us here take occasion to say that we believe the time has come when Portland ought to assert its own supremacy by sustaining a home-built fleet of sailing vessels, built and rigged upon the Columbia river. The timber for construction of hulls is just as good here as at Coos Bay and, with equally good work in the carpenter's and blacksmith's departments, should turn out just as good vessels.

Messrs. Stephens & Richards, of St. Helens, twenty-two miles below this city, have recently commenced what they should be encouraged in by our capitalists—the building of schooners. They are about to launch their new vessel—the *General Garfield*—of 300 tons burthen, and we only regret that she does not measure 329. She is pronounced by Capt. Nat. Ingersoll, and several other competent judges, to be an excellent vessel in every respect. They employ a large number of men, and have materially aided the prosperity of St. Helens since locating there. They are willing to build a ship of 1000 tons if Portland merchants will only furnish the needed capital. She will cost $50,000, and will employ 55 men at from $75 to $80 per month. One third of her cost and outfit could be cleared at the very first outward charter for the United Kingdom. Our own belief is that ships can be built at St. Helens cheaper than at Coos Bay.

The only obstacle that we know of in the way is the want of capital. Just so long as men can get 10 per cent. per annum on city property in Portland and East Portland, just so long will they turn a blind eye to shipyards, and allow Liverpool and London capitalists to absorb the carrying trade of Oregon's vast grain garden. The time has come now when our capitalists must take the bull by the horns and endeavor to check this tide of financial output with no reflux. Oregon must furnish the Old World with grain, and why should she not as well make the profit on carrying it to market?



NEW MARKET THEATER BLOCK, FIRST ST., BET. A AND ASH, PORTLAND, OREGON.—Photo by I. G. Davidson.

REGAINING A LOST PRIZE.

Up to 1861–62, Portland was a comparatively quiet town, with a good run of steady business, but nothing to indicate the presence of a future great commercial center. The discovery of the gold mines on Salmon river and at Florence, at the period above referred to, was the electric torch by which she leaped into her present proud station as the wealthiest of American cities in proportion to her actual population.

The trade of the Boise basin was worth a great deal to our city as late as 1869, when the completion of the Central Pacific railroad took it away from us and kept it in the hands of San Francisco. The point from whence it is shipped is Winnemucca, a distance of 275 miles from Boise, while Kelton, at which point the eastern freight is unloaded, is 250 miles from Boise. The average cost of this wagon teaming is four cents per pound or $80 per short ton.

The manner in which the Oregon Railway & Navigation Co. are pushing forward their line through the Blue mountains, is ground for the belief that they will have their track laid as far east as LaGrande by the 1st of September, and to Union by the 15th of October, with all due allowances for any repetition of the mishaps which attended their operations of last year. The 1st day of June, 1882, will see the iron horse at the head of the Powder river valley, in the heart of what is believed to be the richest mineral region north of Virginia City.

Railroads are great auxiliaries to mining for the precious metals. The argentiferous galena mines in and about Eureka, Nevada, could not be worked with success to-day but for the railroad which gives their supplies of Evanston coal from the Rocky mountains. And, so it will be with the splendid beds of carbonates in Baker county. Scores of ledges that are lying idle to-day will be successfully worked whenever the railroad reaches Baker City, and cheapens the cost of mining supplies and lessens the cost of transportation upon machinery. Nearly all the machinery can be made here, which will be the means of greatly developing the capacity of our local foundries.

Baker City lies distant from Boise not over 140 miles, with a better road than either of those leading to Kelton and Winnemucca. Freight by wagon from Baker to Boise can be hauled for two cents or less, according to the condition of the road. Hence, we predict that whenever the road reaches Baker, that portion of the Boise trade which now goes to San Francisco, will come to Portland. And our city will regain what she lost twelve years ago, though the shipments may not be quite so extensive as in former years.

Portland has grown well, though slowly. Values have steadily increased during the past four years, not through any speculative mania or hot-house development, but through the gradual expansion of legitimate traffic and the natural growth of our tributary country. Our business buildings compare favorably with those of San Francisco, and we may point to them with pride; for our city has not grown to her present proportions through any depreciation of values in the interior, as has been the case with the Golden City. The men who laid Portland's foundation, "builded wiser than they knew."

PLANTING OF NUT TREES.

The importance and value of nut-bearing trees has been too long overlooked by the people of Oregon and the adjacent territory. In California the Madeira walnut, or as it is more generally called, the English walnut, has been successfully cultivated for the past eighteen years and yielded a handsome profit. A gentleman living near San Leandro, in that state, informed the writer that the revenue of two hundred and eighty-one trees in his orchard had averaged $1,692 for a period of seven years prior to 1880. But the quantity of nuts grown in America is but "a drop in the bucket," compared to the immense quantity annually imported from Italy and Spain.

The peanut is extensively grown in the counties of Butte, Colusa and Tehama, in the upper Sacramento valley, and is exported largely from California to the eastern states, where it successfully competes with peanuts grown in North Carolina and Virginia. The long summer season of Eastern Oregon would be quite favorable to peanut culture were it not for the late frosts which so often kill off the fruit crops in Umatilla and Wasco counties. California ranks third in the list of peanut growing states, producing 178,000 bushels in 1880 against 120,000 grown in North Carolina. Virginia produced over a million bushels and Tennessee about half that amount, last year.

Next to the peanut, the pecan tree produces the largest and most valuable nut of commerce. This tree grows best in Texas and Arkansas, though Mississippi and Missouri contribute a fair quota to the market. It has been grown successfully in California, though to such a small extent as to be considered merely experimental. The timber is valuable for ax-handles and wagon timber, though inferior to the hickory grown near the Atlantic. Yet it would grow and thrive in the Sacramento valley, while Oregon could produce the eastern hickory at all points west of the Cascades. In thirty years from now a forest of hickory trees will be a handsome legacy for any Oregon farmer to leave to his children; and a man might as well spend his time in planting them as in playing billiards or cards at some village grocery. The nuts produced by the trees will more than pay interest upon the cost of planting them, long before they are fit to be cut down for manufacturing purposes.

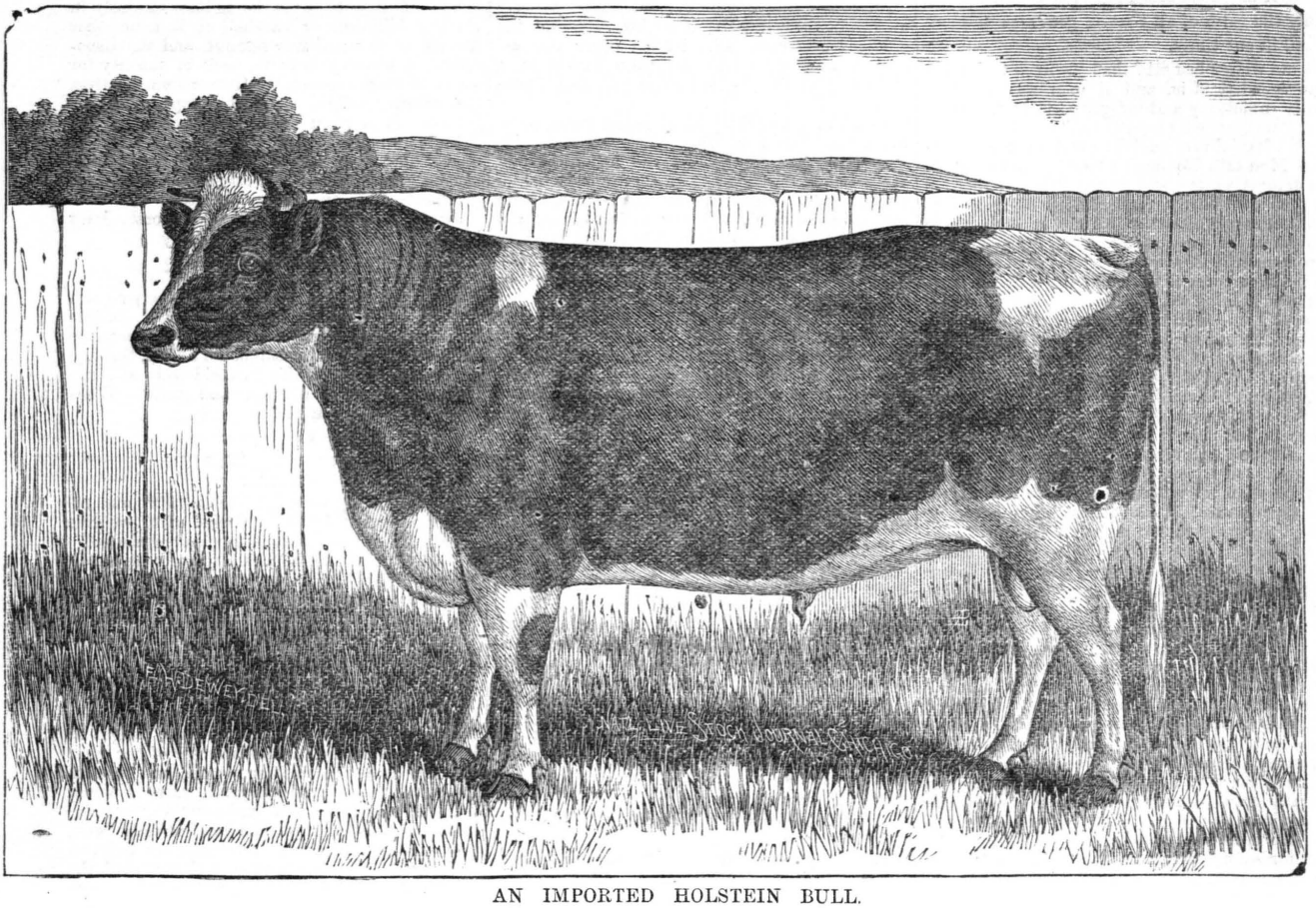
The black walnut was first planted in Contra Costa county, California, in 1844, by some naval officers who had gone ashore for a few days, "trout fishing." They are still growing in front of the residence of Judge Elam Brown, near Lafayette, and average forty-five feet in hight. Those now growing at the confluence of Georgiana slough with the Sacramento river, were planted by a man by the name of Sharp, in 1848, but are not so thick in the trunk as those at Judge Brown's, though they are quite as tall. From these two groves, hundreds of trees have been set out elsewhere, and before twenty years more have passed away, California grown black walnut will form a large portion of cabinet maker's stock.

The man who plants shade trees can have nothing selfish in his nature. He may not live to repose in their cool and welcome shadows, and yet they are a legacy of real value to his children. The amount of hard woods imported from the east is really a crying disgrace to us as an industrious people and something should be done to check the flow of bullion in this direction.

HOLSTEIN CATTLE.

A breed of cattle which was introduced on this coast some years ago, but which seem to have never secured the recognition which they deserve, is the breed known as Holstein or Dutch. We are not aware of the quality of the animals brought to this State, nor why they were not more widely spread. In fact our inquiries in the paper, and out of it, have brought to light but one firm of Holstein breeders, and they are Messrs. Stewart, of North Yamhill, Oregon. They have a small herd of choice animals and are breeding carefully. If there are others who are breeding the Holsteins pure we should like to know who they are and what they have done with the breed. We take an interest in the cattle because we know that when they are of true blood they are very satisfactory dairy animals. We do not say that they are superior to the milking strains of Short Horns in producing capacity, nor to the Jerseys in richness of milk; but placing the cattle on their own basis, we can say that they have a good claim to the consideration of the dairyman, both because of their history and the records of their present accomplishments in the Eastern dairy States. They have been bred for centuries in Holland especially with a view to the production of milk, and their present characteristics are therefore well established. We shall allude to this point of the cattle more fully at some future time when we shall present a portrait of the Holstein cow.

The introduction of the modern Holstein was begun in this century by Mr. Winthrop W. Chenery, of Massachusetts, in 1857, and now is carried on by a score or more of breeders in different parts of the country. One of the leading importers is Mr. George E. Brown, of Elgin, Illinois, the owner of the animal shown upon this page. The bull is a representative one and with his brilliant contrast of black and white colors, is a very handsome animal. The Holstein bull is now being used to a considerable extent in crossing upon the native dairy cows at the East, and his prepotency in transmitting the desirable characteristics of his breed is attested by the progeny which we have seen.



AN IMPORTED HOLSTEIN BULL.

THE ROSARIO MINES, MEXICO.

The mines of the Rosario mining company are located in the Rosario mountain, a spur of the Sierra Madre, a distance of 100 miles from the port of Ajiavampo, on the gulf of California, to which there is a good road; about 90 miles from the city of Alamos where there is a mint, and about 30 miles from the city of El Fuerte. They are surrounded by an estate of 100,000 acres of land belonging to the company. At the base of the mountain about two miles from the mines, a number of streams unite and form an abundant supply of water, Here the mill will be erected and the reduction works established, the ore from the mines being brought on the wire rope tramway before referred to.

The Rosario mines were discovered by Don Bruno Esquer in 1852. They consist of a group of nine mines, under the following names. Dulces Nombres, San Jose, Bueno Fe, Carmen, San Genovera, Providencia, San Rafael, Sonorense and Discubridora. They are on one vein and together embrace a distance of 9,600 ft. The vein is 4,000 ft. above sea level, and the adjoining valley 2,000 ft.

The work done on the various mines by the Mexican owners has all been of a rude and primitive character. The vein has been attacked only where an unusually rich place presented itself in the outcrop, and worked only so far as the great richness of the ore paid the owners well for the reduction by the rude processes employed for the purpose. Yet the records of the mints show a yield of over a million dollars. The vein is very wide, a cut of 42 ft. in one place failing to show the walls. Developments have chiefly been limited to the Dulces Nombres and Discubridora, on the east side of the mountain, and the San Rafael on the west side.

There is already at the mine a No. 4 Burleigh air compressor to run seven stoping drills, a saw mill to cut timber from the lumber on the property, a brick machine for making brick for the furnaces and houses, and also a mill for grinding sugar cane upon the ranch.

The Descanso ranch, belonging to the company, and on which the mines are situated, comprises 100,000 acres of land well watered and wooded, and perfectly adapted for agriculture, producing among other things Cuban sugar cane, maize, potatoes, wheat, bananas, plantains, oranges, etc.

Within a short distance of the Rosario and in the same range are many other well-known and profitable mines; among others the Trinidad, Jesus Maria and Quintera, in the State of Sonora, the Uriqui Batopilas, Morelas, Jocuistita and Guadalupe y Calvo, in Chihuahua, and the Palmarajo, in Sinaloa. The Rosario company is a New York organization, General Geo. B. McClellan being President, the other Trustees being A. Hegewisch, Hon Hugh J. Jewett, Wm. H. Hays, Herman R. Baltzer, Hon. David A. Wells, Herman Drisler and W. E. Kimball. The general manager, a gentleman of wide experience and acknowledged ability, who is now at the mines, is Donald McNeil Palmer, Esq. The prime mover in the organization was W. W. McFarland, Esq., of New York, to whom is due the credit of having undertaken the project.

SOREL'S CEMENT.—Mix commercial zinc white with one-half its bulk of fine sand, adding a solution of chloride of zinc of 1.26 specific gravity, and rub the whole thoroughly together in a mortar. The mixture must be applied at once, as it hardens very quickly.

TRAINING THE CHILD.

In the age of chivalry the training of youth was an essential of the household economy of the higher classes, and gallant knights and fair ladies received into their guardianship, as pages, the sons of their compeers, who were trained carefully, not only to feats of arms essential to the period, but into habits of self-denial, temperance, courtesy, truth and honor; as befitting brave men and Christian soldiers. Maidens also were received in like manner, and taught the best knowledge of the age in which they lived; to be diligent, courteous, skillful as "leeches"—doctors in our day—good housewomen, faithful and chaste. These things were essential to gentle breeding, and were most certainly the germ of all that is generous and enlarged in our times.

Some writer has said that "women make the country what it is, and if men fall short of manly sufficiency and integrity, it is the fault of the mothers who bore them." If it is true, what a fearful responsibility rest on the mothers. Men talk too much about the sacredness of the domestic altar, and do too little to uphold it by their own purity, integrity and co-operation. If the example of either parent is such as to neutralize the wisest teachings of the other, disappointment and sorrow are too sure to follow. In the first years of the child its training must fall mostly upon the mother, who is likely to be more at home than the father, and whose sympathies are apt to be quicker and nearer, and more tenderly adapted to its undeveloped helplessness. While she moves in the maternal sphere, and her children are young, the responsibilities of the mother are paramount to all others. She should be no dogmatist; should cast all the casuistry of the schools to the wind, for her creed is very simple, and must be inscribed upon the infant's palm: Love to God, and love to man. "All things whatsoever ye would that men should do to you, do you even so to them." This is the burden of her morning and evening and noontide teaching. Integrity—savage, unadulterated integrity—she enforces as the law of the inner and outer life. She must never acquire a look of care, a feeling of discontent, a melancholy, or despondency fatal to the comfort and cheeriness of the household; and perpetual coercion, perpetual admonition, perpetual fault-finding, and checking, muddles the poor little brain of a child, and distorts its moral sense. It is to be hoped the flippancy and shallowness of our age will not be entirely bereft of these stately, clear-seeing and morally grand women of the olden time, whose example has done so much to ennoble our sex. Reform must begin at the fireside. The foundation for empire is laid there, and when families are disorderly, treacherous, corrupt and wicked, the nation will be a reflex of what is existing there. In our great crisis of war and disorganization, we see widespread corruption and malignity, commercial fraud and political dishonesty. The people are as the mothers who have reared them; for woman was designed to be the great spiritual, moral center, and men have a right to look to us, even more than to themselves, for the right training of the child. If men were more willing and women more freely admitted to share in all subjects pertaining to legislation, "the world would be the better for it." At present the race is stultified in order to keep one sex within the sphere of action which the other conceives to be appropriate for her, as if she were not the best judge of where she belongs and what she is best able to do. At the earliest dawn of reason—which commences in the little one sooner than most people imagine—it should be taught the self-control and government of its appetites and passions; should be taught his superiority to brute instinct. I know of a mother who always kept Friday as a fast day, not from religious asceticism, but because she wished to act an example of self-denial to her children. She would say in the morning: "Come, my darlings, I shall eat only bread and drink water today; are either of you strong enough to go with me?" Sometimes, indeed, most generally, the little ones joined her. There was no compulsion, no gloom about it; indeed, there was, perhaps, no brighter day than their fast day.

Once the little boys, the eldest not six years, were invited to a party of children, and when the entertainment showed a table covered with dainties, they took only bread. The hostess, greatly surprised, inquired the reason, when they whispered, smilingly: "We and mamma agreed to fast to-day." She suggested that it would do no harm to break the fast on such an occasion, but the brave little fellows adhered to their resolution, and declined every luxury. When they returned home they brought a basket filled with all the pretty dainties the lady had forced upon them.

"I do not think, mamma, we ought to save nice things fast day to eat afterward," said the oldest young hero, and, as the other one assented, they agreed to carry the basket to a child so poor that he had never had such luxuries.

In training the child the slightest variation of the truth should be promptly corrected. He should be taught to feel the meanness and cowardice of falsehood as unworthy the character of a man. This great cardinal virtue, firmly rooted in the child, will become the foundation for all other manly virtues. He should be early taught the sacredness of his word. If he make a promise, however trivial, he should be held to it. He should be taught punctuality also, and be made to see that he has no right to waste his own time, far less that of another. These things belong to the great moral code that no one can violate with impunity. There are lesser virtues which are essential to gentle breeding, and which greatly affect our own taste and comfort as well as that of others. I would train a child to that forecast and considerateness for others that he would not endanger the safety of the passerby in the street by casting the parings of fruit upon the side-walk; or offend his taste by scattering the shells of nuts, and spitting in a railway car. I would train him to keep all expressions of sickness and pain, and physical necessities of every kind, religiously in the background. He should learn that while the aims of life should be high, and the moral sense pure and noble, the sense of the beautiful is just as essential a part of a true life as an honest sense, and that, while we should ourselves aim to present the best aspect of human virtues, we should no less avoid obtruding our crude, tasteless, undeveloped humanities in the eyes of society.—*Mrs. E. J. S., in Rural Press.*

KEEP YOUR TROUBLES SACRED.

A worthy wife of 40 years standing, and whose life was not made up of sunshine and peace, gave the following sensible advice to a married pair of her acquaintance. The advice is so good and so well suited to married people, as well as those who intend entering that state, that we publish it for the benefit of such persons: "Preserve sacredly the privacies of your own house, your marriage state and your heart. Let no father, mother, sister or brother ever presume to come between you two or to share the joys or the sorrows that belong to you two alone. With God's help you build your own quiet world, not allowing your dearest earthly friend to be the confidant of aught that concerns your domestic peace. Let moments of alienation, if they occur, be healed at once. Never, no never, speak of it outside, but to each other confess, and all will come out right. Never let the morrow's sun still find you at variance. Review and renew your vow; it will do you good, and thereby your souls will grow together, cemented in that love which is stronger than death, and you will become truly one."

When is money damp? When it's mist in the morning, and due (dew) in the evening.

WHAT ARE BOYS GOOD FOR?

The urchin who answered: "They are good to make men of," made an admirable reply. But the sort of men we are to have in a few years depends upon the sort of boys we have now. A man is but a grown-up boy. The present crop of boys contains some hopeful specimens, who give promise of useful manhood. But it also shows a large percentage of boys who must be reconstructed before they can possibly develop into a manhood that can fill any honorable or useful positions in society. Boys who shun or shirk useful work or improving study, and spend their time in idle dissipations or vicious activities, can never become useful men. Boys who, being obliged to do something for their support, assiduously seek easy work, are not hopeful prophecies of manhood. They will never amount to much. When we see the tendency of city boys to be industrious only in playing billiards or baseball or in some other useless or demoralizing pursuit, and the disposition of country boys to seek in the city for easier or more respectable (?) employment than the country offers, we feel unhopeful of the future. It is from these two classes that the constantly increasing armies of shyster lawyers, quack doctors, poor preachers, bummer politicians, drunken loafers, petty thieves, tramps, deadbeats, etc., are chiefly recruited.

Boys, if you want to be men of worth, don't be afraid of hard work or hard study.

> "Lives of great men all remind you
> You can make your life sublime."

Read the lives of great men of the past and present, and emulate the virtues and imitate the example of their boyhood. Dr. Benjamin Franklin went from a soap boiler's shop, through a printing office, to fame world-wide and immortal, by dint of industry and study. What boys have done you can do.

TRIBUTE TO WOMEN.

The following beautiful tribute to woman recently delivered by a reformed man, we give place to in our columns, with great pleasure.

"I should like to propose a toast to-night, although a total abstinence man myself—a toast to woman. To be drank, not in liquor of any kind, for we should never pledge a woman in that which may bring her husband reeling home to abuse where he should love and cherish, sends her sons to a drunkard's grave, and her daughters to a life of shame. Oh, no, not in that, but rather in the life giving water, pure as her chastity, clear as her intuitions, bright as her smile, sparkling as the laughter of her eyes, cheering as her consolation, strong and sustaining as her love—in the crystal water I would drink to her that she would remain queen regnant in the empire she has already won, grounded deep as the universe in love; built up and exercised in the homes and hearts of the world; I would drink to her, the full blown flower of creation's morning, of which man was but the bud and blossom, to her who in childhood clasps our little hands and teaches us to lisp the first sweet prayer to the Great All-Father, who comes to us in youth with good council and advice, who in manhood meets our heart yearnings with the faithfulness of conjugal love, and whose hand, when our feet go down in the shadow, gently smooths the rough pillow of death as none other can; to her who is the flower of flowers, the pearl of pearls, God's latest, best and brightest gift to man—woman, peerless, pure, sweet, royal woman."

Cleaning Water Pipes.—A correspondent of the *Forest and Stream* gives a novel method employed to cleanse a two-inch water pipe which had become choked with mud. A string was tied into a hole punched in the tail of a small eel, which was straightway put into the pipe. An occasional jerk reminded the eel that it was incumbent on him to proceed, which he did, arriving at the lower end of the pipe with the string. A bunch of rags was tied to the string, and thus the pipe was cleansed.—*Locomotive.*

UNRECOGNIZED QUALITIES IN CHARCOAL.

Among the numerous and varied properties possessed by charcoal, there is one—one, too, of the most wonderful—which does not seem to be adequately recognized, probably from its being imperfectly known except to physicists. It is that of being able to condense and store away in its pores many times its own bulk of certain gaseous bodies, which it retains, thus compressed in an otherwise unaltered condition, and from which they can be withdrawn, as required, as from a reservoir.

That eminent scientist, M. Saussure, undertook the tast of a systematic examination of this subject, with a result which will prove surprising to the general reader. Operating with blocks of fine boxwood charcoal, freshly burnt, he found that by simply placing such blocks in contact with certain gases they absorbed them in the following proportions:

	Volumes.
Ammonia	90
Hydrochloric acid gas	85
Sulphurous acid	65
Sulphureted hydrogen	55
Nitrous oxide (laughing gas)	40
Carbonic acid	35
Carbonic oxide	9.42
Oxygen	9.25
Nitrogen	6.50
Carbureted hydrogen	5
Hydrogen	1.75

It is this enormous absorptive power that renders of so much value a comparatively slight sprinkling of charcoal over dead animal matter as a preventive of the escape of the odors arising from decomposition. A dead dog having been placed in a box in the warm laboratory of an eminent chemist, and covered with charcoal to the depth of between two and three inches, could not be discovered to have emitted any smell during several months, after which time an examination showed that nothing of the animal remained but the bones and a small portion of the skin. To the large excess of oxygen over the nitrogen in the atmosphere, which, according to the above table, was absorbed by the charcoal, and which thus rendered harmless the noxious vapors given off by the carcass as they were being absorbed, is doubtless owing the fact above stated and the further fact of the charcoal never becoming saturated.

A reader of the *Scientific American*, who has been trying certain experiments on the value of charcoal as a convenient means of storing oxygen, reports favorably as to the results. In a box or case containing one cubic foot of charcoal, may be stored, without mechanical compression, a little over nine cubic ft. of oxygen, representing a mechanical pressure of 126 lbs. on the square inch. From the store thus preserved, the oxygen can be drawn by a small hand pump.

From the fact of the charcoal absorbing oxygen in so much greater proportion than nitrogen, we have here a means of utilizing its discriminative powers of selection in obtaining unlimited supplies of oxygen from the atmosphere, which contains nitrogen five times in excess of its oxygen, or 20%; whereas, by the separating or selective powers of the charcoal, the mixed gases capable of being extracted from it contain over 60% of oxygen. It only suffices to withdraw this now highly oxygenized air into another vessel of charcoal, by the further exposure to which the proportion of oxygen will be increased to a still greater extent. This indicates a most feasible means by which atmospheric air can be decomposed in such a way as to provide a cheap supply of oxygen.

One cannot readily recognize the fact, which is nevertheless true, that the condensing power of charcoal, as applied to ammonia, is equal to what would be obtained by subjecting this gas to a pressure of nearly 1,260 lbs. on the square inch.—*Illustrated Scientific News.*

NUMBER OF PLANT SPECIES.—The total number of plant species existing on the globe, according to recent calculations made by Dr. Muller, of Geneva, is 250,000.

PERAZOTIC ACID.

The discovery of a new compound of oxygen and nitrogen has been announced by MM. Hautefeuille and Chapuis. It contains more oxygen than azotic acid, and has been named by the French chemists perazotic acid. It is well known that on passing an electric current through oxygen a portion of the oxygen is transformed into ozone. If the ozone be mixed with nitrogen, the spectrum indicates the presence of a body characterized by black bands. The bands disappear when the gaseous compound is mixed with water, and the latter is acidified. The application of red heat to the gaseous mixture also causes the black bands to disappear. The experimenters are now endeavoring to isolate the new acid in order to study its properties. M. Berthelot some time since suspected the existence of the body in question during some experiments which he has not published. Its presence was indicated to him, however, merely by phenomena of coloration which appeared and disappeared during the passage of an electric current through a mixture of oxygen and hypoazotic acid. His observations were communicated to Messrs. Hautefeuille and Chapuis, who, by obtaining the spectrum, have placed the existence of the new acid beyond doubt. The discovery is the more surprising, as oxygen and nitrogen, being constituents of the atmosphere, have so long been the objects of what might have been considered exhaustive study.—*Design and Work.*

USES OF CHEMISTRY.—Let us give chemistry its true place. It has led the world's progress for half a century, and it will lead it with still more rapid strides during the next half century. It has preceded the practical man, lantern in hand, along all the untrodden paths of invention and discovery. It has become to every progressive industry what a cane is to the blind man. It does not follow, however, that we can depend upon it alone, nor that we can rely on every analysis handed us. Because the blind man finds a cane helpful, no one with unimpaired vision would be wise in shutting his eyes and walking with the aid of a cane. Still less would the blind man be wise to throw his cane away because it sometimes fails to detect an obstruction in his path. We have a right to distrust an analysis when it points to conclusions which cannot be safely accepted unproven, but the man who looks to the chemist for all the information which an intelligent study of the composition of matter can give him, will know more and act more wisely than the man who depends upon his practical knowledge or his general intelligence. When we are willing to pay for care, skill and experience in laboratory work, and the profession offers a career for ambitious young men who are driven from it by the lack of promising opportunities in this field, the general standing of chemical work will be raised, and there will be a longer list of names which, appended to analyses, will command confidence. Meanwhile, no one who spends money judiciously in learning all that the chemist can tell him will waste it, while the owner or manager of works who feels that he can dispense with the chemist's services, will make a mistake.—*Iron Age.*

AN ALUMINUM BATTERY.—Liebeg's *Annelen* describes a novel and curious voltaic cell, which has recently been devised by Herr Wohler. The chief peculiarity is that both plates are of the same metal—aluminum—and a tolerably strong current is supplied. The cell consists of a glass vessel six inches high, filled with very dilute hydrochloric acid, or caustic soda, and containing an inner porous pot filled with concentrated nitric acid. In each compartment is placed a cylinder of aluminum provided with a projecting lug which passes through the cover of the vessel, and acts as a contact piece for the electrodes or conducting wires. As soon as the aluminum cylinders are plunged into the acids, s current is given off sufficiently powerful to heat a platinum wire red hot.

MINING ALTITUDES.

Scientific men have proved by actual measurement that most of the great silver mines lie 10,000 ft. above the present sea level, and among the richest are some which lie 2,000 ft. higher still. Very rich mines have been found as high as 16,000 ft. It is a notable fact that as a rule the richest silver mines lie over 10,000 ft. above the sea level. The mines on Ruby Hill are between 8,000 and 9,000 ft. above the level of the sea.—*Ruby Hill Mining News.*

According to the above item Nevada is a notable exception to that 10,000 ft. rule, her richest mines, including those of Ruby Hill or Eureka mining district, lying considerably below that level. The *News* says that the general surface of the Comstock lode, which must be classed as among the most famous and richest of the silver mines of the world, is about 6,000 ft. above the level of the sea. The Sutro tunnel, which intersects the Comstock 1,600 ft. below the surface, is 4,400 ft. above the level of the sea. The rich bonanzas of the Crown Point and the Consolidated Virginia sections, which have yielded $200,000,000, were nearly or quite down to the Sutro tunnel level. In point of fact, the deepest workings of the Comstock are less than 3,000 ft. above the sea level. There are no large bonanzas of ore found at that depth as yet, but there is no reason to believe that there will not be, extending perhaps far below the sea level.

SCIENTIFIC PROGRESS.—The recognized and frequently applauded tendency of modern investigation in natural sciences, has been toward an accumulation of facts, rather than toward any effort to generalize from them. As a reaction against the mania of speculation prevailing in the earlier stages of the development of modern chemistry, geology, etc., the direction taken has produced highly salutary results. The foundations thus laid have been broad and substantial, and the haze of doubt and uncertainty has been swept away in many departments of science, while new fields of research are constantly opening to a large number of intelligent and active workers. No one will be inclined to underrate the value of their labors, and yet it is difficult to escape the feeling that, notably in chemistry, this search for new facts is conducted without the proper discrimination. A mass of data is piled up without order or connection. It would be valuable material in the hands of those skilled in grouping and arranging it in such a manner as to secure a basis for further work. In its present shape, however, it is only raw material, and while a great deal of credit properly attaches to original investigation, it should be remembered that it is as great a thing to make a fact useful as to find it out.—*The Iron Age.*

A POWERFUL LIGHT.—The Brush Electrical Manufacturing Company at Cleveland, Ohio, has recently manufactured for use in the British navy an electric light, which has been tested and found to have a 100,000-candle illuminating power—a power 50 times greater than the ordinary electric lamp for street lighting. This is believed to be the largest and most powerful light ever made with human hands. It is designed to be used in night attacks, and to scrutinize the sea for torpedoes. A 40-horse power engine is required to produce the light. The carbons used are two inches and a half thick. The intense heat generated between the carbon points is half a million degrees, one-ninetieth the estimated heat of the sun. It is calculated that with an ordinary reflector a beam of light will be cast so powerful that a person 15 miles away can see to read by it.

MALLEABLE IRON is said by Forguignon to be intermediate between steel and gray pig iron, differing from the latter by the special nature of its amorphous graphite and its greater tenacity, and from steel by its small elongations and large proportion of graphite.

CIGARETTE SMOKING—ITS INCREASE AND DANGER.

The Americans may be said to have become a nation of cigarette smokers. Time was, not a very great number of years ago, when the consumption of "paper cigars" in the United States was confined almost entirely to the foreign-born portion of our population. To-day more natives than foreigners smoke them. The enormous growth of the industry is readily shown by a comparison of figures. For example, in the fiscal year 1870, tax was paid in the United States on 13,881,417 cigarettes, and in the fiscal year 1880 on 408,708,365—an increase in 10 years of 394,826,948 cigarettes. The following table shows the number on which tax was paid during each of the past 11 fiscal years:

Year.	No. Cigarettes
1870	13,881,417
1871	18,930,753
1872	20,691,050
1873	27,088,056
1874	28,718,200
1875	41,297,883
1876	77,420,586
1877	149,069,257
1878	165,189,594
1879	238,276,817
1880	408,708,365
Total	1,189,271,072

The United States now ranks as the heaviest cigarette producer in the world, France coming next. The annual sale of cigarettes in France is estimated at 900,000 lbs., or about 300,000,000 cigarettes—only about one-quarter of the number consumed in this country. There can be but little doubt that the majority of cigarettes are consumed by boys between the ages of 12 and 18 to 20. Men, as a rule, smoke cigars and pipes. That the inordinate use of tobacco at an early age is hurtful is uncontested. Recent scientific investigations go to prove that smoking, especially cigarette smoking, is very detrimental to youths during the transition period from boyhood to manhood. The stunted forms of many men is as much due to excessive use of tobacco at an early age as to anything else. What cigarette smoking and absinthe drinking combined can accomplish may readily be seen by a visit to any large French town.

How to Prevent Wrinkles.—There is no such thing as wiping out wrinkles. In men they are often honorable evidence of hard mental labor, in women they are usually the evidence of coming age, although care and suffering have much to do with them. Sometimes fair foreheads are prematurely wrinkled from a nervous habit of raising the eyebrows, and from a too great and a too constant pressure of the pillow on one or both sides of the head while sleeping. And just here comes a fact worth remembering. If the forehead has escaped wrinkles, crow's feet are prematurely seen about the corners of the eyes. We all see these crow's feet in men and women whose brows are smooth and young looking. They are the result of sleeping on the light and left sides. The pressure upon the temple and cheeks leaves wrinkles at the corners aud underneath the eyes which disappear in a few hours, but finally becomes so fixed that neither hours nor ablutions will abate them. If girl children were compelled to sleep on their backs and continued the habit when they reach womanhood and afterward, they would arrive at middle life without crow's feet gathering in the neighborhood of the eyes, and in most cases their foreheads would be free from even shallow furrows.

Stammering is sometimes organic, caused by hare-lip, cleft palate, lengthened uvula, tumors, or something of the kind. Of course, when this is the case, the cause must be removed. Sometimes it is caused by general weakness, paralysis, rheumatic affection of the muscles of the face, etc., and sometimes it is acquired by habitually imitating a stammerer. Any specific or cure for stammering must be adapted to the special cause which produces the affliction.

SALESWOMEN VS. SALESMEN.

As perhaps you know, dear to the female heart, is the latest style. Even a plain country woman does not wish to be always behind the times; so once in a while, when the crop is good, when the hens lay well, and eggs bring a good price, and turkeys are high, I venture to your grand city for an outing.

I go down to some of the big stores, and how is it? Do the clerks stare at me? Do they make game of my hat? Are they quite shocked at my dress? If they are they don't say so. They hop and skip and jump about, they pull down and unfold and spread out, as if I were Mrs. Nob Hill herself.

But just go up stairs with me into some of the rooms where ladies are employed. As I open the noiseless door on the heavy carpets, they look up. One glance is sufficient. From the country! They see it at once. They read it in every article I wear. Very well. I stand a few moments waiting, then some one saunters up to learn what I want. Perhaps it is a cloak. I explain that I wish such and such a style. "Really that is quite out of date. We do not keep them now. No one wears them; these are so much more stylish;" and she slips into a garment, and walks up and down before the long mirror that you may see how well she looks in it. Quite true, but I wouldn't. If still I insist in my preference, she finds one of that kind; I can take it or leave it; she is not going to pull over a lot of cloaks to please an old woman from the country.

Foolish girl! Do you not know that such a one is more apt to purchase? Do you not know that because of the shortness of her stay she must not waste her hours in simply looking; but that she really wishes he ar icle called for? Do you not know that if you would succeed you must make your services of value to your employer?

So I turn away, and find another cloak store, where the clerks are men. They find out what I want. At once they fall in with my ideas. They praise that particular style, and if it don't fit, if the sleeves are too short or too long, if there is too much trimming, or not enough, they find another and another, until I am suited.

Oh, girls, girls! When will you learn that if you would have business opportunities open to you that you must fit yourself for them? Do not complain that men take the places which belong to you. When employers find that you can make more sales than men can, you will surely have the opportunity.—*Mrs. R. in Rural Press.*

The Effects of Worry.—That the effects of worry are more to be dreaded than those of simple hard work is evident from noting the classes of persons who suffer most from the effects of mental overstrain. The case-book of the physician shows that it is the speculator, the betting man, the railway manager, the great merchant, the superintendent of large manufacturing or commercial works, who most frequently exhibits the symptoms of cerebral exhaustion. Mental cares accompanied with suppressed emotion, occupations liable to great vicissitudes of fortune, and those which involve the bearing on the mind of a multiplicity of intricate details, eventually break down the lives of the strongest. In estimating what may be called the staying powers of different minds under hard work, it is always necessary to take early training into account. A young man cast suddenly into a position involving great care and responsibility, will break down in circumstances in which, had he been gradually habituated to the position, he would have performed its duties without difficulty. It is probably for this reason that the professional classes generally suffer less from the effects of overstrain than others. They have a long course of preliminary training, and their work comes on them by degrees; therefore, when it does come in excessive quantity, it finds them prepared for it. Those, on the other hand, who suddenly vaunt into a position requiring severe mental toil, generally die before their time.

NEW INVENTIONS.

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

Horse-Holding Attachment for Vehicles. Robt. E. Shannon, S. F. This invention particularly appertains to that class of horse-checking devices operated by gear wheels attached to the hub of the vehicle. The usual running gear of a vehicle is employed. Under the body and running its length between the axles is a shaft terminating in its rear end in a bevel-pinion which meshes with another bevel-pinion on a rod. The rod is fastened in appropriate braces, which permit of its turning to the rear axle. Its outer end is provided with a bevel-pinion which meshes with cogs on the inner side of the hub of the wheel. When the vehicle stops the lines are thrown into a slot in the top of the upright standard. The stirrup is pressed forward, which action pushes the rear boxing sufficiently to throw the bevel-pinion and cogs upon the wheel in gear. If the horse moves forward, the rod turns, which turns the shaft, pushing the feathers or ratchets in the shaft into operation with a loosely running gear wheel, thereby winding up the lines and checking the horse.

Side-hill Header Wagon.—W. Taynton & W. J. Derickson, Clayton, Cal. This header wagon consists in certain connections and attachments by which they are adapted for use on side-hills, and are so arranged by means of peculiarly constructed gearing under the bed of the wagon, and operating on curved bolsters, that the bed of the wagon may always be kept on a level without reference to the angle which the wheels may take on side-hills, the center of gravity being always kept in such a position as to prevent danger of overturning, even with top-heavy loads.

Windmill.—E. Foskett, San Jose, Cal. This windmill consists in the employment of a vertically oscillating beam, which is balanced upon the upper end of a vertical rotating post or standard, and is provided at one end with a rudder which holds it in line with the wind, while the other end supports a frame containing a series of vanes. In combination with this apparatus is a novel device by which the vanes have their angle changed at the end of each stroke, so as to produce a return stroke, and a regulating device by which the angle of the vanes may be adjusted to suit the strength of the wind.

Gun for Killing Vermin.—J. S. Woolsey, Gilroy, Cal. The tube or barrel of this gun is provided with a leg whereby the gun is set upright in the ground at the mouth of the squirrel hole. When the gun is placed at the entrance of a hole, the animal, in coming toward it, will cause the gun to be discharged by touching a rod which is connected with the trigger.

A good clock oil is made as follows: Take olive oil and dissolve it in boiling alcohol, and add it drop by drop until it is no longer taken into solution. Upon cooling it will let fall crystals, and leave a considerable portion still fluid. The fluid part is to be poured off, filtered through a piece of white blotting-paper, and may be used in this form, or the alcohol may be distilled off for fresh processes, and the pure lubricating oil which remains is very suitable for oiling watches, clocks, or other delicate machinery. This will not oxidize or gum up, even when exposed to great cold. Or take neatsfoot oil and drop into it some lead shavings in order to neutralize the acid contained in the oil. Let this stand for a considerable time (the longer the better). Oil thus prepared never corrodes or thickens.

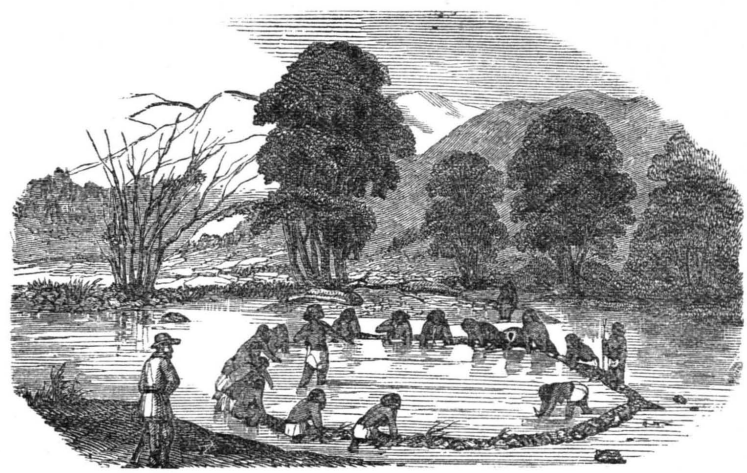
COAL SURPLUS OF GREAT BRITAIN.

The following, from Iron (London) of February 11, on the much discussed question of Great Britain's coal supply, possesses unusual interest:

"A few years since there was a great outcry respecting the probable duration of our coal fields, the exhaustion of which, it was predicted, would be accomplished at no very distant date. The estimates were mainly based upon the annually increasing consumption caused by the rapid increase in the population, whilst insufficient allowance was made for probable new discoveries of coal, and which have in fact since been made. Witness the marked progress that has taken place during the past five years in the development of new workings in the South Yorkshire district. There is, however, another item on the credit side of the balance sheet, which it probably never entered the heads of any of our coal prophets to place there, but which has a very practical bearing upon the present subject. This is the economy resulting from improved conditions of working in the arts and manufactures, and from improved methods of consuming fuel. In one direction alone—namely, in the manufacture of iron and steel, an enormous saving has been effected of late years by improved methods of working and by the utilization of waste gases. So far from this matter having been taken into consideration by those who assisted in the coal scare, they appeared to think that the iron manufacture would eat itself out of coal, as it did once out of timber, and would become extinct. A leading writer upon the question in 1865, Mr. Stanley Jevons, in one of his jeremiades observes that, 'As our iron furnaces are a chief source of power in the present, their voracious consumption of coal is most threatening for the future,' and that our iron trade is essentially a suicidal trade in a national point of view. The question of economy in fuel in the manufacture of iron and steel was specially referred to by the president of the Society of Engineers, Mr. Charles Horsley, in the inaugural address which he delivered on Monday last. Mr. Horsley observed that the cost of pig iron has been greatly reduced by the adoption of the close-topped blast-furnaces, the gases being taken from them for raising steam, and for other heating purposes. Referring to Mr. Hunt's returns, he pointed out that the average quantity of coal consumed per ton of pig iron made in the United Kingdom had declined since 1871 to the extent of 16 cwt. per ton. Applying this figure to 6,000,000 tons of pig iron, the total economy reaches 4,800,000 tons of coal per annum. With regard to wrought iron, we are not aware that any statistics of the consumption of coal in the manufacture have ever been collected, nor is it possible to arrive at the quantity of such iron annually produced. The nearest approximate estimate shows that at the present time about 1,750,000 tons of wrought iron are annually made in the United Kingdom, and that this is a decrease of about half a million tons on the quantity made seven or eight years ago. No economy of fuel worth speaking of has, we believe, taken place for many years in this department of the iron trade. In ninety-five cases out of a hundred, the same puddling furnace that was used twenty years ago is still employed; and the best authorities are pretty well agreed that three tons of coal per ton of finished iron is not too high an average. This on a production of 1,750,000 tons, gives a total consumption of 6,650,000 tons on the present output. As, however, that output is about half a million less than it was some years ago, we have a reduced consumption of coal equivalent to 1,500,000 tons in respect of this branch of manufacture. Turning to the manufacture of steel, we may observe that, so far as the Bessemer steel trade is concerned, it is pretty generally admitted, and has, indeed, been proved by the results of a large experience, that the quantity of coal required to produce a ton of steel rails is 65 per cent under that used in producing the same quantity of iron rails. If, therefore, the manufacture of wrought iron were to give place entirely to that of Bessemer steel, an economy of 4,322,500 tons of coal would be likely to result. As it is, the quantity of steel rails now annually produced is between 600,000 and 700,000 tons. Assuming the figures to be 650,000 per annum, we have a reduced consumption of fuel, when compared with iron rails, to the extent of about 1,166,500 tons. It is not possible, nor is it necessary, for us to enter upon a consideration of the exact or even the approximate economy of fuel represented by every individual process and appliance. Of puddling furnaces alone, there are a vast number professing to secure great economy of fuel, in comparison with the ordinary reverberatory furnace, although the latter still continue to hold their own in practice. There are also many other directions, as we have already intimated, in which a great saving of fuel is effected. We have, however, sufficiently shown, in further elucidation of the suggestive question touched upon by Mr. Horsley in his address, that, if the demand has increased in one direction, it has materially diminished in another, and this, with additional sources of supply, has given us a surplus instead of a dearth of coal.

AN INDIAN FISHERY.

Our illustration shows the style of fishing practiced some years ago by the Piute Indians in Nevada. A tourist of a score of years ago gives the following account: As we rounded a little knoll we discovered the entire rancheria of Indians in a bend of the river making preparations to catch fish, and we at once rode down to witness the sport, which proved to be a novel scene. Stretching nearly across the stream was a rocky bar, over which a very little of the water rippled, while the main body of it made a sudden bend around, keeping close to the opposite bank. Just above the bar was a deep eddy, and above this the stream was broad, shallow and rapid, and skirted on each side with a thick growth of low, withy willow. Here of this willow the Indians made a drag about two ft. in diameter and in length sufficient to reach across the stream. On the bar they had built a slight wall of the small rock in the form of a half circle, at the lower side of which was a willow fish-trap, the water being only a few inches or a foot deep inside the circle. When all was ready they swung the drag out across the stream and let it sweep down to the eddy when they all gathered in above it and keeping it near the bottom swept it through to the shallow bar, bringing the two ends to join the wall, when they had all the fish "corraled" within the circle, then pressing their knees upon the drag to keep it firmly to the bottom, they commenced the exciting sport of pulling out the fish, which as a matter of course tried to find a place of egress at the upper side. The suckers, which constituted a greater portion of the fish, were easily taken in this way; but the trout, more wily, flipped lightly over the drag and away up stream again. The scene they presented as they knelt over the drag, men and squaws, old and young mixed up indiscriminately, and carried the fish to their mouths as they caught them to bite their heads, frequently holding then in their teeth for some minutes, the poor suckers twisting themselves spasmodically in their death agonies, was truly ludicrous and amusing. A few of the fish entered the trap, and at the last, one big fellow, seemed to have got an idea of the danger that awaited him on either hand, and flipped about in the center of the pool, foiling for a long time all their efforts to catch him, they in the meantime getting highly excited, but finally a squaw pounced upon him and held him up in triumph.



INDIANS FISHING ON WALKER RIVER.

IMPROVEMENTS IN DYEING.—Mr. Theodore Daux is the inventor of a process for fixing rapidly and uniformly mordants on cachemeres, merinos and such kinds of woolen goods, as also for the chemical curing of wool. The goods are treated in the ordinary way until they are ready for the mordants. These are prepared cold, and are composed according to the color required, acidulated or not, or even consisting of one acid only, according to the new chemicals to be employed. The goods are immersed and worked till well impregnated, when they are lifted out and pressed, and afterwards passed on cylinders heated by steam to a high degree, in order to fix the mordant in a rapid and uniform manner. The fabrics thus mordanted are taken at once into the dye-bath at the boil, and the rest of the dyeing and finishing done in the usual way. Heated stoves can be used instead of cylinders. Mr. Daniel Fanquet fixes colors by steam. He replaces the dye-baths which, as is not the rule, are generally heated up to a certain temperature in order to fix the color on the fiber, by completely cold baths, and he afterwards steams to fix the color. It is said that great economy is effected by this method.

INTERESTING EXPERIMENTS.—A very important and valuable series of experiments on the strength of wrought iron columns has been made by Mr. G. Borescaren. It includes a large number of columns made by the Union Iron Mills, Pittsburg, by the Cleveland Rolling Mill, Cleveland; the Phœnix Iron Co., Phœnixville; the Pencoyd Iron Works, Philadelphia, and the Ohio Falls Iron Works, New Albany, Ind. The paper was read before the American Society of Civil Engineers, and is published in the last December number of the transactions of that body.

SULPHUR IN LUBRICATION.—It has long been known that sulphur cools a hot bearing, but the reason why is doubtful. Von Heeron states that the fine metal dust formed when a journal runs hot, and which strongly acts upon both journal and bearing, forms a sulphide with the sulphur. This compound, which grows soft and greasy, does not cause any appreciable amount of friction. Sulphur and grease in combination are in regular use on board the steamers of the North German Lloyds.

POLAR EXPLORATION.

The steam whaling bark, *Mary and Helen*, recently purchased by the Government for $100,000, has been taken to Mare Island, to be refitted for the search expedition after the missing *Jeannette*. Her whaling outfit is to be taken out of her, that not being included in the purchase. By the time the vessel is refitted at the Navy yard, she will have cost the Government a good round sum. Her actual value was perhaps $35,000 to $40,000, without taking into account the contingency of profits for the season; but, of course, like all Government purchases, two prices had to be paid. Not that the vessel is not a good one in her way, as she is new, strong and well built. It is probable, however, it will be found that she is much too large for the purpose intended. Speed is of little object where sometimes they do not make a mile a year; but size is a very important factor where the vessel has to be worked in narrow leads, and often "tracked" or hauled along by the men. A vessel the size of the *Corwin*, which went up last year, would be much more convenient.

The selection of officers and men for this expedition will be made in Washington, and it is generally believed that Lieut. A. G. Berry, U. S. Navy, will command the expedition.

We do not know what Mr. Berry's experience may have been, but think that a very careful selection should be made of some one with experience in Arctic waters. Capt. Hooper, of the *Corwin*, who went up last year, would have been an excellent choice, as his researches and experience would have been invaluable. His ice pilot, Capt. Smith, now on a whaling voyage, we believe, would also have been a valuable assistant. The assistance of one of the experienced whaling captains would also be of great service. Dr. W. H. Dall, of the Smithsonian Institution, who has spent so many years in coast survey work in Alaska, on his schooner, *Yukon*, would be among the best men that could be found if he would be willing to go. His great general knowledge, scientific ability, and experience with the currents, etc., of the coast, make him eminently fitted to command the expedition. Among others, Lieut. Schwatka was an available man. It is to be hoped that the expedition will not be given in charge of some one who has yet to gain his experience in the Arctic, as much valuable time will be lost if such is the case.

In this connection it may be stated that among the stories current in New York is one that James Gordon Benuett is seriously contemplating an Arctic expedition. Larry Jerome, who is in Europe with him, has recently written to a friend that, while Bennett is enjoying himself greatly as master of a hunt somewhere in England, he is very much depressed and anxious over the Arctic expedition which he equipped and sent out in the name of the *Herald*. He conceived it to be his duty to fit out another expedition in search of the last one, and take command of it himself. He has already telegraphed to stop work on a new yacht he contemplated building in this country, and thinks the money he proposed to spend that way shall be devoted to the building of a vessel to be speedily constructed with the view of encountering ice in the Northern seas. Already he has had some interviews with Scotch ship-builders on the subject. Therefore, the news that Bennett has seriously entered upon this new project may be expected at any time. It is characteristic of Bennett that execution follows closely upon the heels of conception.

News comes from Washington that two polar expeditions are to be fitted out and sent north early in the coming summer, under the direction of General Hazen, Chief Signal Officer, for purely scientific purposes. One, to Lady Franklin's bay, is to be under the command of Lieutenant Greeley, one of the most trusted officers of the Signal Corps; the other will sail from San Francisco and will establish itself at Point Barrow, on the north coast of Alaska. The commanding officer of the second expedition has not yet been designated.—*Scientific Press.*

THE GREAT BRIDGE AT ST. LOUIS.—A few years ago, in anti-bridge days, passengers were ferried across the Mississippi and landed on the crowded levee, at great inconvenience. But now, thanks to a great architect and mechanical skill, the tired traveler sits in his comfortable car until it reaches the depot in the heart of the city. The upper Mississippi has been spanned by 12 great railroad bridges, costing in the aggregate over $20,000,000, and this one at St. Louis has cost as much as all the other 11 combined. This magnificent structure is a monument to the engineering skill of Capt. James B. Eads. How can we describe it? Four massive piers of granite reach down to a rock foundation, more than 100 ft. below the surface of the river, and rise 80 ft. above the water. These stupendous piers support three immense arches, each one 500 ft. long. The arches are composed of chrome steel tubes united by a vast network of iron braces. The bridge has two divisions, the upper portion being used for carriageways, horse-car tracks and promenades. Through the lower division runs a double line of steam railway tracks, on which 100 daily trains go thundering back and forth. Leaving the bridge the trains plunge into a tunnel as dark as midnight, and nearly a mile in length, passing under the city to the great Union depot. As trains now meet at this great central station, and twice a day, it is probably the busiest place to be found in the country, morning and evening one can see no less than a dozen trains standing there ready to depart to all points of the compass.—*St. Louis Times*

THE GRAND CANAL OF CHINA.—This canal is likely to share the fate of the great wall. This water-way was constructed by Kublai-Khan and his successors of the Yuen race, and is 600 miles in length. There are 10,000 flat-bottomed boats on this canal, and these are used in the transportation of grain. The *Echo* states that this great water-way is an enormous "white elephant," as it costs an enormous amount every year for repairs, the appropriations there, as elsewhere, not being entirely devoted to the purpose for which they are meant. Junks are delayed every month while channels are cut for their passage. This year, for the first time since the construction of the canal, the grain from Nanking, with the consent of the government, has been forwarded by sea, and this fact has impelled the Peking authorities to consider the expediency of abandoning the canal as a commercial highway.

ENCROACHMENTS OF GREAT RIVERS.—The extent of the encroachments of rivers like the Mississippi and Missouri upon their banks can only be compared with what is taking place upon the south-eastern shores of Great Britain by the action of marine currents. Indeed, owing to the direct manner in which American rivers impinge upon their banks in certain parts, the destructive action is, in this case, still more rapid. Several thriving towns on the banks of the two rivers specified have within the last few years been swept away by the erosion of their banks.

WHEAT SHIPMENTS VIA HUDSON'S BAY.—Prof. Bell, who has lately returned from England, is gathering information in behalf of the Government to determine the feasibility of opening a route through Hudson bay, for the transportation of grain from the Northwest. It is claimed that grain can be laid down in Liverpool cheaper by the proposed route than by the all-rail route, the Canada Pacific railroad.

RAILROAD CONSTRUCTION FOR 1880.—The *Railroad Gazette* gives the amount of railroad construction in the United States for 1880 as 7,401 miles. The total mileage on Jan. 1, 1881, is set down as 93,898 miles.

IRON AND STEEL IN RUSSIA.

The London *Ironmonger* of January 29 has the following: "The protectionist tendencies of the new Russian Minister of Finance, M. Abaza, have caused a flutter among the iron-masters and coal mine proprietors of Russia. Confident expectations are expressed that the new metal tariff which came into effect on the 13th instant will be only a temporary measure, and that ere long fresh duties will be promulgated, having for their object the complete expulsion of English coal and iron from the Russian market. In the article of pig iron the abolition of the exemption practice is a great gain for the native iron-masters, and one would have thought that it would have stimulated them to increased activity. Not only, however, is Russia badly supplied by the native iron-masters to-day, but she is even more dependent upon foreign support this January than she was the corresponding period of last year, the demand for iron having increased in the interval, while the output of the country has diminished. The activity of Americans and others, of which so much was said in the summer, appears to have completely died away.

"For the moment M. Abaza is busy reorganizing his department. When he has got the treasury in order he may be expected to take in hand the tariff, and afterwards pass on to the numerous projects for developing the railways of Russia. Any development of these must be of interest to England, as it means possible orders for steel rails and rolling stock. For 1881 several lines are projected.

"Krupp is now staying at St. Petersburg, to arrange for a contract for three milion roubles ($2,000,000) for the construction of cannon for Russia. On this point there has been a furious discussion in the papers, many affirming that the order ought to be given to native firms. To establish the Abouchoff Steel Works at St. Petersburg, a million was sunk some years ago, and orders for guns have been repeatedly given to the concern since. But the guns cost twice or thrice the amount paid to Krupp, and are very considerably inferior to his. Hence Russia, in spite of her desires, must continue to give her contracts to Krupp for the presnt. Krupp's visit to St. Petersburg has been taken advantage of by several Finnish railways to give him large orders for steel rails.

"The Minister of State Domains has just reported that in the 46 leading provinces of Russia there are 203 works for manufacturing agricultural implements. These employ 6,642 workmen, and turn out machines to the value of 4,500,000 roubles ($3,000,000) a year. In 1875 the import of foreign agricultural machinery was valued at 3,157,000 roubles. In 1880 it had fallen to 1,628,000 roubles."

NEW TREATMENT FOR SCARLET FEVER.—A very interesting experiment was tried by Dr. Ashby, medical officer of health for Grantham (England), in dealing with an outbreak of scarlet fever in that town during the summer of 1878, by means of isolating the patients in tents. He prevailed upon the local authorities to erect a tent hospital on the outskirts of the town, and induced parents to send their sick there. The result was most successful. Parents availed themselves of the tents largely (their early prejudice against them being readily overcome), the patients did remarkably well, and the spread of the disease was unquestionably much curtailed. Altogether the example set was one which deserves to be copied, and shows with what readiness the spreading diseases of children may be dealt with by the exercise of energy and forethought.—*Lancet.*

CELLULOID IN A NEW ROLE.—It is reported that celluloid has of late been successfully applied in the form of a veneer in the ornamentation of furniture. It is used in this way in imitation of malachite, or colored marbles, for table tops, and for panels in imitating tortoise-shell and other costly materials.

CHAFF.

WATER colors—so does whisky.

THE man who digs 100 ft. into the ground for water gets along well.

WHY is the earth like a blackboard? Because the children of men multiply upon the face of it.

THE man who comes about solely to kill time should confine himself strictly to his own business.

EVERY to-morrow has two handles. We can take hold of it by the handle of anxiety or the handle of faith.

"FREE CHOPS" is a sign hung out by a Chicago restaurant, and when customers apply they are shown to a wood pile and handed an ax.

A YOUNG lady desired her lover to promise her that he would never smoke another cigar. "I'll do it," he said; "sustained by your love, a meerchaum will do for me."

"BRIDGET, I cannot allow you to receive your lover in the kitchen any longer." "It's very kind of you, ma'am, but he is almost too bashful to come into the parlor."

ALL the men in an entire county in Minnesota turned out on a wolf hunt the other day. The result was 36 dog fights and the capture of a fellow who had run away from his wife.

AN exchange says: "The bee stings itself to death in trying to sting someone else." Some men make things uncomfortable all around them for a season, but the end is generally worse for themselves than for those they sought to annoy.

"SEE that my grave's kept green," he warbled, under the window of his fair one's domicile one pleasant night. "I'll tend to the grave business, young man," shouted her enraged paternal ancestor, as he poked an old musket out of the second story window. No more concert that evening.

MY MONKEY.

There never was such luck. I've always thought that I'd rather have a monkey than be a million heir. There is nothing that could be half so splendid as a real live monkey, but, of course, I knew that I never could have one until I should grow up and go to sea and bring home monkeys and parrots and shawls to mother just as sailors always do. But I've actually got a monkey. It was Mr. Travers that got the monkey for me. One day there came a woman with an organ and a monkey into our yard.

She was an Italian, but she could speak a sort of English, and she said that the "murderin' spalpeen of a monkey was just wearing the life of her out." So says Mr. Travers, "What will you take for him?" and says she, "It's five dollars I'd be after selling him for, and may good luck go wid ye!"

What did Mr. Travers do but give her the money and hand the monkey to me, saying, "Here, Jimmy! take him and be happy." Wasn't I just happy though?

Jocko—that's the monkey's name—is the loveliest monkey that ever lived. Toby Tyler may talk about his "Mr. Stubbs," and tell how he understands everything said to him, and begs for crullers, and all that; but I tell you "Mr. Stubbs" was just an ordinary illiterit monkey alongside of my Jocko. I hadn't had him an hour when he got out of my arms and was on the supper table before I could get him. The table was all set and Bridget was just going to ring the bell, but the monkey didn't wait for her.

To see him eating the chicken salad was just wonderful. He finished the whole dish in about two minutes, and was washing it down with the oil out of the salad bottle when I caught him.

Mother was awfully good about it, and only said: "Poor little beast, he must be half starved. Susan, how much he reminds me of your brother." A good mother is as good a thing as a boy deserves, no matter how good he is.

The salad someway did not seem to agree with Jocko, for he was dreadfully sick that night. You should have seen how limp he was, just like a girl that has fainted away and her young man is trying to lift her up. Mother doctored him. She gave him castor-oil as if he was her own son, and wrapped him up in a blanket and put a mustard plaster on his stomach, and soaked the end of his tail in warm water. He was all right the next day, and was real grateful. I know he was grateful because he showed it by trying to do good to others, at any rate to the cat. Our cat wouldn't speak to him at first, but he coaxed her with milk, just as he had seen me do, and finally caught her. It must have been dreadfully aggravoking to the cat, for instead of letting her have the milk, he insisted that she was sick and must have medicine. So he took Bridget's bottle of hair-oil and a big spoon and gave the cat such a dose. When I caught him and made him let the cat go, there were about six tablespoonfuls of oil missing. Mr. Travers said it was a good thing, for it would improve the cat's voice and make her yowl smoother, and that he had felt for a long time that she needed to be oiled. Mother said that the monkey was cruel, and it was a shame, but I know that he meant to be kind. He knew the oil mother gave him had done him good, and he wanted to do the cat good. I know just how he felt, for I've been blamed many a time for trying to do good, and I can tell you it always hurt my feelings.

The monkey was in the kitchen while Bridget was getting dinner yesterday, and he watched her broil the steak as if he was meaning to learn to cook and help her in her work, he's that kind and thoughtful. The cat was outdoors, but two of her kittens were in the kitchen, and they were not old enough to be afraid of the monkey. When dinner was served Bridget went upstairs, and by-and-by mother says, "What's that dreadful smell? Sure's you're alive, Susan, the baby has fallen into the fire." Everybody jumped up and ran upstairs, all but me, for I knew Jocko was in the kitchen, and I was afraid it was he that was burning. When I got into the kitchen, there was that lovely monkey broiling one of the kittens on the gridiron just as he had seen Bridget broil the steak. The kitten's fur was singeing and she was mewing, and the other kitten was sitting up on the floor licking her chops and enjoying it, and Jocko was on his hind legs as solemn and busy as an owl. I snatched the gridiron away from him and took the kitten off before she was burned any except her fur, and when mother and Susan came downstairs, they couldn't understand what it was that had been burning, and guessed the cook must have put egg-shell on the fire.

This is all the monkey has done since I got him day before yesterday. Father has been away for a week, but he is coming back in a few days, and won't he be delighted when he finds a monkey in the house?—*Jimmy Brown, in Harper's Young People.*

WOMEN AND MINING.—There are many vocations at the present time which were, at one period in their history, almost exclusively monopolized by men, but are now being opened to admit woman, who has compelled recognition by her talent and ability. The ranks of the theologians and physicians show many women who well maintain the position they have sought and secured. Beyond a speculation in stocks, the business of mining has presented but few points of interest to the gentler sex. A case has recently come under the *Mining Beview's* observation which is at least worthy of record. Mrs. B. C. Clark, by the death of her husband, came into possession of a number of mining claims, and in order to intelligently superintend their development, and to gain a knowledge of the science of mining, she has taken a course of study in Prof. Mardock's school of assaying and chemistry in Chicago. This lady has also studied the operations of machinery, smelters and crushers, and is thoroughly imbued with the spirit of mining. A woman, as a skilled writer on metallurgy and mining, or as a superintendent of mines, would be a new thing under the sun.—*Nevada Transcript.*

THE TERRIBLE CRAMP COLIC, so often fatal before the dawn, can often be relieved within an hour with a milk emetic, and flannels, wrung in boiling water, applied to the stomach.

OXYGEN AS A CURATIVE AGENT.

Is oxygen a curative agent? The wonderful power which it possesses of destroying organic matter, and the purifying effect which always results therefrom, has led us, reasoning by analogy, to believe that many diseases which are now regarded as incurable, would succumb to the cleansing power of this element. The air contains only 20.095% of oxygen, the remaining 79.005 parts being composed entirely of nitrogen, which serves to dilute the oxygen. The depressing effect of a smaller amount of oxygen and increased amount of carbonic acid is felt when one has been for a short time in a poorly ventilated room.

In mountainous countries, where the hight above the sea level is not too great, the refreshing effect of the air is proverbial. This is simply because the proportion of oxygen is greater and of carbonic acid less.

The purifying effect of oxidation is strikingly shown in running brooks. Here water which is unfit to drink on account of organic impurities, becomes pure by running a mile or two. This change is due to the fact that in the act of flowing each particle of the water is brought into contact with the air, and absorbs the necessary amount of oxygen to combine with the organic matter, thus destroying it.

In many diseases a "change of air" is recommended as a cure, or at least as a source of relief. In its incipient stages consumption may often be cured by vigorous exercise in the open air, and by living wholly out of doors.

The benefit derived from pure air and exercise is due entirely to the large amount of oxygen which exercise—such as horseback riding—enables and compels the patient to inhale. The organic germs of disease are thus oxidized and destroyed.

We submit, then, to the public for consideration, the question: Will not the breathing of pure oxygen gas prove to be the solution to the problem, "How shall we treat consumption?" There is a well authenticated case in which a child was cured of hydrophobia by inhaling three cubic ft. of oxygen. In this case blood poisoning was the evil, and oxygen seems to have combined with the poisonous principle, thereby destroying it.

A young Frenchman who has recently been experimenting upon himself, finds that he can inhale oxygen without experiencing any ill effects. He took as much as 100 liters a day for several days. The writer has often inhaled oxygen for experimental purposes, and its use was never followed by any unpleasant effect.—*Hall's Journal of Health.*

MEDICAL USES OF EGGS.—For burns or scalds, nothing is more soothing than the white of an egg, which may be poured over the wound. It is softer, as a varnish for a burn, than collodion, and being always at hand can be applied immediately. It is also more cooling than the "sweet oil and cotton," which was formerly supposed to be the surest application to allay the smarting pain. It is the contact with the air which gives the extreme discomfort experienced from ordinary accidents of this kind; and anything which excludes air and prevents inflammation is the thing to be at once applied. The egg is also considered one of the best remedies for dysentery. Beaten up slightly with or without sugar and swallowed, it tends by its emolient qualities to lessen the inflammation of the stomach and intestines, and by forming a transient coating on those organs to enable nature to resume her healthful sway over the diseased body. Two or at most three eggs per day would be all that is required in ordinary cases; and since the egg is not merely medicine, but food as well, the lighter the diet otherwise, the quieter the patient is kept, the more certain and rapid is the recovery.

HOW TO SOFTEN RESIN.—Melt the resin, and while in a state of fusion add tar. The proper degree of hardness can be ascertained by dropping a small portion of the melted mass into water.

ONE STORMY NIGHT.

A stormy night, indeed,
"High up on the lonely mountains;"

the rain came down in streams, as if the sky were a great sieve, and not a ray of light found its way through the black clouds. The giant fir trees bent and swayed in the fierce wind, and sent their wild, wailing voices down through gulch and canyon to mingle with the roar of creek and cataract, or fell before the rocks that crashed down the mountains' sides. The terrified cattle lowed and cried in their corrals, huddling together for warmth and sympathy. Indoors, people drew near together, crowding around the hearth-fires that blazed in a fitful, almost uncanny way.

In a wayside inn on the mountain road, a little company sat thus gathered about an immense fire-place that glowed and flamed like a bonfire, and, not content with cheering the great room, sent its beacon light out at the windows to defy the night and the storm.

There was Mike Malone, the landlord, and Kitty, his fat, funny wife; little Maria, the Spanish girl whom Mike and Kitty had "rared;" Jake, the stable man, and last, because most important, "Bat," the French Canadian woodcutter. There was nothing in the young fellow's appearance to suggest the winged horror whose name he bore. It was merely a soubriquet for Baptiste. Jake seldom availed himself of the abbreviation, but slowly and emphatically styled him "Canuck," usually prefixing a descriptive that had more force than elegance.

It was ill-natured, to say the least, for Bat was one of the kindest fellows in the world, "and the ways of him," as Kitty said "was wan sthrame o' sunshine; but sure," she added, "Jake is that jealous that he can't thrate him dacent, though I'd sooner see Maree quiet in her grave nor married to the likes av him. Av she's in love wid the Frinchman? There ye have me now. She's that quare and shy, Maree is, that ye niver can tell her mind till she plazes to let ye know, and on this subject she hasn't plased yit."

And that was quite true, for when Bat's blue eyes, sparkling with fun and deep with the light of love, beamed upon the little dark-eyed beauty, her long lashes swept her cheeks; sometimes not until the quick eyes of Jake had seen the outspringing of an answering love, though not all Bat's gallant wooing could bring a word of it to her lips—silent, cantious little Maria, who doubted the gay manners of this rollicking knight of the ax.

"Did ever yees listen to the loike o' that?" exclaimed Mike, at a sudden crashing sound.

Kitty and Bat crossed themselves fervently, but Jake, with unmoved, sullen face, sat and glowered at the fire. Suddenly Maria sprang up, excitedly:

"It is a voice!" she cried.

"Indade, thin, it's the voice of manny wathers," laughed Kitty, though rather nervously.

"It is a human voice; it is calling for help."

"By golly, it's de debble den," said Bat. "Dat's nobody helse'll be on de road such a night like dat. I'll bet he's call for Jake," he added roguishly.

A deeper glower was Jake's only reply, but soon, lifting his head, he said:

"She's right, Maree is; ther is some one callin'."

"Out wid yees, men, till the riscue!" cried Kitty, seizing Mike's hat and coat and thrusting them upon him.

"Sure ye're spakin'," said Mike, ruefully preparing to leave the cheery hearth.

Bat, aroused by the light in Maria's flashing eyes, sprang up with enthusiasm, for, low be it spoken, his was not a grand heroic soul. His brave deeds were mostly born of impulse and nourished by the approbation of others.

Jake sullenly joined them, but before they reached the door it opened, and full in the firelight appeared a tall form, and handsome, yellow-bearded face—a striking picture, with the dark night for a background.

"By me sowl, it's the Docther. In the name o' the owld divil, who brings ye out in the loike o' this?"

"I don't go abroad in the devil's name, Mike," laughed the Doctor, making his way to the fire, and taking the chair that Kitty had hastened to place for him.

"No more ye don't Docther; it's Hiven's own sarvent ye are," she said earnestly. Bestir yerself, Mike, and bring him somethin' hot to drink, for indade, Docther, ye're the color of a ghost."

"I've had a pretty tough time to get here, and a few minutes ago I was more likely to arrive at the bottom of the gulch, where my poor horse is now."

The Doctor's voice trembled, and his eyes were wet with not unmanly tears, for, as the little company well knew, the horse was a pet and a beauty.

"Ah, woe's the night!" wailed Kitty. "Ye'll niver find a bettther baste nor a handsomer wan—and so proud he samed to bear ye, the poor faithful crature!"

"Yes, we've pulled through many a tough place together, and he never flinched nor failed me. The almost human cry he gave when he went down that horrible place will ring in my ears as long as I live," said the Doctor, shuddering. "But who's going to show me the way to Fraser's? There's a trail over the mountain, isn't there?"

"Begarry, there was wan," said Mike, with great hesitation, "but a very divil of a way ye'll foind it now—the traas do be crackin' and fallin' and the rocks a-rowlin' down in jest an infarnal manner. It's as much as yer loife is worth to ye to get there."

"And who's ailin' over there, annyway?" asked Kitty.

"I think it's the baby. Some one left word at my office that they feared one of Fraser's children was dying."

"Durned if I'll risk my neck fur one of Fraser's kids," said Jake, emphatically, going back to his seat by the fire.

"No great risk, thin," retorted Kitty. "Thim as is born to be hanged 'll niver be dhrowned."

"An' sure," said Mike, glancing at Kitty, "I'm thinking we're as safe outside as in afther this. We're in for it, annyhow; but danged if I'm anxious to drag my owld rheumaticky legs over anny trail to-night."

The Doctor looked at Bat. Maria, too, had looked at him, and that look had fired his soul with the courage of an old warrior, whatever the risk or the terror.

"Le ciel est le prix," thought Bat, thrilling beneath that look.

"Well, a guess a know dat way pretty well, an' if hany ting is happen I got de Doctor, ain't it?" said Bat, gaily brushing back his brown curls, and drawing over them the veritable blue *togue* that he had worn in the backwoods of Canada.

Then, in his droll way, he took solemn leave of Kitty and Mike, imploring them, if anything should prevent his return, to be good to Jake. Over Maria's little brown hand he lingered long enough to say unheard by all but her:

"I come again to thee—je t'aime."

And in a language understood by all, the dark eyes answered:

"I love thee."

And in a language known and taught by the Father of Evil, sullen Jake replied to his laughing, "Good-bye, my Jake—pray for me," with a look of hatred and a sullen, "Go to hell!"

"Behind you, my dear," answered Bat, with a profound bow.

Out into the black and terrible night went the two men—one obeying the mandate of his noble profession, filled with the sympathy it had taught him to give to sorrow and suffering everywhere; the other, his heart glowing with chivalric passion, to prove himself a hero in the eyes of her he loved—followed by the voluble thanks of Mike and Kitty, by the half proud, half anxious, and altogether loving, gaze of Maria, and also by the malignant glare of Jake's evil eyes.

"And Satan came also," thought the Doctor, observing the look.

Maria, too, turned in time to see the expression. It was just as Mike was telling them to look out for the bridge over Fraser's creek.

Then the door closed, and while the wind and the rain beat furiously against it, and Mike and Kitty speculated anxiously upon the chances of their safe arrival at Fraser's, Maria studied Jake's face as he gazed intently in the fire, where, from a pine knot, the lurid jets of flame darted out and leaped wildly up the black vault, as if eager to join their kindred spirits in the storm.

Suddenly Jake arose, and, muttering something in the way of a good-night, slouched out of the room. Maria, too, went softly out, retiring to her own apartment.

Meanwhile, safely on their way, through wind and rain and thick darkness, over fallen trees and raging waters, went the two men, Bat's jubilant heart overflowing in droll speeches, and songs that he sang at the top of his voice to scare away evil spirits, he said—and the doctor said he should think it would. But it did not, for behind them crept one whose intent was blacker than the night, more cruel than the angry streams.

Yet on they went along the narrow path, with the overhanging rocks on their right, and on their left, the fearful precipice; yet gaily onward, with cautious steps, until they reached the cottage, whose light shown out like a star in the black night.

"By golly, we've got here, don't it?" said Bat, drawing a long breath, as they paused at the door.

Is there anything, I wonder, that stirs a physician's heart more deeply than that look of mingled thankfulness and mute appeal, that greets him on his first arrival where life and death are struggling together?

"God bless you!" cried Fraser, who, alone with his wife, was watching the little one that lay flushed with fever, and moaning with pain. "God bless you, Doctor—we didn't think you could get here."

"There's a special providence for doctors, you know," he answered, smiling.

The mere sound of his pleasant voice seemed to give them courage, and the mother, with a gleam of hope in her eyes, and a deep sigh of relief, laid her baby in his arms, that clasped and bore the tiny burden with the tenderness of a woman. When a man has a gentle heart, tender not merely toward his own, but with a sympathy that reaches to all helpless, suffering creatures, how great it is!

"I was t'inkin'," said Bat, gravely, "'bo't dat providence you been spikin' abo't, why it ain't take care of Doctor's horses de same time."

After the Doctor and Bat had crossed Fraser's creek, the stealthy figure that had followed them thus far, with something in his hand, stopped, cowering under a fir tree, till the gleam of their lantern was like a firefly in the distance; then he approached the bridge, and, with eyes grown accustomed to the darkness, examined the end that lay upon the bank. He could see sufficiently well for his purpose, which was soon apparent, for, taking up his pick, he commenced digging into the bank and displacing the rocks, working with a fiendish energy.

"Curse him," he said between his teeth, "I fix him so that no doctor can't save him!"

And so, with muttered curses, with the hoarse, bellowing torrent beneath, and the shrieking pines above, the work was done, and the timber left in such position that one attempting to cross upon it would cause its fall. It was horrible to think of—plunged into that hell of waters and whirling debris, to be dashed against the sharp rocks or carried swiftly down the dark ravine to a death as sure and cruel if not as sudden.

"There, you infernal Canuck," said the man, "you bet you've done your last love-makin'. I'll take that little business off your hands," he added, with an ugly laugh.

"But first you'd better repair that bridge."

It was Maria, with her lantern suddenly turned full upon him.

He uttered one fearful oath, and shrank trembling like a coward that he was before the girl's gleaming eyes, as she held her light aloft.

"I know what you have been doing, and what it is for. Now, go to work and make it safe again."

"I'll be damned if I do," growled Jake.

The only answer was the click of a revolver that the little firm hand held steadily enough. She knew how to use it; Jake was well aware of that. More than once he had seen her bring down her game, with a skill that many an old hunter might envy.

"If this fails, I have something else at my belt. Do as I tell you, or I will kill you as I would a wild beast that threatened me."

"She'd do it, the little Spanish devil."

"I'm tempted to do it now"—click. "Oh, how quickly I could send you down there where you meant to send *him*. I can hardly keep from doing it, I hate you so; but I'd scorn to have such dirty blood on my hands. Now, go to work."

Stung through and through with her contempt, cowed and unnerved by the threats that he knew were not idle ones, Jake set about the work, and it was soon completed.

"Now go home!" she said sternly.

There was no choice but to obey, and, still under cover of the girl's revolver, he went before her like a sulky convict driven to his cell.

"I'll release you in the morning," she said, as she drove him into a snug out-building, and, fastening the door securely, left him to his meditations.

The rain had ceased. Up through the green canyons floated the mists of the morning. Tinged with rosy light, they sailed away through the blue ether. Up rose the sun, shining grandly on the mountains, and through those floods of gold came the Doctor, and Bat caroling his gay song, proud as a troubadour home from the war, going to kneel at his lady's feet.

"By golly, we're save dat baby," he cried, springing through the open door. "And how is Jake? A bet he's ben most sick of lonesome widout me. Eh, where is he, dat Ja-k-e?" he shouted.

But Jake did not appear.

"And then, Marie, my little one," he murmured in his own language, that she had learned in childhood, "hast thou no smile for me? Those beautiful eyes, have they nothing to say to me this morning? They were so eloquent last night, my heart was aching with joy. Look at me Marie—but thou art pale. Wert thou troubled for me, my little love?"

Swiftly the color rose to cheek and brow, slowly the long lashes were uplifted, and from dewy eyes and parted, rosy lips smiled the glad welcome home. Jake, just then appearing at the door, saw it all, and with a stifled groan of jealous passion and defeat, he turned and fled, half blind with rage, he knew not where—to get away from that maddening sight, that was all his thought—away to the caves of the mountains where he could crouch like a wounded wolf and howl out his despair.

Crash! down through the treacherous bridge of poles and bark! Down, down the shuddering depths he whirled, and the stream, scorning to bear such a burden, hurled him aside upon the jagged rocks, where the long ferns trailed their broken plumes and the ivy wound its poisonous bands.

"They'll never find me," he thought, "but it's right—its just. It's what I was goin' to do to him, curse—no, I can't die cursin'," and, with bleeding, untaught lips, he tried to pray. "O Lord, I dont know how!" he whispered faintly. "But didn't he say forgive? What was it mother used to make me say? 'If I should die—my soul to take—Jesus'—sake.'"

His head drooped lower, his lips were still. The water swept across his breast, the long ferns, waving, brushed his bleeding hands, and through the laurel branches the sunshine fell upon his ghastly face.

"Jake, my poor feller, look—hope you heyes—you ain't dead, don't it? *Sapre*, wake up, *mon ga*," cried Bat in an agony of terror and compassion, as with trembling hands he dashed the water in his face and rubbed his hands, and from Jakes' pocket flask poured whisky down his throat. At last Jake slowly unclosed his eyes and feebly moved his lips.

"Dat's right, by golly, swear if you want to, but keep your heyes hopen; dat'll scare de debble when dey're shut. Now, how you tink I'll got you hout of dis? Here, embrace me, *mon cher;* put you harms ron ma neck, *comme ca—ho donc!* You are more heavy dan a blackoak log, but keep to me—now, hup we go. Dere," laying his burden safely on the bank, "you better bath yourself in de stable next time, young feller."

But Jake had fainted again, and Bat ran to the house for help.

"Yes, I meant to kill you, Bat, as true as you live," said Jake, in his first penitence. "I'm sorry now, for you're a brick, and you deserve the girl; but I couldn't stay round, and see her smilin' like that on no man, not if he'd saved my life a hundred times; I might be tempted agin; it's in my nater, Bat. I'm a mean cuss, that's a fact; but as soon as I'm on my pins agin, I'll git."

And he did. And Maria and Bat were married one day when Father Sheridan came to celebrate mass in the little mountain chapel. The pines and the waterfalls played the wedding march; and if the trees could not quite banish the mourning from their voices—there is a little that is sad in everything; but the happy lovers heard only sounds of joy.

The Doctor was there to kiss the bride, Baby Fraser, cooing and crowing and waving her dimpled hands, and Mike and Kitty, all tearful and smiling and eloquent with Irish words of blessing and endearment.

But to this day, Bat cannot comprehend Jake's malice, and says with puzzled look, "I'll never tought he'll done dat proppus."—*Julia H. S. Bugeia in February Californian.*

THE VALUE OF WHAT IS LEFT.

There always is something left. The tornado passes, and it is said only desolation remains. But it is not true. There are fragments left; there are foundations left; there are walls left; the solid earth remains; there are living people left; there remain all the conditions out of which the wrecked village may be rebuilded and repeopled. Reverses strip us of capital, of estate, of home. We say, "there is nothing left." But it is not true; there is always something. We have some clothing, we have some bread; we have some friends; we have some health and strength and individual capacity; we have indestructible resources within us; there are some opportunities left; there are infinite possibilities left. Above is the immutable heaven, beneath the stable globe; the divine providence is not missing, the divine love is not diminished. Out of the ruins of every autumn are made ready the sproutings of very spring. The winter lies cold and black between; and from December to March, "The winter alone is king," we say, but it is not true. There is no king but God; there is no sovereignty but His; there is no power that does not serve Him, absolutely and utterly. He it is who divides the year into its four various parts, and sets these parts together mosaic-wise, to make perfect beauty. He it is who rejoices not less in all the beauties of the black and bleak and freezing weather, than in the beauties of the spring and summer and autumn weather, which are easier to us. If we were but strong enough, we could stand up beside Him, and rejoice in all that rejoices Him. Winter is fearful only to those whom it can pinch and cripple and crush. He who can defy its rigors hears only music in all its blasts, sees only beauty in all its snows; toys with its terrors as a mother tigress with her cubs, and fears not because there is no reason to fear.

A BRIDAL couple from Washoe valley at breakfast conversed as follows: He: "Shall I skin your pertater, honey?" She: "No, thank you, dearie, I have one already skun."

SENSIBLE SOCIALS.

It is to be regretted that people are not more social; that the long winter evenings are not improved more generally in our country villages by getting acquainted with our neighbors, by exchanging thoughts with them, and each adding something to the common store. One great objection to the more frequent exchange of hospitalities is the amount of labor it adds to the burdens of the housekeeper—the tired woman who would really be refreshed and brightened by intercourse with other minds; who would be lifted out of the tiresome routine of her every-day work into an almost ideal region. But if with poor help, or possibly without any, she must be perplexed by the thought of elaborate entertainment; she cannot enter with any zest or enjoyment into the visit, and so the chief good to be derived from it is at once done away with. It is not right that so much should be thought necessary as is almost invariably offered to guests that a tea should not be considered complete without a variety of meats, half a dozen kinds of cake, and other things accordingly. An experiment tried in one of the large villages in this State is worthy of being repeated elsewhere. A number of ladies and gentlemen deliberated upon this subject, and at length resolved to see what could be done. There were about 12 in all, and they agreed to meet once in two weeks at each other's houses during the winter. They were to come to tea and spend the evening in reading, music or conversation, just as each hostess should decree; a simple supper was to be served. The bill of fare agreed upon was white or brown bread, tea or coffee (not both), one kind of cold meat, one kind of cake, cheese or pickles, and some canned fruit; each lady pledging herself not to offer anything more. The result was a series of æsthetic teas, which were a delight to those who participated in them, and proved clearly the possibility of being hospitable without great weariness of flesh.—*Exchange.*

WOMEN AS INVENTORS.—It is often loosely said by men that women never invent anything. But women can be, and are, inventors, as is shown by the report of the Patent office for the past year, when more than 70 patents were granted to women, an increase of 10 over the previous year. Most of the patents are for household articles, with which they are most familiar, and in which improvements would be suggested by daily use. The feminine mind is, as a rule, quicker than the masculine mind; it takes hints, and sees defects which would escape the average man's attention, particularly in all domestic utensils. The beginning of everything is an idea; but they who have ideas are often incapable of giving them material form. Women frequently carry the germs of patents in their heads, and cause some rude machine containing the germ to be constructed which serves their purpose. If they were men, they would, in all likelihood, have applied for patents, and, in a proportion of cases, have obtained them. But woman seldom thinks of getting any profit out of her ideas or from her ordinary labor; her whole and only aim being to lessen the trouble and friction of her work. In many of the farm-houses of the country, especially in those of New England, divers improvements have been made in culinary and other utensils through the suggestions of women—suggestions that should have been patented. If women would fix their minds to inventions, it is entirely probable that they would distinguish themselves in that line far more than they have ever done hitherto.—*N. Y. Times.*

A GARCON and a Provencal bragged to each other of the fertility of their respective countries. "At Bordeaux," said one, "if you happen to drop a match in a field, the next year you will have there a pine forest." "At Marseilles," cried the other, "if you drop a suspender buckle, eight days after, you will have there a pair of ready made trousers."

THE WORLD'S FAIR OF 1883.

The Executive Committee of the World's fair, to be held at New York in 1883, are holding frequent meetings at their rooms in that city, and report a gratifying increase in popular sentiment everywhere; not only in this country, but in Europe as well. Gen. Grant has added much strength to the enterprise, and has taken hold of it with energy and determination. Mayor Grace, of New York, who is Chairman of the Finance Committee, is fast doing away with the temporary differences which beset the enterprise at its outset, and is now meeting with decided success in his efforts to interest and organize the support expected from the business men of New York.

The Centennial exhibition, although a grand success, was an experiment, and did not elicit anything like the full interest of all the States of the Union. Some, indeed, did not participate at all; but those that made appropriations were amply reimbursed in the advantages which they derived. The only regrets over the grand results have been formed in the minds of people whose States failed to make appropriations to enable their citizens to share in the benefits.

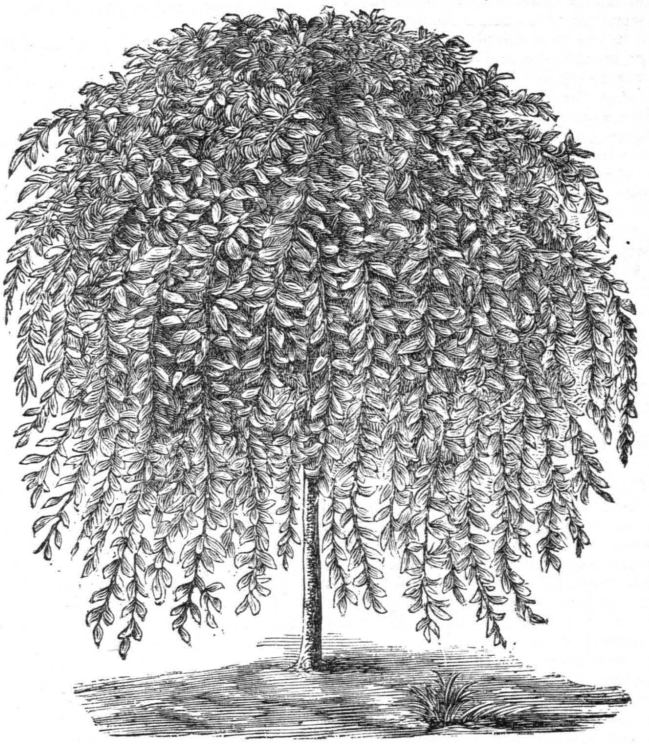
This was especially the case with California, but the recent Legislature found time in the midst of a greatly disturbed and exciting session to unite in a strong majority for the passage of a bill appropriating $5,000 "to provide for a proper representation of the products of California at the next World's exhibition, to be held in New York, in 1883." The amount is small, but it is amply sufficient for all preliminary work; and there can be no doubt but that the next Legislature will supplement this appropriation by whatever additional amount the wants and needs of exhibitors may seem to require.

The States and Territories will determine, each for itself, the manner and character of their exhibitions. Some will prefer to make full exhibitions; others to exhibit specialties. Some will prefer to furnish their own exhibition buildings, after the manner of Kansas and Colorado at Philadelphia. Others will seek space in the buildings of the Commission. It is yet too early to forecast what may be the policy of California, but at the proper time this matter will take shape, according to circumstances. Efforts will soon be made to arrive at an approximate estimate of what will be the extent of California's exhibits, and the space which she may need. It has been suggested that a street of States should be laid out in one of the principal buildings, similar to the street of Nations in the main building at the Philadelphia exposition. Such a design, if properly carried out, would form an imposing feature in the exposition, and would do much to excite an honest spirit of emulation among the exhibitors from the different States. An avenue of States has also been suggested, with buildings for State exhibitions, like the Kansas building at Philadelphia, where the great mass of the exhibits of the several States could be aggregated. For such a plan the great grain-producing States of the West might make their exhibits more prominent by introducing them in bulk; the Southern States would have ample room for their bulky products of cotton, rice and sugar; the mining States, their combined products of mine and field, and the New England States their manufactures, etc. Such an arrangement would be especially favorable for adding interest and zest to "State days," which will be set apart for the different States for especial State ceremonies. This feature contributed largely to the interest of the exposition of 1876.

The times are propitious. The country, and indeed the whole world, is fast entering upon an era of remarkable prosperity. Our experimental exhibition of 1876 surprised both ourselves and Europe; and the announcement of another American International exhibition for 1883, is awakening interest abroad, far beyond that which was created in 1876. Our people, our merchants, our capitalists, our manufacturers and our producers of every class, should and will be fully aroused to the importance of the work in hand. The exhibition of 1883 will be commensurate with the growth of the country, and worthy of the exalted purpose to be accomplished in aid of the united industries of the world.

THE KILMARNOCK WILLOW.

The Kilmarnock weeping willow, a representation of which is shown in the engraving, is not grown in many places on this coast. Mr. R. J. Trumbull, the seedsman, has one, we believe, growing on his place at San Rafael, and he has sold a few of them this year. Being one of the most popular and widely disseminated of weeping trees in the East, its history may not be interesting. It was discovered growing wild in a sequestered corner of Monkwood estate, near Ayr, in Scotland, by an aged botanist, named John Smith, an enthusiastic lover of plants and a zealous collector. From him Mr. Lang, a nurseryman at Kilmarnock, purchased one plant in 1844.



THE KILMARNOCK WEEPING WILLOW.

Sir W. J. Hooker, curator of Kew Gardens, received two plants in the spring of 1852, and having observed how exceedingly ornamental it was, gave Mr. Lang a decided opinion, stating that he thought very highly of it, and that it was much admired in the Royal Garden at Kew. The name Kilmarnock weeping willow was given to distinguish it from the common weeping willow and the American weeping willow. Of all weeping trees, it is the one best adapted for small lawns, garden plots or yards. Very handsome plants may now be obtained, grafted on stems six to eight ft. high, for training into umbrella heads. Grafted low, say three to four ft. high, with the head nicely kept and the branches trailing on the ground, it becomes a novel and interesting object on the lawn. For rounding off or completing the end of a belt or border of trees or shrubs, it is very appropriate.

Mr. Wm. C. Barry, of Elwanger & Barry, the Rochester seedsmen, says that in a recent trip through Scotland he did not meet with a single specimen of this tree, either in the parks, nurseries or gardens. It seems strange that it is so little esteemed in its own home, especially since we in this country hardly think any ornamental tree equal to it.—*Pacific Rural Press.*

THE CROUP.—Toward midnight, after the first sleep, the hateful croup usually fixes its dreadful fangs on the unconscious child. What avails it in the country, miles away from a physician or a drug store, that this, that, or the other remedy is "good for" the disease, when neither physician nor remedy could be had for hours; and all this while the mother is in agony, and the infant sufferer clutches its throat for breath? In such an emergency no medicine known is so potent for cure as a boiling teakettle and a bit of flannel; or, as a lump of ice or snow, with a handful of salt, applied to the throat in a silken pad or bag.—*Dr. Hall.*

ASPARAGUS COOKING.—A hint about boiling asparagus is worthy of mention, since the proper method is rarely followed. Asparagus of the stouter sort, always when of the "giant" variety, should be cut of exactly equal lengths, and boiled, standing ends upward, in a deep saucepan. Nearly two inches of the heads should be out of the water—the steam sufficing to cook them, as they form the tenderest part of the plant, while the hard, stalky part is rendered soft and succulent by the longer boiling which this plant permits. Instead of the orthodox 20 minutes allotted to average asparagus lying horizontally, which half cooks the stalk and overcooks the head, diminishing its flavor and consistence, a period of 30 or 40 minutes, on the plan recommended, will render fully a third more of the stalk delicious, while the head will be cooked by the steam alone.—*The Caterer.*

A NEW leaden roof is being placed on the cupola of St. Peter's, Rome, which it is will take two years to complete. Something of the magnitude of the building may be inferred from the fact that the roof was begun 17 years ago, and although the laborers have not been constantly at work, the work is enormous. The roof is divided into 16 sections, each of which requires 1,000,000 lbs. of lead.

MINES AND RAILROADS IN MEXICO.

There is considerable excitement both as regards railroading and mining in Mexico. The mines are mostly discovered and being worked, but the railroads are mainly as yet on paper. It is not probable that the conservative people of that country will view the advent of American miners and railroad men with great rejoicing. Nor is it likely that the new roads will go through the country as cheaply and early as was expected. The inhabitants will in all probability throw every obstacle they can in the way. A dispatch from Tucson, Arizona, on the 16th says that parties in from northeastern Sonora report that the politicians of that State are very much opposed to the extension of the railroad in that direction, believing that it will result in virtually turning the Government over to Americans. The railroad is now replacing its Indian with white labor, and expects to push work much faster than heretofore. The railroad company also find considerable objections to locating the line of the road through Mexican ranches along the river bottom in the neighborhood of Ures.

The cheap labor calculated upon by the railroad contractors is not going to be quite as cheap as expected, since the laborers will soon learn that they are "worthy of their hire." A correspondent of the *Bulletin*, who is at Paso Del Norte, Mexico, writes that wages have advanced there. He says: "Laborers now receive 75 cts. per diem, being just double what they received a few months ago. Oot of the 37½ cts. they had to provide their own food, and as the payment was in the copper money of the country, which is valued 10% below Mexican silver, and 20% below United States money, it will be seen that Mexican laborers have heretofore received less remuneration for their toil than the Chinese in California. There is quite a probability of a further advance in the price of labor here, as some Mexicans have been employed by railroad contractors on the American side at $1 per diem and their board, and the contractor of the Texas-Pacific has advertised for 200 laborers at the same rate. As it is understood that grading will be commenced on this side of the river upon the return of the surveying party, a large number of Mexicans will find employment at wages approximating to those given on the American side. For an improvement in their condition, the laboring class of Mexico will he indebted to American enterprise, as under the sway of the European commercial element, which has dominated the country and retared its prosperity, there was no hope for them."—*Mining and Scientific Press.*

Melting and Refining Bullion.—Among those measures passed by Congress in its last session was an Act amending Sec. 3,524 of the Revised Statutes, by striking out the words "for melting and refining when bullion is below the standard," and inserting in lieu of these the words "for melting or refining bullion," making the section read as follows: The charges for converting standard silver into trade dollars, for melting or refining bullion, for toughening when metals are contained in it which render it unfit for coinage, for copper used for alloy when the bullion is above standard, for separating the gold and silver when these metals exist together in the bullion, and for the preparation of bars, shall be fixed from time to time by the Director, with the concurrence of the Secretary of the Treasury, so as to equal, but not exceed, in their judgment, the actual average cost to each mint and assay office of the material, labor, wastage and use of machinery employed in each of the cases aforementioned.

Useful Hornets.—Most persons may not be aware of the fact that there is an old-standing feud between the hornet and fly families. A farmer who was acquainted with this fact recently hung up in his parlor a hornet's nest which he found in the woods, and in a short time the house was thoroughly cleared of flies. Is not the remedy worse than the disease?

TO COAT ARTICLES WITH LEAD.

Professor Emerson Reynolds thus describes one of the best methods of applying his new process of galenizing, or covering with lead various substances: Take 16 grammes of solid sodic hydrate (NaOH) or an equivalent of other suitable hydrate, dissolve it in 1.75 liters of water, and add to the liquid 17 grammes of lead nitrate ($Pb2NO_3$), or an equivalent of other lead salt, with 250 cubic centimeters of water; raise the temperature of the mixture to 90° C. If sufficient lead salt has been added the liquid will remain somewhat turbic after heating, and must then be rapidly strained or filtered through asbestos, glass-wool, or other suitable material, into a convenient vessel. The filtered liquid is then well mixed with 100 cubic centimeters of hot water containing in solution four grammes of sulpho-urea or thiocarbamide. If the temperature of this mixture be maintained at about 70° C., deposition of galena in the form of a fine adherent film or layer quickly takes place on any object immersed in or covered with the liquid, provided the object be in a perfectly clean condition and suitable for the purpose. When the operation is properly conducted a layer of galena is obtained, which is so strongly adherent that it can be easily polished by means of the usual leather polisher. It is not necessary to deposit the galena from hot liquids, but the deposit iron is more rapid than from cold solutions.

The most convenient solution for deposition on brass is thus prepared: Take a quantity of soda lye containing 1½ ounces of real soda (NaOH); dissolve this, with the aid of heat, three ounces of tartrate of lead, and just before diluting the solution to one gallon of cold water, add five drachms of sulpho-turea previously dissolved in a small quantity of hot water. The articles are to be immediately immersed in this bath, and the temperature raised to boiling. When the desired tint is obtained the articles are to be removed, washed and polished. The above solution can be used for glass or porcelain, hot or cold, if the proportion of alkali be reduced one-third or thereabouts.

Copying Drawings.—By a method patented by M. Joltrain, of Paris, it is claimed that copies of drawings having nearly black strokes on a white ground can be made by the following sensitising mixture: Gum, 25 grammes; chloride of sodium, three grammes; perchloride of iron at 55° B., 10 cubic centimeters; sulphate of peroxide of iron, five grammes; tartaric acid, four grammes; water to fill up to 100 cubic contimeters. The developing bath may be a solution of ferrocyanide of potassium, red or yellow, acid or alkaline. The printing is done in the ordinary way, and the developing in a bath of red or yellow prussiate of potash. After washing the proof is put into an accidulated bath, which darkens the lines to an indigo tint, and is then again washed and dried.

Coloring Glass.—Oxide of gold is employed to impart to glass a beautiful ruby color. Suboxide of copper gives a red color. Silver, in all states of oxidation, gives a variety of beautiful yellow and orange colors of glass. Antimony, lead and silver, in combination, are employed to produce the inferior yellow color. The oxides of iron give to glass various shades of green, yellow, red and black. Oxide of chromium gives a fine green, the oxide of cobalt a splendid blue. The color most valued, next to that produced by gold, is the yellow communicated by oxide of uranium, and which has an appearance resembling shot silk. White glass or enamel is made by adding either arsenic or the oxide of tin to the melted metal. The various metals used in coloring glass are also employed in the manufacture of artificial gems, and by their means the color and general appearance are well imitated.

One gallon of neat's-foot oil mixed with four ounces of lampblack makes a good harness oil.

Manganese Metal in the Arts.—The Germans appear to be making extraordinary efforts to extend the uses of manganese in various forms. As the displays of various works at the Dusseldorf exhibition showed, they are now manufacturing not alone high-grade ferro-manganese, but also almost pure metal and its alloys. The high price, due to the difficulty of reducing manganese from its ores, makes the use of the highest grades of manganese for steel impossible, but the Isabellan-Huette, at Dillenburg is making a material running as high as 94% of manganese for special purposes. They use it in the preparation of various alloys of manganese and copper, used in the refining of copper and the manufacture of manganese, bronze, brass, etc. While phosphor copper and phosphor tin must be added to bronze with great care, in order to prevent an injurious action upon the tenacity and ductility of the metal, and while phosphor bronze does not stand repeated re-melting without parting with its phosphorous, manganese can be added to the extent of 10% and forms a part of the alloy. The manganese copper, generally used for improving the quality of bronzes, brass, etc., contains 30% of manganese. The Isabellen-Huette produce also an alloy of 89% of copper and 11% of manganese, which, cast in sand, shows a high tenacity and ductility, and replaces copper in some respects. No tin whatever is added, and it is believed that this manganese and copper alloy may be used for guns, etc. The pure manganese metal, a mass which crumbles easily, has been tried with much success in the Mansfield copper district for refining, and there are prospects of its adoption for this purpose as soon as the price has been somewhat reduced.

A Leg Amputated by Electricity.—A very interesting operation was performed in the Toronto General Hospital a few weeks ago. It consisted of amputation, by means of electricity, of the left leg at the hip. The patient, a young man, being reduced very much by the sloughing of an open wound on the outside of the leg, it was desirable that he should lose as little blood as possible. Having placed the patient under the influence of ether, the customary flaps were made, and then a platinum wire, attached to the two poles of a galvanic battery, was encircled round the leg under the flaps. In a moment this wire was brought to a white heat, and began to cut its way through the limb. By the great heat the ends of the arteries were contracted, and only the larger ones required to be tied. Many of the leading surgeons of the city and a large number of the students from both schools were present.

Compound Locomotives.—M. Mallet has recently published additional data on the working of compound locomotives. A locomotive built according to his plans was first exhibited at the Paris exhibition, and some time later he read before the English Institution of Mechanical Engineers a paper describing it and giving particulars as to its working on the Bayonne and Bearrity railroad, France. From his latest report it appears that his engines required 3.3 lbs. of fuel per horse power per hour. They weigh full 196 tons, have a small cylinder 9.45 inches in diameter and a large one 15.75 inches in diameter, with a 12.72 inch stroke. The steam pressure is 150 lbs. The quantity of fuel consumed during times of heavy traffic was 13.8 lbs. per train mile. In view of the growing use of high pressure compound stationary engines, these results are of much interest.

Electric Tides.—Mr. Alexander Adams, of the English Postoffice Telegraph Department, reports that he has observed the existence of electric tides in telegraph circuits. By long-continued observations he has determined distinct variations of strength in those earth currents which are invariably present on all telegraphic wires, following the different diurnal positions of the moon with respect to the earth. He read a paper on the subject at a recent meeting of the Society of Telegraph Engineers.

ELECTRIC LIGHT FOR THE EYES.

When the electric light began to be used in our shops, factories and places of amusement, it was confidently asserted by its opponents that so dazzling a light must be injurious to the eye. The objection seemed plausible at least, although the light when diffused seemed to have the quality of bright moonlight, which is the reverse of irritating. People would persist in looking at the source of the light, and as the early lamps were far from steady, the observer's eyes suffered both from the intensity of the light and the sudden and large variations in the quantity of it. It appears, however, from the experiments recently made by Professor Cohn, of Breslau, whose name is so familiar in connection with the investigation of color blindness and other optical defects, that our eyes will be benefited rather than hurt by the new method of lighting, and it is obvious that with incandescent electric lighting the advantages will be still more marked.

While testing the influence of electric light on visual perception and the sense of color, Dr. Cohn proved, he thinks, that letters, spots and colors were perceived at a much greater distance under electric illumination than by gas light or even daylight. Compared with daylight, the electric light increased the sensation of yellow 60 fold, red 6 fold, and green and blue about 2-fold. Eyes that in daylight or gaslight could perceive and distinguish colors only with difficulty were much aided by the electric light, and the visual perception was much strengthened. In all cases of distant signalling Dr. Cohn believes that the electric light will prove exceedingly and especially useful.

A New Electric Light Burner.—For over 20 years Mr. Holland, the gold pen manufacturer, of Cincinnati, has been experimenting with iridium, seeking some method by which it might be fused. Some time ago he discovered a flux which he mixed with the iridium dust, and successfully fused it in a common crucible in the ordinary draft furnace. He cast the metal in any shape desired, and in bars of ingots weighing as much as 10 ounces. The metal thus fused and cast defies the file and resists all acids. The only mechanical way of cutting it is by friction, with a copper wheel charged with diamond dust or fine corundum. Prof. Nelson Perry, of the Cincinnati University, regards this as one of the most wonderful discoveries in metallurgy he ever knew. As soon as his discovery was made, Mr. Holland saw that iridium would be valuable as a burner for electric lights. Iridium burners two inches long, and from one-eighth to one-sixth of an inch thick were tested, but the machinery used was found to be too powerful for an incandescent light, which is all that was aimed at with the iridium burner. The light produced, however, was very pleasant, and no glass globes were necessary as the atmosphere produced no effect on the metal. Experiments are now in progress with the Maxim machine, the electric current of which can be more easily regulated. A set of burners can be furnished for about $4, and these burners will radiate a 10-candle light, upon present calculations, for an indefinite time. Mr. Holland has patented his discovery in this country, and also in Europe.

A New Style of Card for Woolen Mills.—A new invention makes the teeth of cards a little more than one-half the ordinary length. It is claimed by this that so much stripping is avoided, and that the wire does not retain the dirt and fibers as any other teeth do; that the ordinary card teeth are longer than is actually necessary to the carding operation, which is effected by the extreme end of the teeth. The new process uses steel wire, tempered and hardened and flattened, or needle pointed wire; the cards seldom requiring grinding, are very durable, etc. The invention is English origin.

Why has a man lost all his teeth when one is extracted? Because he is a tooth-less man.

Light and heat have for some time been regarded as essentially the same thing—being only different manifestations of the same radiant energy; but it is only quite recently that this theory has been satisfactorily demonstrated. By the use of a Rutherford grating and a delicate thermal balance, Prof. Langley of Alleghany (Pa.) Observatory, recently succeeded in obtaining for the first time full and exact measurements of the distribution of energy in a pure spectrum, where no lens or prism had been used, and of fixing its relative amount as determined accurately by the wave-lengths of light in all parts of the visible spectrum and in the ultra red. The essential result is of high theoretical value. It is that heat and light as received from the sun are now experimentally proved, so far as such measurement can prove it, to be in essence the same thing. The old delineations of essentially different curves representing heat and light must be banished hereafter from text books. The old views on this subject can no longer be maintained even by European men of science, who are prepossessed in their favor. This result, fulfilling what was almost a prophecy when it was made, a quarter of a century ago, by the elder Draper, and being due largely to means which science owes to Mr. Rutherford, may, if obtained, be most fairly claimed as largely due to the two Americans whose names have just been cited.

New Use of Tungstate of Soda.—Prof. Sonnescheim, of Berlin, some time back found that when glue in thick solution is mixed with tungstate of soda, and hydrochloric acid is added, there is thrown down a compound of tungstic acid and glue, which at from 86° to 104° F. is so elastic as to admit of being drawn out into very thin sheets. On cooling this mass becomes solid and brittle, but on being heated it becomes soft and plastic. This material has now been employed as a substitute for albumen in fixing aniline colors in calico printing, and it has been tried in tanning, but produces hard and stiff leather. As tungstic acid renders fabric incombustible, its use in calico printing is a valuable feature. How far it is applicable in the manufacture of paper remains to be seen. Tungstic glue is recommended as a lute and cement. It may also have an application in the manufacture of billiard balls, knife handles, and as a substitute for India rubber.

What We Think With.—Without phosphorous no thought. So declared a famous German physiological chemist some years ago. That particular brain substance which he supposed to be essential to thought has heretofore been known as protogen with phosphoric acid. Considering this name not clear and definite, another German chemist has proposed for it the following precise and significant combination of 72 letters. Oxaethyltrimethylammoniummoxydhydrateleylopalmethyloglycerinphosphosaure. If mental derangement is in any way due to deficiency in the elements of this highly-complicated compound, or to any snarling of its multitudinous constituents, the wonder is that anybody can ever think straight. And what a lot of it that German must have had in his head when he contrived such a name for it!

Carbonic Acid Gas in the Atmosphere.—In a lecture recently delivered by Prof. Ira Remsen, at Baltimore, that scientist maintained that air may contain 1-20th of its volume of carbonic acid gas without producing evil effects—a conclusion by no means novel, but sustained by such chemists as Berzelius and Pettenkoffer. He stated that the most delicate tests failed to reveal the presence of carbonic oxide in the atmosphere of rooms heated by furnaces or by cast-iron stoves. According to his opinion there may be other pernicious gases in the air breathed, but there is no reason whatever why the deleterious effects should be attributed to carbonic oxide.

BRAZING AND SOLDERING.

The term soldering is generally applied when fusible alloys of lead and tin are employed. When hard metals, such as copper, brass or silver are used, the term brazing (derived from brass) is more appropriate.

In uniting tin, copper, brass, etc., with any of the soft solders, a copper soldering-iron is generally used. This tool and the manner of using it are too well known to need description. In many cases, however, the work may be done more neatly without the soldering-iron, by filing or turning off the joints so that they fit closely, moistening them with soldering fluid, placing a piece of smooth tin-foil between them, tying them together with binding wire and heating the whole in a lamp or fire till the tin-foil melts. We have often joined pieces of brass in this way, so that the joints were quite invisible. Indeed, with good soft solder, almost all work may be done over a lamp without the use of a soldering-iron.

Advantage may be taken of the varying degrees of fusibility of solders to make several joints in the same piece of work. Thus, if the first joint has been made with fine tinner's solder, there would be no danger of melting it in making a joint near it with bismuth solder, composed of lead four, tin four and bismuth one; and the melting point of both is far enough removed from that of a solder composed of lead two, tin one and bismuth two to be in no danger of fusion during the use of the latter.

Soft solders do not make malleable joints. To join brass, copper or iron so as to have the joint very strong and malleable, hard solder must be used. For this purpose equal parts of silver and brass will be found excellent, though for iron, copper, or very infusible brass, nothing is better than silver coin rolled out thin, which may be done by any silversmith or dentist. This makes decidedly the toughest of all joints, and as a little silver goes a long way, it is not very expensive.

For most hard solders borax is the best flux. It dissolves any oxides which may exist on the surface of the metal, and protects the latter from the further action of the air, so that the solder is enabled to come into actual contact with the surfaces which are to be joined. For soft solders the best flux is a soldering fluid which may be prepared by saturating equal parts of water and hydrochloric acid (spirit of salt) with zinc. The addition of a little sal-ammoniac is said to improve it. In using ordinary tinner's solder, resin is the best and cheapest flux. It possesses this important advantage over chloride of zinc, that it does not induce subsequent corrosion of the article to which it is applied. When chlorides have been applied to anything that is liable to rust, it is necessary to see that they are thoroughly washed off and the articles carefully dried.—*Indianapolis Mechanical Journal.*

Why Saws Heat.—One whose lot it has been to hang and put into operation hundreds of circular saws, and traveling from mill to mill trueing saws and putting the machinery in order, says: "Saws heated at the center are almost invariably the fault of either the mandrel heating, or the collars not being properly turned, or sometimes the saw may not be in proper line with the carriage, or the track out of order. Saws heating at the rim and not at the center, is generally the fault of the saw leading too much into the log, causing it to bear too hard against the outside guide. The above defects are among the most prominent. Often the machinist in putting in the lug-pins of a mandrel will turn them too large, then drive them into the collar with a hammer, and swell the metal around the pins without noticing the defect. In such a case, the saw will only have a bearing at a small surface around the pins, and never fit nor hang true until the metal is chipped or filed off level with the face of the collar. Often the collars will not run true; this defect should be corrected at once."

THE ZENANA.

This is the name which is given in India to the part of the house devoted solely to the wives and female attendants of a wealthy Mussulman, whose fortune permits him, in accordance with the tents of the Koran, to have several wives. In Turkey such a place is called the "harem," a name better known among American travelers than its Indian cognomen. Nor is this habit of secluding womenfolks confined to the Mussulman; both Hindoos and Parsees have also adopted the custom of their early conquerors. The latter, though, being very liberal in his views, is rapidly attaining the western standard of civilization, and ere many years pass on he will have adopted all the ways of his European master and model.

THE WORLD'S FAIR OF 1883.

The Executive Committee of the World's fair, to be held at New York in 1883, are holding frequent meetings at their rooms in that city, and report a gratifying increase in popular sentiment everywhere; not only in this country, but in Europe as well. Gen. Grant has added much strength to the enterprise, and has taken hold of it with energy and determination. Mayor Grace, of New York, who is Chairman of the Finance Committee, is fast doing away with the temporary differences which beset the enterprise at its outset, and is now meeting with decided success in his efforts to interest and organize the support expected from the business men of New York.

The Centennial exhibition, although a grand success, was an experiment, and did not elicit anything like the full interest of all the States of the Union. Some, indeed, did not participate at all; but those that made appropriations were amply reimbursed in the advantages which they derived. The only regrets over the grand results have been formed in the minds of people whose States failed to make appropriations to enable their citizens to share in the benefits.

This was especially the case with California, but the recent Legislature found time in the midst of a greatly disturbed and exciting session to unite in a strong majority for the passage of a bill appropriating $5,000 "to provide for a proper representation of the products of California at the next World's exhibition, to be held in New York, in 1883." The amount is small, but it is amply sufficient for all preliminary work; and there can be no doubt but that the next Legislature will supplement this appropriation by whatever additional amount the wants and needs of exhibitors may seem to require.

The States and Territories will determine, each for itself, the manner and character of their exhibitions. Some will prefer to make full exhibitions; others to exhibit specialties. Some will prefer to furnish their own exhibition buildings, after the manner of Kansas and Colorado at Philadelphia. Others will seek space in the buildings of the Commission. It is yet too early to forecast what may be the policy of California, but at the proper time this matter will take shape, according to circumstances. Efforts will soon be made to arrive at an approximate estimate of what will be the extent of California's exhibits, and the space which she may need. It has been suggested that a street of States should be laid out in one of the principal buildings, similar to the street of Nations in the main building at the Philadelphia exposition. Such a design, if properly carried out, would form an imposing feature in the exposition, and would do much to excite an honest spirit of emulation among the exhibitors from the different States. An avenue of States has also been suggested, with buildings for State exhibitions, like the Kansas building at Philadelphia, where the great mass of the exhibits of the several States could be aggregated. For such a plan the great grain-producing States of the West might make their exhibits more prominent by introducing them in bulk; the Southern States would have ample room for their bulky products of cotton, rice and sugar; the mining States, their combined products of mine and field, and the New England States their manufactures, etc. Such an arrangement would be especially favorable for adding interest and zest to "State days," which will be set apart for the different States for especial State ceremonies. This feature contributed largely to the interest of the exposition of 1876.

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SCENE IN AN EAST INDIAN ZENANA.

THE revised new testament will be published by the English University presses in May next in different sizes and styles of binding, at corresponding prices.

A NEW FLEA PEST.—The Manchester (N. H.) *Mirror* gives the following: A Hollis family by the name of Patch is tormented with fleas to a degree heretofore unknown in a civilized country. It appears that in 1876 a member of the family came from a sea-port town in a second-hand suit of clothing. Shortly after, the father, mother and three members of the household discovered the presence of a black insect. This insect is called a flea by the Hollis people. He burrows under the skin of the victim and tortures him day and night. Artificial heat makes him more lively, and hence the family have little or no fire in house, preferring to endure the cold rather than a terrible burning and itching. They have baked their clothes and burned their beds, they have consulted medical men at home and abroad, have tried internal and external remedies, and still get no relief. They are isolated from the community and in deep trouble.

"HONEST JOURNALISM."—President Hayes recently made a speech in Baltimore in which he complimented "honest journalism." If the management of all newspapers were "honest," the country would be far better off than it is at present, for then newspaper would condemn all dishonesty; but, unfortunately, too many newspapers are now used to help plunder the people. They advocate the election of dishonest candidates to office for the purpose of making money for their masters through corrupt practices.—*Morning Call.*

PROGRESS IN MACHINERY.

One hundred years ago, when thread numbered 150 by the standard set up by spinners was considered the utmost degree of fineness possible by English spinners, a pound of cotton spun to such fineness would give a thread 74 miles in length, sufficient to reach from Boston to Concord, N. H. The machinery of to-day spins for useful purposes thread numbered 600—from one pound a thread 196 miles in length. And machinery has been constructed so delicate that a pound of cotton has given a thread reaching 1,061 miles—farther than from Boston to Chicago! The weaver of my boyhood could throw the shuttle perhaps 25 times a minute, but not at that rate through the day. Human muscle would break down under such rapid action. In 1850, Compton's loom threw the shuttle 50 times a minute, whereas so great has been the advance of invention, that the loom of to-day is considered a slow-moving mechanism if the shuttle does not fly 240 times a minute. "No man can afford to take as a gift to-day a cotton manufactory equipped with the machinery of 1860," was the remark of the late superintendent of the Amoskeag mills. "We are breaking up the machinery of those days for old iron."

In some departments of cotton manufacture, a man with the present machines will do eight times the amount of work which he could accomplish in 1860. In the manufacture of coarse cloth an operative with 10 machines does twice the work which he could accomplish with 13 machines before the war. There never was a period so fruitful in discovery, so fertile in invention as the present, and the reason is manifest. The first discoverers and inventors groped in the dark. They were ignorant of nature's laws. They did not know what force was. They had a limited comprehension of what the simple mechanical powers were. There was little accumulated wealth of research.

In contrast, the mechanic of to-day has all the discoveries, the experiments, the ascertained facts, mathematics of machinery, the laws of force at his command. He inherits the scientific wealth of all the past and makes it his capital. Instead of gazing, as it were, upon old mines worked out, he beholds mountain ranges filled with golden ore, and engages in his work with the stimulus of the needs of the human race, and the ever increasing wants of an advancing civilization.—*Sci. Am.*

CASTINGS.—Castings seem to take to themselves peculiar freaks of irregularities, the causes being difficult to define. They occur sometimes in the sand, sometimes in ramming, sometimes in venting, and often with wrong facings. For instance, the quality of facing sand must always be graded, according to the casting to be made heavy or light, deep or shallow in the mold. Again, inferior coal in facing sands is detrimental. Possibly the dealer in foundry facings has been grinding inferior stock, instead of getting a carbon in the form of coal dust to stand the iron pouring against the mold. There has been dirt and slate ground in with the coal. This is a cause of scabby castings, together with too fine a sand or a sand without body, which all molders dread except for very light work. If molders could only have good sands, good irons, and good facings, and the same stock supplied each time, there would be little need of complaint; but the geology of our country is not such as to admit of digging molding sand at every foundry back door, when molding sand costs from $40 to $50 a car delivered in a foundry yard, as we know it does in many instances.—*Amer. Machinist.*

RUBBER WHEELBARROW tires were first invented in England to prevent the noise of wheelbarrows in warehouses, railroad stations, etc. To accomplish this object a rim of vulcanized rubber is fastened around the tire of the wheelbarrow.

DRIVING NAILS BY MACHINERY.

Nails are now driven by machinery in most box factories where sufficient system and repetition exist to make it profitable, one machine doing the work of 10 or 15 men. The general idea of these machines is as follows: The nails are fed by hand into bell-shaped holes in a revolving disk. These holes are arranged in radial lines, each line with as many holes as there are nails wanted along the side of a box. This disk revolves and delivers the nails into bent tubes, each nail to a separate tube, which delivers it to a kind of a pair of nippers arranged in a row with others. Upon receiving their nails, the nippers advance simultaneously, so as to bring each its nail under a kind of stationary hammer, the point of the nail protruding below the embrace of the nippers. At this point in the operation, the box upon a sliding platform rises until the points of the nails penetrate it to a certain extent, when the nippers relax their hold and recede, the box still rising to receive the entire penetration of the released nails, the stationary hammer acting upon the heads of them meantime. This nails one edge of the box; but all the edges having the same arrangement of nails are finished by a repetition of the above movements. Then, to do the ends, the boxes are transferred to other machines, or the same one can be re-adjusted when a sufficient number of boxes have been passed. These machines work with rapidity and precision, and not one nail in many thousands fails to enter properly. Self-feeding nail machines are beginning to occupy the attention of inventors with some degree of success.

THE LOCOMOTIVE A PRECEDENT FOR HIGHER PISTON SPEED.

Advocates of high piston speed, just now attracting some discussion and exchange of opinions, have a strong argument on their side in the locomotive as built and operated to-day. Certainly no more prominent instance could be cited in favor of the system. Here is a machine that depends upon high speeds of piston for its success, and is worked under more adverse and destructive conditions than a stationary engine is ever liable to, yet it undergoes no extraordinary wear and tear, while exerting greater power in the same space of time than the stationary engine. As regards mechanical construction, the locomotive engine displays the most advanced knowledge of the day, in the fitting up of parts, in proportion of wearing and bearing surfaces, and in working steam expansively, as far as the link motion is capable, while in mere endurance of shock and strain of varying loads, handled by different persons of more or less mechanical knowledge, it suffers more in a year than a stationary engine in a lifetime.

No other tools than those already in daily use are required; no mechanics other than those already trained, need training, so that if we are to build high speed stationary engines instead of low speed, the necessary appliances and precedents exist. In connection with this subject, and as a practical example of the truth of the statements above, engine 273 on the Pennsylvania railway may be cited. This engine was built in 1875, has 5-ft. drivers, and weighs about 38 tons. It has never been repaired until recently, two months ago, and in 49 months' continual use has made a mileage of 251,552. This is only one instance, but doubtless many more could be cited in favor of the practicability of economical high piston speed.—*Exchange.*

FURNITURE POLISH.—For a polish to clean up and brighten old furniture, pianos, etc., dissolve four ounces of orange shellac in one quart of 95-cent alcohol; to this add one quart of linseed oil and one pint of turpentine; when mixed add four ounces of sulphuric ether and four ounces of aqua ammonia; mix thoroughly before using. Apply with a cloth or sponge, and rub the surface to which it is applied until the polish appears.

WELDING BY ELECTRICITY.

It is well known that great strength, with porportionally light weight, may be obtained in wrought-iron structures by employing the tubular form of making up. The great Victoria bridge, the Menai Straits bridge, the hull of the *Great Eastern*, and many other modern constructions of wrought iron are cases in point. But the cellular structure also has its advantages. The comb of the honey bee has been often quoted as a specimen of the utilization of space. It is fully as instructive as an illustration of the judicious employment of material for strength. It will appear reasonable to suppose that a rectangular sectioned beam of wrought iron would be much stronger if its interior was a series of transverse braces formed of sections of a circular or angular form, and making a part of the structure itself. The difficulty in the way of such an achievement is the impossibility of forming these transverse braces and the longitudinal plates into a solid and homogeneous whole. Claim has recently been made by a bright mechanic, that he can, by electrical action, really weld iron in place, and he exhibits a piece of his handiwork that appears to be perfectly welded, and done, as he says, by the heat of electricity. He says that he has filled a rectangular beam of wrought-iron plate with short sections of wrought-iron pipe, placed side by side, or at distances apart, but at their ends meeting the top and bottom plates of the beam, and welding them *in situ* so that they form a honey-combed structure making a homogeneous beam. He insists that this welding is done by means of dynamic electricity, inducing a welding heat on the inner surfaces of the longitudinal plates and the ends of the engaging tubes. The claim, at present, rests solely on the inventor's statement and his exhibit of a small specimen, not large enough to give a practical value to his reputed discovery. If his sanguine claim could be made a practical possibility, its value in increasing the usefulness of iron in permanent structures would be immense, and his discovery would greatly modify some of the present methods of working fibrous iron.—*Design and Work.*

IMPROVEMENT IN ORDNANCE.—In the matter of building large ships, and casting heavy guns, the American people have not kept pace with Europeans. The heaviest American-built ships are floating shells compared to the massive iron vessels England, France, Italy and other European powers have constructed; and the largest guns on American ships or seaboard defences bear no comparison in the weight of missile thrown by the guns which are floated on European navies. It is now intimated that the discovery of what is termed a new system of ordnance, by an American, will do away with the improved cannon, which have been brought to their present state at such enormous cost. Late Eastern papers give long accounts of recent ordnance experiments in Washington, in which the new invention was tested. These experiments are reported as highly satisfactory, but still showing that the plans of the inventor are not yet perfect, or, rather, that they have been imperfectly carried into practice. The purpose of the inventor is to make war so destructive that, by common consent, it will be abandoned as a means of settling international difficulties.

WAR ON THE POTATO.—Dr. Heath, a scientist of New York, has ventured upon dangerous ground. He read a paper before the Farmer's Club, in which he opened a war against the time-honored potato. It is an agent, he says, in producing obesity. Many lean persons will be glad to learn that they will double on the potato ratio at once. "Ah, but" says Dr. Heath, "the potato makes the wits fat, also;" and further, "after the lapse of a few generations it dwarfs, mentally and physically the people who live upon it." As in the admixture of food, the potato has not been proved dangerous during several centuries, we think people will be willing to trust it in the future.

SPRING CLEANING.

'Tis morn! On leaving home around I glance—
All there is luxury and elegance;
The dog and cat upon the hearthrug lie,
My sweet wife kisses me and says good by,
While servants bring my hat, and coat and cane,
With so much comfort, how could man complain?

'Tis noon. As to my home I then draw near
I hear the sound of blows. The atmosphere
Is but a stifling, blinding cloud of dust;
'Tis from the carpets beaten, I mistrust;
And, horror stricken, to the house I fly,
A scene of desolation greets my eye.

The carpets up, the curtains down, fires out,
Furniture all upset and piled about;
While back and forth, with heads in towels bound,
With skirts looped up a foot above the ground,
And arms all bared, fly creatures—can it be
My lovely wife and servants neat I see,
Tearing about in those outrageous duds,
And stirring up this awful smell of suds,
While in their eyes there gleams a dangerous light?
Great heavens, 'tis they! Oh, what a dreadful sight!

The dog, once scalded, from them keeps aloof;
The cat has sought for safety on the roof;
And in the dining-room, where I had thought
To find a toothsome dinner, they have got
A fiend of Afric blood, who joys to swing
A whitewash brush and spatter everything.

But I am not forgot. My feast is spread
Out in the woodshed on a barrel head—
One slice of bread, a plate of warmed-up beans,
Some water in a mug, a dish of greens.
Oh, banquet rich! And best of all, you see,
I've brought a fellow home to dine with me.

—*Boston Post.*

PHINEAS FOSTER.

"And what is it you're thinking of, Phineas, my lad, all this long afternoon, that you've not opened your mouth once? 'Tis time you were thinking of a wife, I should say. Little did your father need, when he was your age, to have his mother tell him as I now do you that she would have no old bachelors round the house. No, Phineas, my lad, old bachelors do not belong to our family, and ill would be my luck to be bringing in the first. Look round, and when you find the right one bring her home here to me, to the old homestead. None of the new fashioned misses, with their silks and fine airs and delicate ways, but think of me when I was a girl, and ask her, as your father did me, could I milk the cow? could I scrub and sand the floor? and was I a busy-body and gadder-about?"

And while, her breath being exhausted, the speaker looked up from the stocking she was darning to see what effect her words had upon Phineas, my lad (for she had such a habit of saying my lad when she spoke of her son that it seemed like his surname), we will look at him too. Phineas Foster, the hero of our story, is not much of a sight as he sits there patching an old shoe—for he is farmer in summer, cobbler in winter. He is tall and thin, with that extremely diffident appearance which white hair, very red face, and falling, stooping shoulders give to any man; but Phineas suffered not only from these personal defects, but his eyes being extremely weak were protected from the light by a pair of silver-bowed, blue-glass spectacles. His blue cotton trousers having at some former time given out at the knee, his careful mother had taken out the weak part and sowed the rest together again, giving by such an abridgement a view of ankle, etc., decidedly unbecoming to the style of figure of our friend Phineas. The tout ensemble, though striking, was anything but agreeable, and Phineas looked much more like a candidate for old bachelorship and one corner of his mother's fireplace, that for matrimony and its cares.

Yet there was one in whose estimation Phineas Foster was the one perfect, and she, sitting in a distant corner binding the shoes which he was to sole, waited as impatiently as we do for his reply to his mother. Now Phineas was not guilty of much thinking, and when he found his mother's eye was upon him, said, with an additional shade of red in his countenance:

"'Tis little of misses I've been thinking; but since nothing else will suit you, where shall I find one?"

The worthy mother, not being much of a matchmaker, was in her turn rather confused, for she well knew her son was no favorite among the country lassies, but speaking quickly, as if at no loss, answers:

"Why, look about yourself, Phineas, my lad. A good wife is a blessing from the Lord—but you must search till you find her. Look about you, my lad."

Again those timid eyes over in the further corner were lifted, but Phineas did not seek to meet their gaze. Little did either mother or son know that she who was to be their light and joy, and to save Phineas from bachelorship, was the penniless orphan, without home and friends, that fortune had thrown upon the hands of Mrs. Foster. If Phineas *would* but look about him, look into that little corner!

"But that's not telling me where to look, mother. There's Maggie Watson, but 'twas only the other night out on the green, when they thought I'd gone home, I heard her ask, 'What does Phineas seem like?' and when she said, 'A goat,' they laughed. Well, I heard them. Who wants any of them for a wife? That's what I was thinking of."

"Phineas, my lad, go to the minister. He will help you. Go to the minister and inquire for some worthy body."

This idea seemed as brilliant to the son as to the originator of it, and he answered with unusual haste:

"I'll go this night, mother, for I must have a wife. The sooner we're all settled down again the better."

Neither of the two noticed that at these words the poor orphan, who had sat so quietly pursuing her irksome tasks left them alone.

Evening came, and with it appeared Phineas, having dispensed with the aforementioned diminished article of wearing apparel and donned his Sunday's best, before the minister's door. We will not linger on the workings of the wife-seeker's mind before he could intelligently explain the object of his visit; but he departed with a light heart, and repeating to himself his future wife's name, lest he should forget it ere he reached his anxious parent.

The spiritually wise are not always the most worldly wise, if so the Rev. Mr. N. would not have chosen Anna P. for a helpmeet for our hero. She lived many miles away in a distant State, and knowing the inexperience of our marriageable friend, Mr. N. offered to arrange all preliminaries for him, which offer, as we should suppose, was most gratefully accepted.

Anna P. was about bestowing her affections on another individual when the offer of our bashful friend came to her through her much respected friend, the minister. There seemed to her to be a want of some element in the new aspirant's character to allow so much of proxy in such an affair; still, trusting to the superior wisdom and advanced years of Mr. N., she bade adieu to her former satellite and accepted the ministerial proposal. All went on smoothly, and the wedding day drew near.

I said all went smoothly, but there was one change in the quiet household. She who had made herself so useful in that lonely house, Priscilla, the orphan, had gone to a neighboring village to drown among the cares of a little school her sorrows.

Phineas leaves the paternal mansion on his first journey with a gloomy heart, and painfully conscious of having in his possession a marriage certificate, and in his carpet-bag a new suit of clothes, starts for the home of his beloved, for the wedding day has come. As he passes by the village where now lives Priscilla, he thinks how much pleasanter it would be if he were coming to take her home again to that little corner of the sitting-room which she had made her own, instead of going in search of a new face. He never had wondered why she had gone at all.

It is difficult for us in this age and region of weddings to believe that a person could have been in existence as long as Phineas had and never been to a wedding; yet so it was. There was little marrying and giving in marriage in the retired place of his home, and he had slighted even his few opportunities. He knew there was a minister and a certificate, but there his knowledge ended. So, having arrived at his destination somewhat after the promised hour on account of various accidents, he thought to save time he would go to the clergyman himself, and that being accomplished, go and greet his wife. He happened to have a message from Mr. N. to a brother minister in this town and, armed with certificate and carpet-bag, he hastens to put his bright thought into execution; finds the person whom he seeks at home, and having delivered the message, announces the fact that he wishes to be married.

"I should be most happy to officiate on the occasion."

Encouraged by this remark, Phineas hands his certificate to the clergyman, who, looking it over, asks at what hour his services will be required.

"Now, sir, if you please," answers the impatient Phineas.

"Then I shall be obliged to refer you to someone else, since I have an engagement which will prevent my accompanying you."

Phineas, growing desperate, says that "it will suit him just as well here as anywhere else, that he is in much haste, having never seen his wife, and had come here on his way to save time." The truth flashed upon the amused listener, who explains to the discomfited lover that a bride as well as a bridegroom must be present. He waits only to say, "Why, I though if I brought my certificate you did not need her," and hastens with redoubled eagerness to reach the home of his fiancee.

We will not go with him. Pity for his misfortunes draws us back, but we can imagine his dismay when he found that his beloved, all things being ready, clergyman waiting, company assembled, hour past, and no bridegroom at hand, had, knowing him only through a third person, supposed him false, and had then and there restored her love and given her hand to her former lover, who had reached such a state of calmness as to be about to act as groomsman on the occasion of her marriage to Phineas. The glimpse which she had of her almost husband as he made his sudden exit did not cause her to regret the exchange.

As our hero was returning uncomfortably home it seemed to him expedient to stop and see Priscilla, thinking that a few kind words from her would prepare him the better to meet his expectant mother. When poor Priscilla saw him approaching her home, she thought he had come for her to go and welcome his new-found wife, and little was she prepared for the abrupt, yet to her, welcome greeting of our honest Phineas:

"Priscilla, won't you go home with me? I can't go home without *any* wife, and why won't you do as well? for you know the ways of the house, and we can all *settle down.*"

Had Priscilla ever read a novel, she would have expected some falling upon the knees, or at least one kiss; but she would have waited in vain. Phineas never kissed his mother; why should he his wife?

Should any desire to know the after fate of our humble friend Phineas, I can show them at any time the house where dwell Phineas Foster, his wife Priscilla and his mother, now no longer burdened with anxiety lest her son shall be the first old bachelor in her family.

An Electrical Elevator.—Dr. Siemens, who appears to be indefatigable in seeking to extend the sphere of usefulness of electricity, has brought out an electric elevator, which he has been exhibiting at Mannheim, Germany. Its construction appears to be simple, and suggests an easy method of putting in safety brakes. The cage is carried by wire ropes, having counter-weights, so that the cage, when loaded, is practically in equilibrium. The current generator at the base is electrically connected to the dynamo-machine in the cage, and the latter actuates two toothed wheels, taking into a metal rack running up the center of the passageway of the lift.

COMPLETION OF THE NEW RAILROAD.

An event of more than usual interest was consummated in rather a quiet way on Tuesday, the 8th inst., namely, the union of the rails of the Southern Pacific railroad with the Atchison, Topeka & Santa Fe railroad. The approaching completion of a second trans-continental railroad through a section of country rich in mineral resources, and on a parallel of latitude that exempts the new road from the heavy snow storms which so often embarrass the operations of the more northern and hitherto only rail route across the country, had been watched with much interest by the people of this State, who are now to be congratulated upon their increased railroad facilities. The southern portion of California has for months been reaping substantial benefits from its railway connections with Arizona, and its present prosperity will be greatly enhanced by the extension of such connection to the East. Arizona and New Mexico are now fair and rich fields for California merchants, manufacturers and producers to cultivate, the careful tilling of which will greatly enrich our State, as well as proving profitable to the individuals who reach out for the newly opened markets.

The following dispatch from Deming Junction, New Mexico, gives a brief account of the driving of the last spike: The Atchison, Topeka & Santa Fe made connection to-day at this point at 3:45, San Francisco time. There were present R. R. Coleman, Manager of Construction of the A. T. & S. F. R. R.; A. Longstreet, of the Southern Pacific; J. H. Bates and J. F. Kilalea, of the same, and others. The silver spike was driven at 3.45 by the above-named gentlemen. Engineer O'Neil, of engine 503, Atchinson, Topeka & Santa Fe, ran the first engine from the Atchison to the Southern Pacific road. There was no further demonstration. Through mail and postal facilities have all been arranged. The first through train will leave San Francisco at 8:30 on the 19th, and make the trip through to Deming Junction in 60 hours. It was generally understood that the Presidents of the two roads would be on the ground at the union to-day. The following congratulatory telegram was sent by Governor Fremont and the Arizona Legislative Assembly: Prescott, March 8th.—The congratulations of the eleventh Legislative Assembly of Arizona are tendered to the Atchison, Topeka & Santa Fe and the Southern Pacific Railroad Companies, upon the junction of their roads, an event which will mark a new era in the prosperity of our Territory, and which gives a second great transcontinental route for the trade and travel of the world. Signed, J. C. Fremont, Governor; Murat Masterson, President of the Council; J. F. Knapp, Speaker of House.

WOOD RIVER.—We take the following items from a letter to the Salt Lake *Tribune:* The winter is but half over and our communication with the outside world is open by way of Blackfoot. Mails are as regular as clockwork—six times per week to all points on the river. The snow fall at Bellevue this winter has been about 75 inches on the level. The Wood River mine owners of late are greatly pleased to learn of the new discovery in the Maud May, in Green Horn gulch. This property is owned by some New York men, who have kept two Utah miners at work this winter on the same. Ten or twelve days ago they came back very much elated over the fine appearance of the mine. They had, as they reported, followed down with their shaft on the hanging wall for over 230 ft. without finding any regular body of mineral. One of the party made a suggestion to cross-cut the lead, which led to the discovery of a body of galena and carbonates over five ft. in thickness, assaying over 100 ounces in silver, and very rich in lead. The ore lays on the foot wall in a lime formation.

MINING IN MEXICO.

A correspondent writing to the Leadville *Circular* from Alamosa, Sonora, Mexico, says: The climate is magnificent for seven months in the 12, and we have four or five months of pretty hot weather, but can stand that better than the cold and snow. To-day the thermometer in my room stands at 58°. It ranges right along from 58° to 64°. We have occasional winter rains besides the regular rainy season, so that everything looks fresh and green. It is a country of endless resources. Everything grows here from coffee and sugar cane to Indian corn, and of the latter they raise as high as three crops a year. As for the mines, I think it is the coming country. You know better than I the amount of attention Mexico is attracting in the United States. The country is overrun with experts and agents, from Clarence King down to many not so well known. Much property is being picked up, and American capital is pouring in rapidly. If care is exercised in the purchase of properties, I see no room for failures, as good mines are plenty, mines that have produced their millions, worked in the crudest manner. It is easy to arrive at actual facts about the production of various mines, as the bullion pays a coinage tax, and the mint records show the figures. I suppose that more or less bullion is smuggled out of the country, so that a person taking the mint returns will come under rather than over the fact.

There are many desirable features of working here, and one of them is cheap labor. We utilize lots of Indian labor at 50 cents a day, and get the work as well done as you would pay $3 a day for in Leadville, for nothing but main strength and awkwardness is required. They do as well as anybody, and even in the mines I have a lot of "teniteros" who get 75 cents a day, and they can strike a drill as good as any man you ever saw; so, you see, by putting one of these men with an experienced white miner how much it reduces the average expenses.

NEW MINING REGIONS.

It looks now as if in addition to the rapidly increasing tide of travel to Arizona and New Mexico, there will be an excitement northward, and Alaska and Idaho will also increase their population by several hundred miners. The Wood River country in Idaho is attracting great attention, and already many miners are preparing to go there as soon as the weather will permit. The winter has been a rough one there. The snow fall at Bellevue has been so far almost 75 inches on a level. At Ketchum there was 150 inches. Most glowing accounts of the richness of these mines have appeared from time to time, and during the winter many strikes have been made which appear to sustain the opinion that the camp will be a permanent and rich one. The Smoky district, which is in the Wood River country, is also attracting attention. In the Saw Tooth district in the same region, most encouraging results have attended the operations.

The recent reports from Alaska have attracted toward that Territory a great deal of attention. We have heard of the organization of several prospecting parties who are going in that direction. We gave in a recent issue of the PRESS quite an extended account of the late discoveries in Alaska, written for us by Mr. Pilz—who, by the way, the compositor named Mr. Bilz. This is the most extended account we have seen. It must be remembered, however, that there was previously an excitement, and men were sent up last year to work the Henrietta ledge five miles from Sitka, but on arriving, found there was "no money in it." They returned to San Francisco by the next steamer. But just after this a party employed by Mr. Geo. E. Pilz returned, and brought the rich free gold quartz which he described in his letter. This renewed the excitement. The mines are on the mainland to the eastward of Douglass island, Stephen's passage. A number more men were sent out, and they found at an elevation of about 1,500 ft., embedded between secondary granite and basaltic rock, six true lodes of auriferous quartz carrying galena and black sulphide of silver. A river cuts completely through the lodes, and prospecting in its bed yielded from 50 to 80 cents a pan, promising rich placer mines. The lowest assay of the quartz was $150 in gold a ton, and several reached as high as $3,500 a ton.

VENTILATE YOUR CLOSETS.—Soiled undergarments or the wash clothes ought not to be put into a closet, ventilated or not ventilated. They should be placed in a large bag made for the purpose, or a roomy basket, and then put in a well-aired room at some distance from the family. Having thus excluded one of the fertile sources of bad odors in closets, the next point is to see that the closets are properly ventilated. It matters not how clean the clothing in the closets may be; if there is no ventilation that clothing will not be what it should be. Any garments after being absorbed for a while will absorb more or less of the exhalations which arises from the body, and thus contain an amount of foreign—it may be hurtful—matter which free circulation of pure air can soon remove.

FOR CLEANING KID GLOVES.—Get one quart of deodorized benzine, one drachm of sulphuric ether, one drachm of chloroform, two drachms of alcohol. Pour a little of this into a clean bowl, and wash the gloves in it as you would wash anything. After the dirt is nearly out, rinse in more of the clean fluid. Usually one rinsing is enough, but if the gloves were very much soiled, rinse the second time. If the gloves are of cheap kid, it is best to dry them on the hand, but a nice glove, after having been rubbed with a soft cloth to smooth out wrinkles, may be hung on a line to dry. This preparation is an excellent thing to keep in the house, not only for cleaning gloves, but for taking out grease spots from clothing and carpets, and for sponging coat collars and felt hats.

A SOLDERING fluid which does not occasion rust is prepared in the following manner: Small pieces of zinc are immersed in muriatic acid and left in it until the acid is saturated with it, which may be known by the cessation of ebullition of the acid, and also by the zinc, after that stage, being left undissolved; add spirits of ammonia, about two-thirds of the quantity of the acid; thin with a little quantity of rain-water. When, at the time of adding the zinc, if the muriatic acid is heated to a low degree, the solving of the zinc will be achieved sooner. This fluid does not cause rust on iron or steel, and is excellent for all purposes, even for tinning.

PURIFYING A WELL.—A correspondent of the *Inter-Ocean*, living in Battle Creek, Mich., says that he purified his well of water, which was so subject to many worms, bugs and other insects as to render it almost unfit for drinking, by placing in the well a couple of good-sized trout. They have kept perfectly healthy, and have eaten up every live thing in the water; in the winter season crumbs of bread or cracker are thrown in. The water is perfectly pure and sweet.

TO MEND BROKEN CROCKERY, use lime and the white of an egg. Mix only enough to mend one article at a time, as it soon hardens and cannot be used. Powder a small quantity of the lime, and mix to a paste with the egg. Apply quickly to the edges, and place firmly together. It will soon become set and strong, seldom breaking in the same place.

WITHERED LEAVES having the yellow-brown or red autumnal colors can be made green again by steeping them in water with a little zinc powder.

ALARMING INCREASE OF INSANITY.

BY WILL L. WADE, M. D.

The statistics of insanity for the last fifty years, show a remarkable increase of the number of insane persons. This is found to be the case in almost every civilized country in the world, and notably so in those countries where the highest type of civilization is supposed to prevail. The United States, Great Britain, France and Germany, report the greatest number to each million inhabitants, and also the greatest increase of percentage. To know a fact is one thing—the next is to seek the cause. That there is a definite, tangible cause, perfectly capable of being traced out, and proven equal to the production of the given effect, seems as plain to the writer, as any proposition within the range of human reason. The countries named do the greater part of their intellectual work of the world. Their authors, scientists and philosophers, occupy the foremost ranks, and have given tone to the literature of the world. If this high culture was the cause of the increase of insanity, we would naturally look for a large percentage of cases among the leading thinkers of the age, but careful inquiry reveals nothing of the kind, but an exactly opposite condition of affairs. We might count on our fingers all the leading literary or scientific men who have become insane during the last ten years. A visit to any large asylum, or an examination of the cases which pass through the hands of examiners for committal, will fully demonstrate the fact that intemperance, idleness and isolation cause many more cases of insanity than solid thinking. Intemperance in the use of intoxicating drinks and tobacco, are responsible for probably one-third of all the cases in existence. Speculation, with its attendant successes and failures, is another large factor in our estimation of causes. A solitary life, especially if the surroundings are gloomy or depressing, has stood in close causative relation to a large number of cases. Trappers, herders, miners and farmers wives, in many instances, lead lives of a monotonous character—with external influences wholly devoid of any pleasant suggestion. This is especially true during the "rainy season," on this coast, when enforced idleness and want of cheerful companionship, unite with gloomy weather, to depress a system perhaps already enfeebled by disease.

When we come to sum up these various influences, intemperance, speculation and solitary living, we can see why the Pacific coast should show a large percentage of insanity, and why that portion should increase rather than diminish. A late report from the state of Massachussetts, assigns intemperance as the cause of one-third of the insanity in that state. The attention of physicians has been particularly drawn to beer drinking, and the opinion is gaining ground that in some way, it stands in a peculiar relation to the causation of insanity. This may come from two causes, either the overloaded condition of the blood vessels caused by the habit, or from the influence of various substances used in "*doctoring*" the beer.

That people who are temperate in their habits, and take proper care of themselves, seldom become insane, is a well known fact, and this is true even where the influence of heredity is a factor. Insanity is as much a disease as epilepsy, or typhoid fever, and is, in most cases, more preventable. Persons who are conscious of inherited tendencies can, in almost every instance secure perfect immunity from this disease by carefully observing hygienic laws, and avoiding excitement of all kinds. Obedience to the plainest and best known truths of physiology would in a few years reduce the occurrence of insanity on the Pacific coast fully fifty per cent.

THE COLUMBIA RIVER.

Rising in British Columbia, in latitude fifty-three degrees and twenty-five minutes, north, it flows southward for six hundred miles, through the eastern half of Washington Territory, to latitude forty-six degrees, where it turns westward, flowing in this direction for three hundred miles, emptying into the Pacific ocean in latitude forty-six degrees and fifteen minutes. For more than three hundred miles it forms the boundary between Oregon and Washington.

It is navigable at all times, for ninety-five miles from its mouth, to vessels of eighteen feet draught, and for nearly three hundred miles more for boats drawing six feet. Its largest tributaries, the Willamette and Snake, are also navigable for river steamboats—the former for one hundred and seventy, the latter for one hundred and sixty miles. It discharges annually almost as much water as the Mississippi at Vicksburg. Its width, for one hundred and fifty miles from the sea, is from half a mile to two miles.

Ships drawing from eighteen to twenty-two feet ascend the Columbia and Willamette to Portland, the principal depot of the Northwestern coast, one hundred and ten miles from the sea. Ten years ago vessels drawing more than twelve feet could not reach Portland during very low water. The present depth has been produced by the work done by the government, under the charge of the U. S. Engineer Corps, such as dredging, scraping, dams and jetties.

It is not only as a navigable stream, one of the finest in the world, that the Columbia is valuable. Its banks generally present a natural pathway for a railroad, with easy and almost continuous descending grades in the direction of the heaviest traffic, furnishing outlet for the wonderful agricultural wealth of Eastern Oregon, Washington and Idaho. One, perhaps both, of the transcontinental railroad, now building, and soon to be completed, will run along the banks of the Columbia from the mouth of Snake river to Portland.

When it is remembered that the soil of the Pacific Northwest yields in cereals, vegetables and fruit, almost double as much, on an average, as the other portions of the Union; that the finest timber for useful and ornamental purposes exists here in almost inexhaustible quantities, as well as coal, iron, and the other useful and precious metals; that the crops never fail; that the streams and bays are filled with fine salmon and trout; that our climate is free from severe storms and extremes of temperature, and pleasant and healthful; in short, that this section of the Union can support in health and comfort a greater number of human beings per square mile than any other, and is more desirable as a home than almost any other part, owing to the mild climate and pure atmosphere; there is no doubt that the first railway which reaches the valley of the Columbia from across the continent, will bring a tide of immigration which will soon spread over and fill our beautiful plains and valleys, even to the ravines in the foot-hills of the mountain ranges.

THE SHEEP QUESTION.

The loss to wool-growers throughout the entire state, but more especially in Eastern Oregon, during the past winter, goes pretty far to establish the stubborn fact that sheep will not keep themselves. They must be fed and housed through the snowy weather or they will not see the spring days when the willow-buds turn yellow and the frogs establish their annual orchestra in the creek bottoms.

A great deal of this loss arises from neglect, some from actual misfortune that no good judgment could have averted, and a little more from aping the California custom of shearing twice a year. That won't do for any portion of the coast, north of Red Bluff, nor east of Honey lake. The staple produced by semi-annual shearing is too short to be marketable, even granting that the process did not endanger the life of the quadruped. And we attribute the superiority of Oregon blankets over those made in California to the fact that they are made from longer fiber, which results from shearing but once a year.

The turning point in stock-breeding in Oregon cannot be very far off. A man must aim to live by intelligent and well-directed labor in connection with his herds and flocks, rather than by the spontaneous increase of dumb brutes. In England, the sheep are fed on turnips, the fatter muttons being turned into the field in October and allowed to nibble the roots down level with the earth, after which they are driven into another field and the stock sheep assume their places. This being done, a laborer comes along with a fork on the end of a pole and pries up the rest of the root from the ground. Portions of the crop are harvested for the winter also and, when chopped with wheat straw, fed in tubs to the sheep which are housed in their comfortable huts.

This is what they will have to come to in Oregon, especially eastward of the Cascade range. The bunch grass pastures are pretty well eaten out and those who calculate to winter sheep in that section will have to provide shelter and food for the sheep. Huts should be built on the hill side so as to give drainage through the floors, and ten acres planted in turnips will feed two thousand sheep through at least ten days of deep snow. This will pay as well as wheat at forty-five cents per bushel, which is the average price at nearly all the towns above Walla Walla, for the man who shears his wool and sells his mutton sheep, escapes a thousand little items of expense which fall upon the wheat grower.

Bunch grass pasturage, after September, is a thing of the past, so far as the hillsides of Eastern Oregon are concerned. From April to August the sheep can run at large in the hills, but after that they will need close herding and more or less feeding. The result of this will be that men who keep sheep at all will keep smaller herds and be content to put in a little grain and a good kitchen garden. The tramping fellows who now herd their scabby bands upon government lands, rather than settle down and become permanent settlers in one locality, will be driven across into Idaho and Montana, while Oregon gains in their stead a more desirable element of population.

MANNERS AT THE TABLE.

A meal hastily and untidily served, and presided over by a slatternly woman, is positively demoralizing in its influence upon the members of a household. It engenders a lack of politeness and general bad manners at the table. Are parents less careful in teaching their children good manners at the table than they were years ago? It is not uncommon to see children, from the oldest to the youngest, reach across the table and help themselves, instead of politely asking for what they require, and waiting patiently till it can be served. Some children seem to prefer to get their food in a rude manner. If they cannot reach it, they stand on the rounds of the chairs to be able to stretch farther, or leave their chairs and go round the table for what they want. They eat fast, drink fast, and fill their mouths so full and so rapidly, that if not choked, the wonder is that half the children do not die of indigestion. There are many ways in which children can make themselves offensive at the table, if not checked in time. Then why should not parents begin early to teach their little ones to eat slowly, without any noise, to fold their napkins, to lay their knives and forks on their plates in the proper position, side by side, instead of having them on the table-cloth, or thrown carelessly on the plate? Why not teach them to sit quietly, instead of moving restlessly about, disturbing the comfort of others? If this was only one of the little things which belong to early childhood, and which might pass off as they grow older, it could be endured. But rough, rude, ill-mannered children, seldom make refined, courteous, respectful men and women; and if of a proud, sensitive nature, and quick to observe, they will, while recognizing their deficiencies, shrink from being in society, and become awkward, ill-tempered and morose men and women.

A HOUSE OF YOUR OWN.

When a man contemplates building a house of his own, he makes a mistake in relying upon his own judgment. What does a man know about building affairs unless he has given the matter especial study? Some people will say that for an ordinary dwelling it is only necessary to employ a builder, but it must be remembered that a builder is not an architect, and knows nothing beyond the mechanical system of his trade; and the public are ofttimes very ready to take their education in architecture from the village carpenter, simply because it is cheap, and the carpenter, of course, wants work, and does not want any one stepping between him and the owner, so that he can have the work, in a pecuniary light, all to himself. A good architect consults the wishes of his employer, and makes his plans in accordance with them. Of course, every one has his peculiar wishes to be provided for, and all these should be presented to the architect before he commences the design. Architects have their own ideas as to what form the building ought to take, and should be allowed to use their own cultivated taste, which it has taken years of constant study to acquire, and this should not be thrown away for any momentary caprice, which the client would be sorry for in the end. Amature architecteur does not pay in any sense.

Did any scientific physician know the formula from which Ammen's Cough Syrup is prepared, he would not only recommend, but prescribe it to his patients troubled with a cough or cold, or any disease of the throat or lungs. Try it. It has no equal. For the benefit of those who would say, "Another humbug," a 15-cent trial size is prepared. Ask your druggist to get it for you. In bottles at 15 cts., 50 cts., $1.

NEW MARKET THEATER BLOCK.

On page 63, of this issue, we present a fine engraving of this block, located on First street, between Ash and A streets, in the center of the wholesale trade of the metropolis of Oregon. This splendid structure was erected by Captain A. P. Ankeny, is valued at $250,000, and would be a credit to any city of our great commonwealth. The block is now owned by Messrs. Thompson, Burrell & Co.; the senior member of the firm being ex-Gov. D. P. Thompson, the present mayor of Portland, and the other members being among the most enterprising of our citizens. This block is the longest one in the city, being in fact a double block, and the area covered is a fraction over one and a half acres.

In this structure, we find the New Market Theatre, the most elegant audience room in the northwest, and now under the management of Mr. F. W. Stechhan, who gives promise of making it one of the leading dramatic resorts of the Pacific coast, by catering to the public taste with the best talent of the United States, regardless of expense. The market extends from First to Second street, on the ground floor, and is arranged for dealers after the most approved plans, and when the city reaches a point in its population to fill its spacious stalls with the products of the valley, it will equal in display some of the famous markets of the Atlantic and Southern states.

The Western Union Telegraph Co., Northwestern Telephone Co., and Wells, Fargo & Co. have offices in this block, as well as many of the leading insurance companies of the United States.

The Merchant's Exchange Association rooms are located in this block and under the care of our leading commercial men is, as an organization, keeping the best interests of our city before the commercial world.

Wm. Pfunder's laboratory and manufactory for prepared medicines from Oregon herbs, occupy a prominent place in the block, and his drug store is one of the neatest and most artistically arranged in the city. Mr. Pfunder, besides rendering the public at large valuable services by furnishing them with reliable and safe medicines, has, by liberal advertising, in various portions of the United States, done good work in bringing the name of this state prominently before the reading public.

P. W. Gillette, real estate agent, a reliable and enterprising citizen, of twenty-nine years' standing in this city, has a handsome office in this block. Mr. G. has been in the real estate business for the past thirteen years, and thoroughly understands the market. Those seeking investments will find a consultation with Mr. Gillette of immense benefit.

The whole structure is filled with stores, offices, etc., and is really a human bee-hive during the busy hours of the day.

CORVALLIS BUSINESS HOUSES.

In our last issue we gave descriptive illustrations of scenes in Benton county, and of buildings in Corvallis, the shire-town. We now annex notices of a few of the leading business establishments of that beautiful city—located as its name implies in the "heart of the valley."

GRAHAM, HAMILTON & CO.,

This establishment deals largely in drugs, books, stationery, lamps, oils, wall paper, paints, etc., and is, in point of fact, one of the largest houses of the kind in the state, outside of Portland.

M. S. WOODCOCK

Is an attorney at law, who not only enjoys a lucrative practice, but is the senior member of the firm of Woodcock & Baldwin, dealers in stoves, sheet iron, pumps, etc. Mr. Woodcock is an old "residenter," having arrived in Oregon in 1853, locating in Benton county in '59 and in Corvallis in 1874.

JAS. A. CAUTHORN.

This gentleman has three warehouses with a storing capacity of 120,000 bushels of the cereal; has been eight years in business and is strictly reliable.

H. E. HARRIS

Does a general merchandise business; he is the oldest merchant in the city, having spent 24 years in trade at Corvallis.

W. C. CRAWFORD

Is a watchmaker doing a large and profitable country and city trade. He came to Corvallis as a student in the agricultural college, from which institution he is a graduate.

E. ROSENTHAL

Has lived in Corvallis five years, and does a thriving trade; he has at all times a complete stock of cigars, tobacco, cutlery, and merchandise in general.

T. J. BLAIR

Has been the proprietor of a large wheat warehouse, with storing capacity of 100,000 bushels, for the past three years; he came to Corvallis in 1854.

H. STOCK & CO.,

Formerly of Portland, drive a handsome and growing trade in general merchandise. They have been residents of Corvallis for several years.

G. HODES

Attends to the gunsmith trade, in which business he has been in at Corvallis since 1857.

JACOBS & NEUGASS,

Are an old and reliable firm, doing a good business in general merchandising.

HENRY WARRIOR

Is in the grocery and bakery business. August Hodes has been his business manager for the past eight years.

S. G. KLINE & CO.,

Have traded with the citizens of Benton county for the past 16 years and do a safe and comfortable business in the general line.

DR. M. HESLOP,

Photographer, formerly of this city, does a good trade and one that is fast building up to more than a competence.

Ammen's Cough Syrup cures coughs, colds, bronchitis and consumption.

Samples of the latest style spring goods are now ready and will be sent free to any of our lady readers who will forward their names to the enterprising dry goods house of J. F. D. Wrinkle & Co., cor. First and Salmon sts. Their importations for 1881 embrace many novelties, and intending purchasers will do well to send for samples and prices at once.

G. Davies & Co., at Seattle, are the Puget Sound agents for leading publishers. They are, therefore, in receipt of the very latest publications ahead of any other establishment, and having special arrangements are enabled to supply purchasers at very low rates.

I. G. Davidson, the photographer, cor. First and Yamhill sts., Portland, takes all sizes of photographs, in the very highest style of art. For outside views of steamboats, animals, buildings, and interior views of rooms, he has the finest apparatus in the state. Our eastern readers will do well to send to him when they desire fine views of Oregon's most noted scenery,

For the very best photographs, all sizes, styles and prices, go to Abell's gallery, 167 First st., bet. Morrison and Yamhill.

Bow's livery stable, Seattle, is located immediately in the rear of the New England hotel. Travelers, and the public in general, will find this a desirable place to hire teams or riding horses.

Pfunder's Blood Purifier is just the thing to take at this season of the year, when the air is charged with miasma.

OREGON AND WASHINGTON vs. CALIFORNIA.

It may not be generally known to the people of the Pacific Northwest, that a remarkable change is taking place in the agricultural affairs of California, and a change which augurs much good to the people of Oregon and Washington Territory. Within the past two years, Californians have discovered the fact that their state is not the only wheat growing country this side of the Rocky mountains. Indeed, they are beginning to realize that they cannot, in the future, successfully compete with Oregon and Eastern Washington in the great cereal producing industries of the Pacific coast. We believe we are justified by facts in making the assertion that, while the acreage for wheat alone is steadily on the increase in Oregon and Washington year by year, it is actually diminishing in California. Now this may appear to be a sweeping declaration, and to many it would seem impossible; but let us give a few items in regard to the general situation of agricultural interests as they exist to-day, in California.

Many farmers there who have been large grain producers during recent years past, are becoming seriously alarmed at the stupendous shipments of wheat from the Columbia and Willamette valleys. Recent failures of crops on account of continued drought have disheartened them. Thousands of acres of excellent wheat lands have been rendered worthless for agricultural purposes through and on account of the terrible "debris nuisance." Owing to the increased difficulties and perils of inland navigation, high steamboat freights are becoming serious drawbacks to the farmers who have heretofore realized good profits on their grain crops. Large operators, by hypothecating their prospective crop proceeds are deeply involved, if not hopelessly bankrupt, while the capitalist, who loaned them the money are little better off; much of last year's crop being still in the warehouses. And finally we add that, on account of the scarcity of proper sea-going craft, ocean freights are ruling high. There are now 450,000 tons of California wheat stored at various points, awaiting removal to foreign ports, which will inevitably remain over to be shipped abroad with the new crop, solely for the want of vessels to carry it away.

So might we go on, citing other evidences to show that there is a manifest decline now taking place in the cereal producing enterprises of northern, central and eastern California. It will not appear so strange, then, when we say that, in many districts once famous for their large wheat crops, much good land will remain in a fallow condition during the coming season.

But there is one abiding consolation left for the farmers of California, and that is the raising of fruits and vegetables. Very few of the circumstances we have mentioned as being so detrimental to the grain interests have anything to do with the fruit and vegetable producing industries. These things bring quick returns, and, as a rule, much larger profits. From the Sacramento valley to Los Angeles county, the whole country can be made available for orchards, gardens and vineyards.

California has won an enviable fame abroad for her luscious semi-tropical fruits; a fame which is second only to the renown of her gold fields and other mineral products. The decline in the grain interest has very naturally led the land owners of the Sacramento valley and Bay counties to turn their attention to a renewal of the fruit culture, and if reports can be depended upon, the present year will be a marked era in this enterprise.

So great has been the call for young trees that California nurserymen find their stocks entirely exhausted and they are now supplying their customers as well as they can from eastern dealers, together with what can be had from Oregon. Peaches, pears, apricots, prunes and plums are in great demand. Many ranchmen are turning their grain-fields into orchards and gardens, and the canning business promises to be lively during the coming Summer and Autumn.

Let farmers in Oregon and Washington stick to the plow, the harrow, the reaper and threshing machine. We are not afraid to place the prediction on record, that the Pacific Northwest is destined to become the granary of the whole coast. Let our agriculturists make a note of this, and ponder well the lesson it inculcates. It is a fact, that eastern Oregon and Washington are even, so far ahead of California as grain producing districts, that no adequate comparison can be instituted concerning their relative merits.

Our counsel for all is, study well your own peculiar appliances and facilities and use them to the very best possible advantage of everybody concerned. Above all else, let northern farmers live within their own resources so that they shall never become, like many of their California brethren, hampered, nay, bound hand and foot, by debt. Let no man think he is doing a nice thing by mortgaging his grain crop simply to extend operations. It were far better to cultivate well twenty, forty or fifty acres till his clear proceeds will enable the small farmer to double his acres. Let log cabins, too, suffice until more pleasant homes can be owned in fee simple.

It costs little or nothing to give or take good advice, but the question as to whether it be heeded or rejected often involves serious consequences.

PLEASE STOP MY—WHAT?

"Times are hard, money is scarce, business is dull, retrenchment is a duty; please stop my—"

Whiskey?

"Oh, no; times are not hard enough for that, yet; but there is something else that costs me a large amount of money every year, which I wish to save; please stop my—"

Tobacco, cigars and snuff?

"No, no—not these; but I must retrench somewhere; please stop my—"

Ribbons, jewels, ornaments and trinkets?

"Not at all; pride must be fostered, if times are ever so hard; but I believe I can see a way to effect quite a saving in another direction; if you please, you may stop my—"

Tea, coffee, and needless and unhealthy luxuries?

"No, no, no—not these; I cannot even think of a sacrifice; but I must think of something else. Ah! I have it now; my paper costs sixteen cents a month; two dollars a year; I must save that. Please stop my paper. That will carry me through the panic easily! I believe in retrenchment and economy, especially in brains."

A place for everything, and everything in its place—the baby's mouth.

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

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And His Diseases,

—BY—

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AN INDEX OF DISEASES,

Which gives the Symptoms, cause, and the Best Treatment of each; a table giving all the principal drugs used for the Horse, with the ordinary dose, effects, and antidote when a poison; a table with an engraving of the Horse's Teeth at different ages, with rules for telling the age of the Horse; 65 engravings showing the important points in the structure of the horse, also illustrating positions assumed by sick horses in different diseases. A valuable collection of receipts, many of which would cost a horse-owner three to five dollars each.

Every Farmer

SHOULD OWN THIS BOOK.

Thousands who have seen it commend it, and many good horsemen have extolled it in the highest terms, even stating that they prefer it to books which cost $5 to $10.

Do not throw away your money in the purchase of costly books on the Horse, which are so full of Latin phrases and technical terms as to be unintelligible to the average reader, but

BUY KENDALL'S TREATISE,

A book of 100 pages, in paper covers, giving you more practical information than is contained in some large volumes at far higher cost.

Having examined this book thoroughly, we are satisfied no

HORSE-OWNER

Would hesitate a moment about investing 25 cents in its purchase, if he did but know the value of its contents. Recognizing the desirability of having such practical information as our farming friends daily need in their business, provided at reasonable cost instead of being obliged to pay the enormous profits demanded by the Publishers of most Agricultural books, we have secured

SEVERAL HUNDRED COPIES

Of this valuable little Treatise on the Horse, single copies of which we shall be pleased to mail to any reader of this paper, postage prepaid by us, on receipt of

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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 is 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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Board per week $4; Board per week, with Lodging, $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.

KENDALL'S

SPAVIN CURE.

The Most Successful Remedy ever discovered, as it is certain in its effects and does not blister. READ PROOF BELOW.

From Rev. P. N. GRANGER,

Presiding Elder of St. Alban's District

ST. ALBANS, VT., Jan. 20th, 1880.

DR. B. J. KENDALL & CO., Gents: In reply to your letter I will say that my experience with Kendall's Spavin Cure has been very satisfactory, indeed. Three or four years ago I procured a bottle of your agent, and with it cured a horse of lameness caused by a spavin. Last season my horse became very lame and I turned him out for a few weeks when he became better, but when I put him on the road he grew worse, when I discovered that a ring-bone was forming, I procured a bottle of Kendall's Spavin Cure and with less than a bottle cured him so that he is not lame, neither can the bunch be found.

Respectfully yours, P. N. GRANGER.

Statement Made Under Oath.

TO WHOM IT MAY CONCERN.—In the year 1875 I treated with Kendall's Spavin Cure, a bone spavin of several months' growth, nearly half as large as a hen's egg, and completely stopped the lameness and removed the enlargement. I have worked the horse ever since very hard, and he never has been lame, nor could I ever see any difference in the size of the hock joints since I treated him with Kendall's Spavin Cure.

R. A. GAINES.

Enosburgh Falls, Vt., Feb. 25, 1879.

Sworn and subscribed to before me this 25th day of February, A. D. 1879.

JOHN G. JENNE,
Justice of the Peace.

Price, $1 per bottle, or six bottles for $5. All Druggists have it or can get it for you, or it will be sent to any address on receipt of price by the proprietors.

B. J. KENDALL & CO.,
Enosburgh Falls, Vermont.

Crane & Brigham, Agents,
San Francisco, Cal.

A VALUABLE INVENTION.—One of our British Columbia neighbors, Mr. James Cameron, of Victoria, has just invented and patented a "Self Counting Egg Packer," which, for compactness, durability and cheapness, surpasses anything now in the market. An enterprising carpenter, who would secure the right to manufacture them in Oregon, could clear a handsome sum of money in a short time.

PRACTICAL AZALEA CULTURE.—A beautifully printed, profusely illustrated and well bound little volume of one hundred and ten pages, bearing the above title, has reached us. It is the production of Robert J. Halliday, Esq., Baltimore, Md. Every page of this work teems with valuable information for those who cultivate that most beautiful of flowers, the azelea. The price of this little volume is $2.00. "Camelia Culture," a companion to this work, by the same author, is also sold at $2.00, and has been noticed in a previous number of the WEST SHORE.

PURE SHERRY WINE.

ITS HEALTHFUL EFFECT.

Sherry wine, that is sherry wine, (not bogus, as is four-fifths sold for sherry,) is one of the most healthful wines, and has prolonged the life of many an invalid, and, doubtless, has eradicated many consumptions. The grape saccharine in it is fattening. The small proportion of pure alcohol is food and fuel for the decaying system of invalids. And why sherry—real sherry—is so healthful is, that in its manufacture, the fusel oils are eradicated. A genuine sherry is produced by the process of 90 days baking in crucibles at a heat below that of boiling heat; is watched night and day. This long baking process eradicates the fusel oils and leaves it free from all which is in the least degree injurious. Over quantities may stimulate, but it is not injurious. Many consumptives, in the incipient state, have, without any doubt, been saved simply by the use of genuine sherry wine. But four-fifths of the wine sold for sherry is simply white wine, boiled about twelve hours to give it the burned taste and burned sugar for coloring, and then sold at an under price as sherry, while it has no real property of sherry in it. A real sherry means a wine with the fusel oil eradicated, and to do this perfectly, three months' baking is required. Experience has proven that two months will not do it. A boiling process has no beneficial effect. It serves to give it the burned taste, aids a deception with merely no cost, while there is no sherry in it. The St. Helena Amber has the same property and value as the sherry wine

Jacob's Fever and Ague Cure, the advertisement of which will be found on page 85, is a truly wonderful medicine and will do all the manufacturers claim for it, namely: eradicate every time, without fail, that scourge of diseases, chills and fever. Among numerous high testimonials, we notice one from A. F. Gunn, Esq., of Cunningham, Curtis & Welch, San Francisco, a most reliable gentleman, and favorably known to all purchasers of paper and printers' stock. He states that after suffering with ague for five months, he was completely cured in six days by this medicine. Coming from such a source, it may be considered a flattering testimonial indeed.

A new harness and saddlery store has just been opened at The Dalles, by W. J. Strong & Co. Mr. S. is a former resident of this city, thoroughly understands his business, and we take pleasure in recommending him to our readers in Wasco Co.

GUNS!

The Largest Stock,
Best Assortment,
Lowest Prices. Send for Price List No. 4.

"FISHING TACKLE."

An Immense Stock just received, consisting of

RODS, REELS, FLIES, LINES, HOOKS, Etc.

Orders by mail promptly filled.

SPAULDING'S BASE BALLS FOR 1881.

Sample by mail, $1.25.

WILLIAM BECK & SON,

165 and 167 Second St., bet. Morrison and Yamhill, Portland, Or.

Scheffler's St. Helena, California,

Sanitary Vacuum Distilled Grape Brandy and Pure Wines.

Recommended as Superior by the Medical Fraternity of California.

Sold by nearly all Druggists in California, Oregon and Washington—and are eagerly sought after by agents from England and Germany.

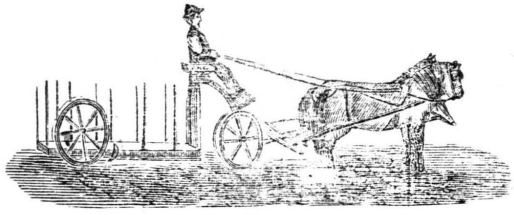
From the Daily Oregonian, Oct. 9th, 1879.

Mr Geo. H. Beach, agent for Wm. Scheffler's Wines and Brandy, has on exhibition at the State Fair, samples of these articles which have been tested by a number of our connoiseurs in such things, and the unanimous verdict is, that for purity, flavor, and general excellence, none surpass them. Mr. Scheffler takes **First Premiums** on all his wines, and on his Vacuum Distilled Grape Brandy, with high encomiums. Not only by the committee, but by outside judges, his Brandy and Wines are pronounced really superior to the imported.

From the Sonoma, Cal., Herald.

It must be conceded that Wm. Scheffler's Edge Hill Vacuum Distilled Grape Brandy is superior to all other California manufacture, and when better known, and with age, will supersede the best imported brands.

A hundred quotations could be given from California, Oregon, W. T., and Eastern papers equally enthusiastic were it necessary.



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Forwarding, Transferring and Delivering promptly attended to.

Freight and Baggage forwarded and delivered with dispatch.

Furniture moved with eare.

Orders by mail solicited.

Charges reasonable.

Mark care W. H. G.

Office and Residence, No. 74 South Third St., Portland, Oregon.

Leave orders with Goldsmith & Lœwenberg, or, Weeks & Morgan.

Deutsche Apotheke.

Dr. M. MAY,

Druggist and Apothecary,

Corner Union and Second Sts.,

(Near the Postoffice),

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.

THOS. VARWIG,

Plumber, Gas and Steam Fitter,

AND DEALER IN

LEAD AND IRON PIPE,

Copper Bath Tub, Copper Balls, Copper Boilers, Brass Cocks, Closet Bowls, Patent Closets, Marble Basins, Rubber Hose,

No. 73 Washington Street, between Third and Fourth,

Portland, Oregon.

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

JOHN SAUL'S

Catalogue of New, Rare, and Beautiful Plants

Will be ready in February, with a colored plate. Many new and beautiful plants are offered, among Dracænas, Crotons, and other fine foliage plants, with a rich collection of Greenhouse and other Hothouse Plants. Bedding Plants, new and choice Roses, Dahlias, etc. Well grown and at low prices Free to all my customers; to others, 10 cents A plain copy, free. JOHN SAUL. Washington, D. C.

J. G. Durner & Co.'s

POST OFFICE STORE.

For the Largest Variety of Plain and French

CANDIES

Wholesale and Retail,

Opposite Postoffice, Portland, Oregon.

$72 A WEEK. $12 a day at home easily made. Costly outfit free. Address TRUE & Co., Augusta, Maine.

Oregon Railway and Navigation Company.

OCEAN DIVISION.

FOR SAN FRANCISCO.

Steamship Leaves Every Five Days at 3 A. M., as follows:

Columbia.	Oregon.	State California. (P.C.S.S.CO.)
Feb 7	Feb 17	Feb 12
" 22	March 4	" 27
March 9	" 19	March 14
" 24	April 3	" 29
April..... 8	" 18	April 13
" 23	May..... 3	" 28
May..... 8	" 18	May.....13

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, Skomockway, 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, Albany, Corvallis and intermediate points.....	6 A. M	.....	.....	6 A. M.	.....	.....

General Offices--Cor. Front and D Sts.

J. McCRAKEN & CO.,
Agents State of California.

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

JOHN MUIR,
Gen'l Freight & Pass'r agent.

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

THE

Leading Clothiers, Merchant Tailors,

And **Hatters** in Oregon.

Fishel & Roberts,

Cor. First and Alder Sts., Portland.

☞ Nothing but first-class goods sold

And every garment warranted. ☜

TURNER, BEETON & CO.

Wharf Street, VICTORIA,

AND

36 Finsbury Circus, LONDON, ENG.,

Commission Merchants and Importers,

Agents for

Boutelleau & Co., Cognac Brandy,
G. Preller & Co., Bordeaux Claret,
Duff, Gordon & Co., Cadiz Sherry,
M. B. Foster & Sons, London Ale and Stout,
W. Jameson & Co., Dublin, Whisky,
De Lossy & Co., Rheims, Champagne,
L. Rose & Co., London, Lime Juice Beverages,
Etc., etc., etc.

JOSEPH GOSNELL,

Importer and Dealer in

Groceries and Provisions,

Island and Oregon Produce,

Corner of Douglass and Cormorant Sts.,

VICTORIA, B. C.

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

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

JACOB SEHL,

Manufacturer and Importer of all kinds of

Furniture,

Bedding, Mirrors, Picture Frames and Mouldings, Perambulators,

WINDOW BLINDS & CORNICES,

And a full assortment of

Carpets, Oil Cloths, Marbleized Iron Mantles, Etc.

Government St., between Fort and Bastion,

VICTORIA. B. C.

At the London Bazar

On Government St.,

VICTORIA, B. C.

May a ways be found a fine assortment of

Rare Vases, Clocks, and Parlor Ornaments;
Toys, Shells, and Curios,

Just such Goods as vistors from abroad delight in examining.

☞ Callers are made welc me.

THOS. CARRINGTON, Propr.

W. & J. WILSON,

Gove nment St., opposite the Postoffice,

VICTORIA, B. C.

Importing Clothiers
And
General Outfitters.

Established since 1863.

WHALLEY, FECHHEIMER & ACH,

Attorneys at Law,

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

T. N. HIBBEN & CO.,

Victoria, B. C.,

Booksellers, Stationers,

And Agents for

Leading Publishers in England, Canada and the United States,

Receive by every m il their very latest productions of

Newspapers, Magazines and Books.

Also, keep in stock, a full line of

Fine Cutlery, Mathematical Instruments, Albums, Photographs and Rare Prints.

Albion Iron Works,

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Manufacture Steam Engines and Boilers, either high or low pressure, and

GENERAL MACHINE WORK.

Having started a **Stove Foundry** in connection with my works, I am prepared to furnish Stoves, equal in quality and finish to the imported article and at equally low prices.

JOSEPH SPRATT, Propr.

☞ The steamers "Maude" and "Cariboo Fly," leave my wharf for Nanaimo, weekly.

FELL & COMPANY,

Importers and Dealers in

Groceries, Provisions,

FRUIT, ETC.

COFFEE AND SPICE MILLS.

General Italian Warehousemen,

Fort St., Cor. of Broad, Victoria, B. C.

All Shipping Orders completely and promptly filled and delivered per Express Van, Free of Charge.

☞ Always ask for Fell's Coffee at the Mines.

JOHN WEILER,

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UPHOLSTERER,

Dealer and Importer of

Carpets, Oilcloth, Cornices and Curtains, Wall Paper, Window Shades, Hollands, Pictures, Crockery, Glassware, and all sorts of

Upholstery Goods.

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.

Occident Hotel,

New Westminster, B. C.

The only fire-proof Hotel in the city. Pleasantly located and fitted with every convenience for the accommodation of the traveling public. A first-class establishment in every respect.

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DRIARD HOUSE.

The Only FIRST-CLASS HOTEL
In Victoria, B. C.

REDON & HARTNAGEL, Propr's

This House offers special attractions for families and tourists. It is located in the healthiest part of the city, and contains large, airy apartments in suits or singly—whilst the table is unsurpassed by any hotel on the Coast.

"THE ESMOND,"

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J. H. BRENNER, - Proprietor.

Contains all the Modern Improvements.
Bath Rooms, Passenger Elevator,
Large Sample Rooms, etc.
The Finest Dining Hall in the city.
Rates, with Board—$2.00, $2.50 and $3.00 per day.

Curtis C. Strong, M. D.
OFFICE—No. 3, Dekum's Building.
Residence, 225 West Park street.

WISTAR'S BALSAM OF WILD CHERRY

WILL CERTAINLY CURE
Coughs, Colds, Hoarseness, Sore Throat, Bronchitis, Influenza, Asthma, Whooping Cough, Croup, and every Affection of the Throat, Lungs and Chest, including Consumption. Sold by all Druggists.

The White House.

Dry Goods and Millinery
—AT—
WHOLESALE AND RETAIL.
Dolmans, Capes, Walking Jackets,
Etc., in great variety.
LEWIS & STRAUSS,
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The Latest Styles of elegant DRESS HATS can be had only at
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DIAMONDS WATCHES JEWELRY
Silver & Plated Ware
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SAM'L LOWENSTEIN, President. WM. KAPUS, Secretary.

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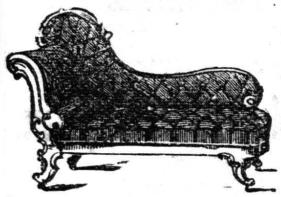
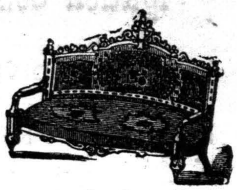


SALES ROOMS,
Cor. First and Yamhill Sts.
Steam Factory,
Corner Front and Madison,
PORTLAND, O.



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Carpets, Oil Cloths, Mats, Rugs, Curtains, Wall Paper, Spring Beds,
HAIR MATTRESSES, &c. &c.

OREGON CARPET WAREHOUSE

WALTER BROTHERS,
Importers and Dealers in
Carpets, Floor Oil Cloths,
Paper Hangings and Upholstery Goods,
85 First Street, and 86 & 88 Second Sreet, PORTLAND.

GREAT REDUCTION
—IN—
PRICE OF CANDIES!

TO THE TRADE:

The constantly increasing demand for our goods during the last year induced us to greatly enlarge 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.
Wholesale Candy Manufacturers and Confectioners, 145 First St.; Factory, 28 Alder St, Portland.

Notice. IMPORTANT TO ALL.

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.

IN CONSTIPATION

THEY HAVE NEVER BEEN KNOWN TO FAIL.

These PILLS are the result of TWENTY YEARS' EXPERIENCE and RESEARCH—are unlike any other pill—entirely VEGETABLE, MILD but PROMPT and EFFICIENT in ACTION; CURE a greater variety of DISEASES, and are, in short, PERFECT IN THEIR COMBINATION AND RESULTS.

Another Recommendation is the Dose:

ONE EVERY NIGHT,

Which, of itself, is enough to commend them to all. A trial will surely convince one of their value and superiority in every respect.

BILLS

AND OTHER

Business Printing,

For the Merchant,
For the Mechanic,
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For Everybody,

Promptly and cheerfully executed by Himes the Printer, 5 Washington Street, Portland, Oregon. Legal Blanks for all kinds of business and law transactions.