TIDAL INFLUENCES.

THE THEORY OF ONE WHO HAS MADE CLOSE OBSERVATIONS.

Why the Strait of Carquinez Always Swallows the Immense Masses of Floods From the Valleys.

The greatest valley floods never yet raised the flowing tide in this potential tide-bearer the major fraction of a foot—probably never so much as a tenth of a foot, according to the casual observation of nautical men frequenting and experienced in it (the best authority in such a case on such a matter, for the eye of the practical sailor or waterman notes habitually and almost by instinct, the progress, regress and peculiarities of tides. Yet from time to time, during the generation last past, grave doubts and alarms as to the capacity of this giant factor of the ocean have been raised on the very respectable and very weak opinions of landsmen and lubberly land engineers.

I well wot of a really accomplished average civil engineer, who, once in the presence of an official body having appropriate functions, became pathetic in prophecy of terrible disaster because Carquinez wasn't big enough to take and carry great valley floods. It was one of those vagaries without a single fact to support its theory, that are hatched and too often fledged under color of scientific pretension, and which, by the sheer effect of promulgation in the name of science, carry doubts and something of dismay into the public mind without so much as a shade of a shadow of demonstration.

In view of the undisputed history of Carquinez Strait and its all-time past performances in the discharge of valley floods, I cannot doubt its power to dispose at once of any body of flood water that may be presented at the northern lobe of open water in Suisun Bay by a tidal channel through the Montezuma peninsula.

Whether a backset of water would temporarily result upon the bay islands can never be known by computation, from any data existing or attainable, without the operation of the Montezuma Channel itself, which would solve the question conclusively, without computation at all. Doubtless acres of figures could be made to apparently prove anything and really prove nothing, and regiments of mathematical physicists be found to make and verify them to the best of their knowledge and belief. Nothing of that kind in this matter should be trusted or tolerated. Every possible net damage to property ought to be, and under the elementary law of our State would be paid. Such damage, if ever found at all, could be no more than an infinitesimal offset against legions of great benefits of most substantial kind, even the general habilitation of a new earth of prime worth in these valleys.

Of the things that I do not know, which are many, of my firm beliefs, which are few, perhaps the chiefest of all, next to the supremacy of Divine intelligence, is the belief that flood waters delivered by the Montezuma Channel, if it is to be, will be no more floods, except as constituents of the mighty ebb and flow, until resurrected again by evaporation from old ocean and again transported and deposited by the powers of the air upon this or another land.

Just here, charily, as against current scientific opinion in the main, I venture a thought that a thorough tidal current at ebb has greater power and capacity for discharge than a non-tidal or semi-tidal river current of like vertical section. The practical paraphrase of this thought was expressed by the writer in a publication made September 21, 1878, in the following words:

"The home of the tides is very slightly perturbed by the river floods that devastate the river margins so grievously. The flowing tides from the sea, that man fends off so easily and effectually, have power to drag after them at ebb the whole river flood that defies him and his works. Any quantity of water appearing at the door of the tide will pass out without delay or surface elevation above high tide worthy of remark. It is this truth that gives such paramount importance to a tidal channel through the Montezuma. * * *"

During these twelve years, since those words were indited, they have been vindicated and verified by the elements of more than one heavy river flood, as they theretofore had been guaranteed by unnumbered floods preceding them. But I here return to my theory of tidal forces—and boast nothing.

River currents are the effect of gravitation operating in the direction of the earth's radii, and causing progress on lines of inclined planes such as the earth's surface may happen to indicate for them. The inherent cohesive property of water cuts small figure as a factor in the progress of a flowing stream solely impelled by gravitation toward the earth's center. The prevailing characteristic of rivers is that of the greater declivity near the source and the lesser near the debouchure.

The tractile effect of cohesion is thus neutralized by the more rapid current near the source, which thrusts the slower current forward instead of being itself drawn forward by cohesion to the latter. The exceptions, such as the Falls of the Nile, the Niagara, the Congo, only prove the rule, to-wit: That the water of rivers glides, rolls, rushes, tumbles, etc., with slightly appreciable assistance from the tractile property incident to the cohesion of its particles, which traction when in massed volume under tidal influence, is brought into steady and most effective action, together with the earth's gravity as well.

Most effective, I say, for the motor of the ocean tidal rise is not the effect of gravitation toward the earth's center, but the forces operating in a quite different direction, as instance the attraction of (gravitation toward) the sun and the moon, the centrifugal force of the earth's diurnal revolution, and so on. That the inducements to the tides are but imperfectly understood by those best informed in them is non-essential and indeed hardly referential to my theory of the power of the ebbing tide to draw along with it great accummulations of water not placed by the flowing tide at all, but by floods from the inland watershed. It is quite sufficient for my purpose to know the mode in rise and fall of tides as inferred from these two facts, respectively, seen and universally admitted.

Ocean tidal elevations occupy immense surfaces on the planet and advance with stupendous velocity; yet the water composing them advances almost not at all—it is simply lifted up, and when the tidal elevation has passed by and the water falls, it recedes not at all, except from its elevation. It is lifted and lowered in a mass, the surface and the depths simultaneously. If only the surface water was affected by the rise, surface radii currents at twenty times railroad speed would be darting toward the culminating point of the rise. We know no such thing happens. Hence, I repeat, the surface and the depths rise in correspondence, and all is serene. Nor can we imagine that the whole mass of ocean is lifted clear of its bottom, and undercurrents at twenty times railroad speed formed to fill the vacuum. But it is easy to conceive the earth's crust at the bottom—or rather the whole mass of the planet—flexible enough to yield the foot or two or three that forms the maximum tidal elevation at mid-ocean.

The flexibility of the earth is illustrated clearly at every little shock of earthquake. Were there no flexion, the surface would be broken by the least of them. As it is, the earth opens only under great shocks that exceed its elasticity at particular points. But it is quite possible, and even probable, that continents experience an imperceptible rise and fall from the same causes that produce the rise and fall of tides in the ocean. Our old "solid earth" is a little mellow after all, and it makes us glad to think so.

I am a little wide of my main subject, but shall return and get there all the same.

When the advancing tidal elevation finds an obstruction, indenture or inlet at the land, then, and only then, is an appreciable advancing current of water formed to the land, producing the "flowing tide." This current is closely correspondent to a river current of equal depth, and is thrust forward, not *drawn* forward at all by reason of its cohesion, though gravity operates by reason of its tidal elevation. It is the practical equivalent of a river current. But when the culminating point of the tidal elevation has passed, then the surface and the depths of ocean fall simultaneously and communicate a like tendency to accessories in bays and inlets. Hence, the tidal currents at ebb in these accessories are nearly uniform from surface downward, often strongest beneath the susface, while river currents are always retarded from the surface downward.

The river current is produced and maintained sheerly by the gravity of the earth; the flowing tide by the thrust of the tidal elevation and the gravity of the earth; the ebbing tide by the joint motors of the gravity of the earth and a powerful traction through the cohesion of the steadily moving masses of water directly subjected to an uniform draft from surface to bottom, equal to the whole sinking weight of the ocean column of tidal elevation, less the difference in depth between the principal and its accessory.

In view of stupendous achievements in the discharge of inland floods, achievements that dazed engineers have many times and oft been ready to denounce as impossible, even in the face of the triumphant facts known and read of all observers, I much incline to trust my theory of the tidal influence, and think it truly discloses the reason why the Strait of Carquinez always swallows the immense masses of floods from these valleys without appreciable rise of its surface or one symptom of gorging. And if the theory is true, then the strait has a far greater capacity than natural exigency has ever yet demanded. Yet the well knewn facts that illustrate Carquinez are a basis of faith stronger than can be any theory of forces, unless approved by results. S. N. NORTON.

Rio Vista, January 14th.

OFF FOR THE FAIR.

Several Trainloads of People Depart for Marysville.

Two special trains left this city yesterday via Knight's Landing for the citrus fair at Marysville.

The first consisted of a car and engine, and on board were Division Superintendent J. B. Wright, Governor Markham, Judge W. C. Van Fleet, M. R. Higgins (Private Secretary to Governor Markham), E. P. Johnson (Executive Clerk), and several others.

At Davisville, a special car containing General Superintendent J. A. Fillmore of the Southern Pacific Company and party, was attached, and the train sped on to Marysville.

The second train left this city about 10:40 A. M. and consisted of twelve coaches and an engine. Six of the cars were filled with excursionists from this city, and of the remaining empty coaches, five were for the Woodland people and one for those who had chartered it at Knights Landing. When the train arrived at Davisville, it was met by the overland from San Francisco, which brought three carloads of guests from that place. The coaches were detached and coupled to the excursion train, making the whole consist of fifteen cars.

The conductor of the south-bound Oregon express, which arrived here yesterday morning, stated that he carried five special coaches filled with people from Chico to Marysville. An excursion train also left Oroville for the citrus fair yesterday afternoon.

NEWLY INCORPORATED.

A Society for the Colonization of Russian Jews Files Articles.

The following articles of incorporation were filed in the Secretary of State's office yesterday:

The International Society for the Colonization of Russian Jews. Principal place of business San Francisco. Capital stock, $1,000,000. Directors, D. Lubin of Sacramento and Marion Levenbritt, D. Stern, Jacob Greenebaum, Julius Jacobs, Chas. Meyer, Marcus Rosenthal, Isidor Jacobs, I. W. Goldman, Jacob Voorsanger and Joseph Naphtaly.

San Joaquin Valley Warehouse Company of San Francisco. Capital stock, $300,000. Directors, Jacob Eppinger, Barry Baldwin, H. Dutard, Jos. Hogg, B. Ettlinger, J. W. Sperry, R. D. Girvin, Geo. Sperry, I. S. Bostwick, J. D. Peters and A. B. Sperry.

H. S. Crocker Company of San Francisco. Capital stock, $750,000. Directors, H. S. Crocker, C. H. Crocker, H. J. Crocker, W. A. Swinerton and A. C. Forsyth.

AMUSEMENTS.

Eunice Goodrich and her well-known company opens the Clunie Opera House this evening for a week's season. Miss Goodrich has the support of Mr. McCann; an accomplished and painstaking actor, equally good in melodrama or comedy, society drama or all around work. The play for this evening will be the interesting drama "The Actor's Daughter." In it Miss Goodrich has a part exactly suited to her versatile abilities, and that presents the company at its best. The prices, elsewhere announced, are extremely low.

To-morrow evening the Alcazar Theater Company begin an engagement at the Metropolitan Theater, opening with "The Magistrate." Seats are on sale without extra charge for reserving.

"The Private Secretary" Company is to appear here in a few days. It is one of strength. The play is one of the brightest and wittiest of the day. It is by Gillette, who has a genius for sparkling comedy. The play has had a phenomenal life of sustained interest.

The Fete of Nations concluded with a matinee yesterday afternoon and a fancy dress party last night at the opera house. It was the best amateur effort that has been made here. The ladies managing were especially successful in their handling of so large a company and in staging the entertainment so admirably. The business managers especially showed aptitude for the work, and an especial capacity.

Russell's Comedians, with Charley Reed, Fay Templeton and Dan Daly in the lead, closed their engagement last night at the Metropolitan to a good house, and leave to-day for San Francisco.

Much interest is manifest in the coming of the Swedish Ladies Octet Concert Troupe, which appears here Tuesday evening, en route from the East for the Baldwin Theater, San Francisco.

Installation of Officers.

Harmony Lodge, Knights and Ladies of Honor, installed the new officers Friday evening, January 16th, at Pythian Castle, as follows: Lincoln White, Past Protector; C. N. Post, Protector; Mrs. O. W. Erlewine, Vice Protector; Mrs. L. Fitzmeyer, Chaplain; Miss May Connelly, Guide; Mrs. M. Keller, Recording Secretary; J. C. Pierson, Financial Secretary; Mrs. M. B. Garrison, Treasurer; J. J. Cahill, Sentry; R. T. Mitchell, Guardian. A class of twenty-eight new members were initiated in a manner reflecting much credit upon the retiring officers. After some highly interesting and witty remarks by Dr. Wiard, C. N. Post, T. H. Burkey, J. C. Medley and others, the meeting closed with music and dancing.

To Be Pasted.

The paster for the eight-page form on our new press is not yet in place, and consequently the inserted pages are not pasted to-day. We expect to have the paster on within a week or two, after which the eight and twelve-page editions will be fully pasted.

Schedule Changed.

There will be a slight change in the railroad time-table commencing next Monday. The morning local train from Lathrop, which connects with the Southern Express, will arrive in this city at 9:35 A. M. instead of 8:50 A. M.

PETE AND HIS CANNON.

The Veteran Hunter Takes a Shy at Ex-County Clerk Hamilton.

He Then Proceeds to Tell Why He is the Enemy of the "Ballee" Duck.

Well, I see our old friend, Billy Hamilton, is on the rampage again, and has been hauling me and my "cannon" over the coals in the columns of the RECORD-UNION.

Billy must be getting old.

In days gone by, when I knew him well, he was a different man than he is now. He wouldn't tell a fib then, nor would he connive to hurt the feelings of a friend. But he's changed now, Billy has. In his interview with a RECORD-UNION reporter, published on the 1st inst., he says he did not apologize to me for taking part in that so-called "indignation meeting," when I was so roundly abused for using a "cannon" in my business as a market hunter.

Well!

I considered that he made all the apology necessary between friends. Again he says that I told him my gun was a No. 4-gauge bore. He is either mistaken or is fibbing again, for some purpose of his own or the clique he is in with. What I did tell him is this, and I think they are almost the precise words I used: "I sometimes call my gun a No. 5, but I think it is only stamped on the barrels as a No. 6." Is it likely that in the wrangle about the

SIZE OF THE GUN

I would tell him the gun was two sizes larger than it is? Mr. Hamilton further states that he has good authority for stating that Eberhardt's information that my gun is a number three gauge bored out to a number two is correct. Again, he says that "when the north wind blows, what hunter in this city has not heard the roar of Pete St. Clair's artillery?"

The gall of him!

He says that the roar of my artillery can be heard within a radius of ten miles. Now, dear reader, do you not think this is drawing a pretty long bow? Now, Mr. Billy Hamilton, I would like to ask you what you expect to gain by slandering and telling stories about me and my gun. Have you knowledge enough to understand that you must not publish a lie about anyone? A slander is held good for an action at law. Do you think that you can prove any assertion you or Eberhardt have made to be true? I defy you both to do it. If you do not prove that you have spoken the truth I will brand you both as a pair of whopper tellers, and Sacramento's four hundred will give you the cold shoulder. Let me give you a few facts which you can digest at your leisure:

My gun is a number six guage, but is a *trifle* larger in the muzzle—about one-half a number larger, I guess.

I have never used or owned a larger gun. Messrs. Flohr and Eckhart say it is a number six gauge.

I never killed or sent to market at one time 1,000 ducks, or half of that number.

I have not killed eighty-four ducks at one shot in the two last years.

The roar of artillery was not the roar of my gun. It must have been the roar of bad whisky in your head, Billy. Messrs. Cox & Clarke have been clearing out the Bannon Slough and removing logs and old stumps and brush from the banks of the slough to promote the draining of their property of which, several thousand acres are under water. For this purpose large quantities of

DYNAMITE WERE USED

In blasting, and this was the roar of artillery that Billy Hamilton and the little boys and girls heard. Now, Mr. Hamilton, you are getting cornered up a little. Will you get hot again? Will your eyes bug out like a pair of Roman candles? They might furnish you a little light on the subject. Now, Mr. Billy Hamilton, if you have been mislead by other parties, why not come out frankly like a man and say so, and let the slanders rest where they belong, for you can prove nothing that you allege. I have given you a direct challenge. I am not joking. I'm in dead earnest, and I want you to know it. You are trying to involve Mr. Routier in getting a bill passed by rushing it through the Legislature before it can be well considered.

This attack on me is only a pretext for an attack on the farmers of this valley. But I will speak of this part of it when I have done with you, Mr. Hamilton.

You say that I am thinning out the ducks. This is so comical that any one who knows anything about the class of ducks here now would not pay the slightest attention to what you say, except to grin at you.

And now, Messrs. Editors, and you, dear readers, who have been watching the dark plots of these fellows from the start, but do not know their objects, it is a spiteful attack on me. Let me tell you that this is only an indirect attack on the farmers of this valley. These sturdy fellows are the backbone of Californ a and are the men who have built up and supported the cities of this valley, and they need all the protection the laws can give them. Floods and dry seasons have done their work on these gallant fellows, and to-day most of their homes are mortgaged; but still they struggle on, bravely determined to succeed, and they will do it in time. It is not many years since the law for the protection of ducks was done away. This was unwise, because some of our game birds needed protection, and the next Legislature amended and passed the present very effective law for the protection of game.

THE DESTRUCTIVE BALLEE.

Now, dear reader, let me explain why this law was abolished.

The widgeon, or "ballee," as this duck is sometimes called, is the entire cause of all the trouble the hard-working farmer has to contend with, being very gregarious in its habits. It goes in immense swarms to the grain fields, where they destroy everything around them, frequently ruining an entire field of grain in a few days and there is no protection against them. I have seen these destructive birds on the grain, where they could be counted by the acre, and figures are inadequate to give any idea of their incredible numbers, and to say that a few hunters could make any impression in thinning them out is absurd.

The farmers have tried every means to protect their grain, but it is little use, the birds in the night and about daylight can be seen making their way to the tules.

The widgeon is not like any other duck. His habits are distinct and peculiar, and he is more like the wild goose than the duck, and his home is not on the water with the other ducks, but in the pastures and grain fields, where he eats and destroys nearly everything that is green. This is why he is such a terror to the farmer who raises grain. The breeding grounds of these birds are some thousands of miles from here, and in the great northern lakes and swamps they breed undisturbed, the long cold winters preventing all vegetation from growing except the mosses and spongy growths belonging to this family, but the short, warm summer fills the lakes and swamps with an abundance of insect and vegetable life, on which these birds fatten and raise their young.

When the winter begins, their migratory habits lead them to move to more genial climates, and they wing their way to this continent in swarms more like the dreaded locust than anything else I can compare them to, and when they reach here they are still quite fat in spite of their long flight to their winter home.

The Sacramento Valley gets its full share of them, and the farmer dreads the advent of these destructive birds almost as much as a swarm of locusts, and they are nearly as destructive.

I have known large fields of grain to be completely destroyed in a few days by these birds, and it is difficult to give an accurate idea of their incredible numbers. In one of my hunting excursions a few days ago, on the plains between Pritchard's Lake and this city, I came across a swarm of these birds. On an an estimate theyw ere at least

ONE-FOURTH OF A MILE LONG,

And from about fifty to 200 yards wide, and so densely packed that the ground could not be seen. Can some of the readers of the RECORD-UNION calculate how many hundred thousand of these ducks there were in this swarm? It will be impossible for many years to come to thin out their numbers.

Advancing civilization is the best agent we can get for this purpose.

In the meantime the farmer needs all the protection we can give him, and it is time that we began to realize the fact that the farmer is of more use to us than a few ducks. Now, dear reader, the issue in this little dispute is between the farmers of the valley and a few sports who live in the cities. These fellows want the ducks so plentiful that they can shoot them for sport without getting out of their carts or Gurney cabs. This is all right enough as far as it goes, but what have they done for this privilege?

Let us see.

He hires a gun from the gunsmith and buys a lot of shells. Then he buys a flask or two of whisky from the rum shop, and he is ready for his Sunday work. Outside of any little work he does through the week, he is of no use to any one, unless on election days, when he is wanted to vote. Now, dear reader, let me ask what has the farmer done that we should protect him? He has built up our cities. He has raised the grain that the "ballee" eats and that loads up the immense fleets of vessels that sails from our ports to every part of the globe. He furnishes the bulk of trade to support these cities. He employs thousands of idle hands, and our railroads would have a slim purse if it was not for the farmer. Is there any comparison between these two classes? Then let us be careful how we pass laws to injure him. He is a giant, and he hardly knows his own strength yet; but we must not trample on him, and you, gentlemen, who have the making of our laws, see that no law on game is passed to injure the men who have placed you in power to protect their interests, and see that no law is passed to injure them or hinder them or their friends (the hunters) from using their guns to suit themselves. This State has only one market to supply, and that is San Francisco. The other cities are only local markets, and the game laws now in force are sufficient protection for our game birds and

NO NEW LAW IS REQUIRED,

And as a land-owner and tax-payer, I for one protest against any new law that will injure the farmer or his friends (which is me), and as for sporting matters there is very little to be done on the "overflow" at present. The birds do not fly. The most of them are up on the mudflats near Pritchard's Lake, where they can be found in countless numbers. But the sport does not bag many of these birds. They are too wary. But he manages to get away with the contents of his whisky flask in good shape, you bet, and I suppose he is satisfied.

Some enterprising sport found his way into my game room about a week ago and had real good sport bagging about ten or twelve brace of teal and widgeon in a short time, and now a huge padlock adorns the door—more suggestive of dynamite than safety. These pleasant little affairs break up the monotonous life of a hunter and make it more endurable; but perhaps, dear reader, you think there is nothing but whisky sports. That is a wrong idea.

There is another class that we call gentlemen sports. These pleasant fellows are always welcome to the hunter and farmer alike. You see, being gentlemen, they do not break the fences or shoot the stock, or take a sly shot at a pig, and they do not pack home some tame ducks or geese and then blow about the way they "knocked 'em." They just behave like gentlemen, and if they make any mistake it is corrected promptly and pleasantly. In my long career of hunting I have known many of them nice, pleasant fellows. They were always welcome in my hunting camp. Who has forgotten Anthony, of the RECORD-UNION, a gay old gentleman sport as ever lived? Why, he had a heart as big as a wheelbarrow. And there were others just like him, and if you think there are no sports of this kind left you are mistaken, God bless them!

And now, dear editors, you, who have been always on the side of justice and truth, how shall I thank you for your kindness in allowing me the use of your columns to defend myself and the farmers, who are your and my friends? Perhaps, by saying as little as possible. But out of the heart proceedeth many things that are good, even if they do sound a little spiteful. God bless you, sirs; yes, God bless everybody in the—no, I don't mean that, because Billy Hamilton is in the world yet. But then, there is a big black "X" opposite his name on Saint Peter's big book, and when Billy tries to get into heaven, old Peter (not me, but Saint Peter.) will say "no," and will tell him to go back and get aboard Tom Clark's cigarette fiend train, and go to the other place—that is, if they will let 'em in down there.

PETE ST. CLAIR.

SUPERIOR COURT.

Department Two—Van Fleet, Judge.

SATURDAY, January 17, 1891.

People vs. Dell Murphy and J. J. Hurley, charged with robbery—Defendants arraigned and pleaded not guilty.

People vs. Wright, Quinlan and Sullivan, charged with robbery—Defendants arraigned and pleaded not guilty.

Princess Beatrice is indefatigable in literary work. Not content with the treatise on lace that she is soon to publish, she has just brought out a clever translation of a book entitled, "The Adventures of Count George Albert of Erbach."

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75-cent Corsets, drab and white, 35 cents.

$1 Ladies' Black Kid Gloves, sizes 5 1-2 and 5 3-4, 25 cents.

75-cent Ladies' Fine Wool Cashmere Gloves, 50 cents.

$1 Ladies' Buck Driving Gloves, sizes 6, 6 1-4 and 6 1-2, 25 cents.

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