IS LIFE'S SECRET SOLVED?

PROFESSOR LOEB SPEAKS OF HIS MOST RECENT DISCOVERIES

THE fact that Professor Jacques Loeb, head of the biological department at Chicago University, has reproduced the manifestations of physical life in certain chemical actions and has demonstrated that the source of nerve and muscle stimulus is electrical, means more than was at first realized when the announcement of his discovery was made a few weeks ago. Dr. Loeb did not reveal all of the results of his experiments at that time, neither did he stop his labors when he accomplished the first success. He is not yet willing to lay claim to having discovered the great secret of what life is, how it begins, and why it ends, but he has left it to those who have seen the results of his recent experiments to draw the conclusion that he has arrived very close to the most astounding discovery of a century. Certain it is that a new physiology has been born, and a new pharmacology as well. We shall have to revise our textbooks and our systems of treating with drugs.

"There will soon be announced," said Dr. Loeb to the writer a few days ago, "an account of the discovery that enzymes (the elemental forces of life), which do not nominally exist in the human frame, may be actually created. Not by me is this announcement to be made," he added. "The work has been done by another scientist, and I cannot talk about the matter yet. You see, there are others working on these great problems."

PROFESSOR LOEB IN HIS LABORATORY.

Can Life Be Created at Will?

Can life be created at the will of man? Can a scientist show how to avoid death? Is there a reasonable way of lengthening life? These are questions which every one asks. Formerly the answer would have been "Impossible!" Now the man in the street is saying: "Possibly," and the biologists who have been watching Dr. Loeb's work are ready to say "Probably."

At any rate, that is the conclusion to which a study of Dr. Loeb's experiments inevitably leads. Here is a scientist who has already, in a sense, created life. He has taken unfertilized sea urchin eggs, from which, until they are brought into contact with the sperm, no life can develop, and he has, by means of chemical solution, been able to develop these so that they are living organisms, the same as though they had been developed in the ordinary manner. With other solutions, salts and chlorides, and other unfertilized eggs, he has accomplished similar results. Other scientists have verified these conclusions by experiments of their own; the result is a matter of scientific history now, and what is called "artificial parthenogensis" is a fact no longer to be questioned.

What Loeb Has Shown.

Dr. Loeb has gone further than this, however—further than any previous biologist. He has determined that the living organism is protoplasm in a liquid state; that death comes when the protoplasm passes into a more or less solid condition, and that life itself depends on the electrical charges of the protoplasmal particles. It was shown some time ago that poisons acted on the nerves in just this manner—the colloidal substance of which the nerves are composed began to solidify under the action of poison. Here we may see the application of the new pharmacology. It is no longer necessary to administer medicines blindly. The exact effect of every drug, every chemical, can be ascertained without difficulty. The body, in illness or health, must be in a certain chemical state, which will be shown by the new methods of diagnosis. Granted that this latter may be accomplished, and it seems now that it will be, it is easy to see how the proper chemicals or medicines, bearing the proper charges of electricity in themselves, may be used to restore the body to its normal condition. The scientists will have shown us a way to control physical life. This is probably very near to what Professor Loeb meant when he said that he wished to understand life, to take it in his hands and play with it as he chose.

On what, thn, does life depend?

"The present theory," said Dr. Loeb, "is that an electric charge keeps out protoplasm in a liquid condition so as to prevent coagulation. Life depends on the liquid condition of certain parts of our protoplasm; death comes with the coagulation of these parts, and the forces which make the manifestations of life possible are first of all the electric charges of the particles of this protoplasm."

If electricity is at the source of living energy, man's digestive apparatus is no longer to be regarded as a heat producing mechanism. His stomach is a dynamo and his nerves are the connecting media—the telegraph wires—for communication between the different parts of the body and the storage battery in his cranium. His heart is a big, muscular pump, which beats rhythmically because the the electrical changes going on in the body. His lungs are a set of bellows, which suck in oxygen and expel carbonic acid gas for a similar reason. The cranial storage battery is the seat of a mechanical intelligence, which directs the actions of its surface extremities and maintains an electrical equilibrium in the body. We have, then, in ourselves, each an air and liquid pump, a storage battery and a set of wires, all operated by electricity created by chemical changes.

The body has a certain constant charge of electricity when in a normal condition, just as the earth is said to maintain a certain balance electrically, and illness or death comes with a variation of this electrical state. This is, indeed, a new physiology.

The simplest form of life is the single-celled organism—the sea urchin is a good example. It was with this form that Dr. Loeb carried on most of his important experiments at Woods Holl, Mass., and in the Marine Observatory in Naples, Italy. Experiments of this sort were fundamentally important, for all life is simply protoplasm in some form or other. If Dr. Loeb could determine what caused the movements of the little mass of protoplasm which composes the sea urchin, he could then determine with certainty the causes of the functions of life in many complex cells of living matter.

Upsetting Former Beliefs.

Few have probably stopped to think what this theory means in its relation to our former beliefs in life, its spiritual creation, its origin and its end. Dr. Loeb has done that which has been puzzling the scientist for a century past—he has linked the inanimate world with the animate.

"Will it not be more difficult," I asked, "to harmonize this conception of life with our present religious beliefs than it was for Darwin's theory of evolution to be finally accepted by the Christian world?"

"I don't want to discuss that," replied Dr. Loeb. "All I can say is that for a long time I puzzled over the forces which rule in the realm of the animate, and then I came to the conclusion that these forces were the same as those which ruled the inanimate."

After the theory came the experiments. The biologist reduced conscious life to a material basis by creating conscious life. To be sure, this creation has as yet been done very crudely, but the significance of the result is no less important. Now that he has accomplished the prolonging of the life of the simple-celled sea urchin, and more than that, the creation of life in these forms, he has brought the scientists and the churchmen face to face with the eternal why. The door of the mystery house of creation will probably remain closed to them.

The greatest difficulty of the biologists is to explain the chemical character of life. Much of the phenomena of life can be reproduced in the chemist's laboratory,

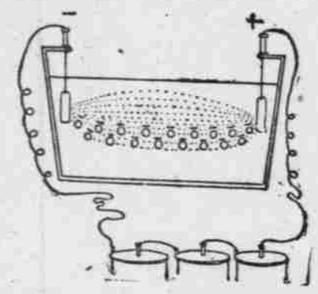

Diagram showing effect of electric current on protoplasm. The particles move from negative to positive pole and die when they reach it.

but, thus far, only at such a high temperature that actual life is impossible. No one could explain why the functions of the body could be carried on at the low temperature at which they now operate.

"For example," says Dr. Loeb, "oxidation, a fundamental principle of life, takes place at a low temperature in the body. The air is inhaled by the lungs and the oxygen taken up by the blood in a very simple manner, but if the chemist attempts to reproduce this, he requires a tremendous heat."

Living Matter in Liquid State.

"Our living matter has at least one common quality with solutions of platinum," says Dr. Loeb, "namely, that they are colloidal solutions; that is, liquid substances. I should say that perhaps one of the most important features of the physical construction of living matter is this, that half of our living matter must be in a liquid state, and this liquid state is of the charctaer of colloid solution with the same forces as are in the platinum colloids. What are these forces?

"Experiments have been made showing the effect of an electrical current in water in which were living cells. These cells, bearing negative charges, move toward the positive electrode. When they come in contact with it they lose their charges of electricity and die. The same thing happens practically with platinum solution. The negatively charged particles move toward the positive pole, and when they come in contact with it the platinum sinks to the bottom of the jar. It is because of the electric charges that particles of heavy specific gravity like platinum can remain in solution. The particles of any solution treated in this way move toward the poles, and when the electrically charged particles reach their opposite poles they give up their charges and we have the process of coagulation. This in the living world is death.

"Our lives depend upon the electrical condition of our protoplasm. Death is the process of coagulation. So it seems that the chief forces which render these manifestations of life depend upon the electrical condition of our protoplasm, and that the force which makes life possible is primarily the electric charge. It would be very one-sided to think that from the electrical point of view all manifestations of life could be explained. In this we must remember that changes in temperature might bring about coagulation. Our study now is the forces which exist in the liquid part of protoplasm."

Are we any nearer the great mystery? Man may create conscious life, play with it, prolong it by chemical or electrical means, and yet, what is it that, back of all, breathes into the organism the consciousness of life itself?

HERBERT WALLACE.

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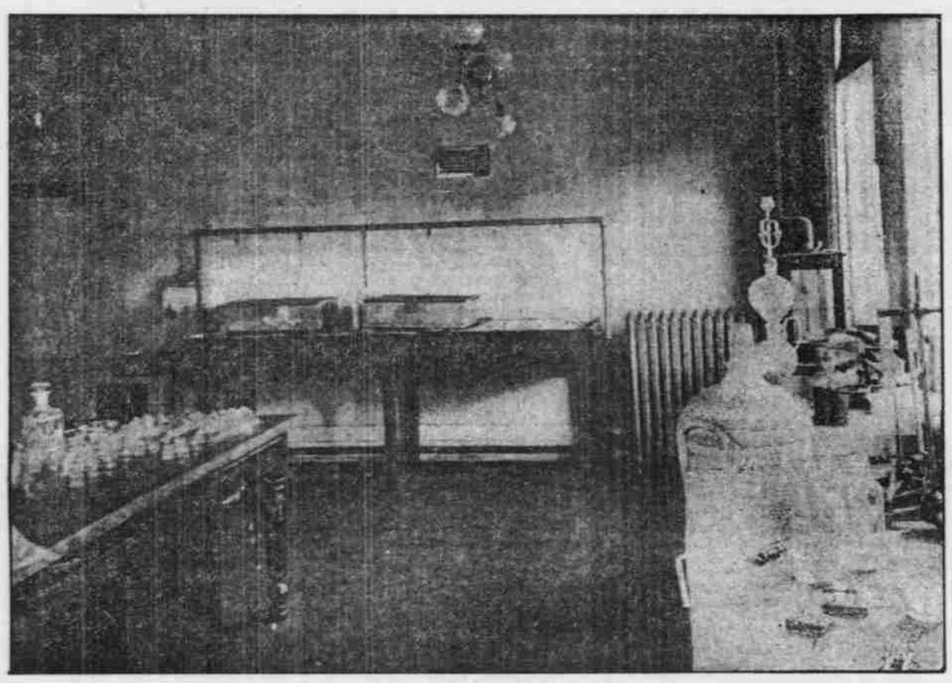

A CORNER IN PROFESSOR LOEB'S LABORATORY.

WHEN TUTT FIRST SAW TUSCON

WOLFVILLE STORY BY ALFRED H. LEWIS (DAN QUIN)

IN speakin' of dooels," remarked the Old Cattleman, apropos of an anecdote of the field of honor wherewith I regaled his fancy, "speakin' of dooels, I reckons now the encounter Dave Tutt involved himse'f with when he first sees Tucson, takes easy and onchallenged precedence for utter bloodlessness. She's shore the most lamb's wool form of single combat to which my notice is ever drawn. Dave enlightens us concernin' its details himse'f, bein' incited tharunto by hearin' Texas Thompson relate about the Austin shootin' match of that Deaf Smith party.

"'Which this yere is 'way back yonder on the trail of time,' explains Dave, 'an' I'm hardened a heap since then. I've jest come buttin' into Tucson an' it's apples to ashes I'm the tenderest an' most ontaught party that wears store moccasins. What I misses knowin' would make as husky library—if it's all printed down in books—as ever lines up on shelves. Also, I'm freighted to the limit with the tenderfoot's usual outfit of misinformation. It's sad, yet troo! As I casts my gaze r'arward a whole lot, I identifies myse'f as ondoubted the balmiest brand of shorthorn who ever leaves his parents' shelterin' roof.'

"'All the same,' says Dan Boggs, plenty conceited, 'I'll gamble a hoss I'm a bigger eediot when I quits Missouri to roam the cow country than ever you-all can boast of bein' in your most imbecile hour.'

"'Do they lock you up?' asks Dave.

"'No,' says Dan, 'they don't lock me up none, but——'

"'Then you lose,' insists Dave, mighty prompt.

"'But, hold on,' says Dan; 'don't get your chips down so quick. As I starts to explain, I ain't locked up; but it's because I'm in a camp like Wolfville yere that ain't sunk to the level of no calaboose. But what comes to be the same, I'm made captif, an' held as sech ontil the roodiments of Western sense is done beat into me. It takes the yoonited efforts of a dozen of the soonest sharps that ever happens; but, final, they succeeds to a point that I'm deemed cap'ble of goin' about alone; whereat they removes my hobbles an' tarows me loose.'

"'Well,' retorts Dave, 'I won't dispoote with you; an' even at that I regyards your present attitoode as one of bluff. I thinks you're shore the cunnin'est wolf in the territory, Dan, an' allers is. But as I'm sayin': When I first begins to infect Tucson, I'm so ignorant it's a stain on that meetropolis.

"'At this yere epock, Tucson ain't spread an' spraddled to its present proud dimensions. A gent might have thrown the loop of a lariat about the outfit an' drug it into rooins with a pony. No one, however, performs this feat, as the camp is as petyoolant as a t'rant'ler, an' any onauthorized dalliance with its sensibilities would have led to some mighty vivid plays. Still, she aint big, Tucson ain't; an' I learns my way about from center to suburbs in the first 10 minutes.

"'At the beginnin' I'm a heap timid. I suffers from the common Eastern theory, an' looks on Arizona as a region where it's murder straight an' lynchin' fer a place. You-alls may judge from that how erroneous is my ideas. Then, as now, the distinguishin' feacher of Tucson existence is a heavenely ca'm. Of couree, now an' then the air nacherally fills up with bullets like a passel of swallow birds, an' the lead hums an' sings their merry roundelays. However, these busy seasons don't set in so often nor last so long but peaceful folks has ample chance to breathe.

"'Never does I b'ar witness to as many as seven contemporaneous remainders but once; an' then thar's cause. It's in a poker game; an' the barkeep brings the dealer a cold deck onder a tray whereon he purveys the drinks. Which the discovery of this yere solecism, as you-all well imagines, arouses a interest, earnest an' widespread like I describes. I counts up when the smoke lifts an' finds that seven has done sought eternal peace. Common, as you-all saveye, two is the number; three bein' quite a shipment. Shore, it's speshul sickly when as many as seven starts out together!

"'Bein' timid an' ignorant, I takes good advice. It's in the Oriental. Thar's a old gray cimmaron hibernatin' about the bar, whose name is Jeffords.

"'"Be you-all conversant with that gun you packs?" asks this Jeffords.

"'"I feels the hot blush mountin' in my tender cheeks, but I concedes, I ain't.

"'"Pards," I replies, "speakin' confidenshul an' between gent an' gent, this yeare weapon is plumb novel to me."

"'"Which I allows as much," he says, "from the egreegious way you fidges with it. Now let me pass you-all a p'inter from the peaks of experience. You caper back to the tavern an' take that weepon off. Or what's as well, you pass it across to the barkeep. If you-all goes romancin' 'round with that hardware at your belt, it's even money it'll get you beefed. Allers remember while in Arizona, that you'll never get plugged—onless by inadvertence—as long as you wander about in onheeled innocence. No gunless gent gets downed; sech is the onbreakable roole."

"'After that I goes gultless of arms; I ain't hungerin' for no immortality abrupt.

"'Old Jeffords is shore right; in the southwest if you aims to bear a charmed life, never wear a six-shooter. This maxim goes anywhere this side of the Mississippi. East of that mighty river, it's the other way.

"'Bein', nimble-blooded in them days, I'm a heap arduous about the dance hall. I gets infatyooated with the easy good fellowship of that hurdy-gurdy; an' even after I leaves Tucson proper, an' is camped some miles away, I saddles up every other evenin', rides in an', as says the poet, shakes ontirin' laig even into the wee small hours."

"'Right here, gents,' an' Dave pauses like a solemn thought strikes him, 'I don't reckon I has to caution none of you-all not to go to repeatin' these yere mem'ries of gay days an' gone where my wife Tucson Jennie cuts their trail. I ain't afraid of Jennie; she's a kind, troo, he'p-meet; but ever since that onfortunate entanglement with the English towerist lady, her suspicions sets up nervous in their blankets at the mere mention of frivolities wherein she hears my name. I asks you, therefore, not to go sayin' things to feed her doubts. With Tucson Jennie, my first business is to live down my past.'

"'You-all can bet,' says Texas Thompson, while his brow clouds, 'that I learns enough of lovely woman an' her ways while livin' with my former wife, to make sech requests sooperfluous in my case. Speshully since if it ain't for what the neighbors done tells the lady, she'd never go ropin' round for that Laredo divorce. No Dave; your secrets is plumb safe with a gent who's suffered like me.'

"'Which I savey's I'm safe with all of you,' says Dave, his confidence which the thoughts of Tucson Jennie sort o' stampedes, beginnin' to return. 'But now an' then, them gusts of apprehensions frequent with married gents, sweeps over me, an' I feels weak. But comin' back to the dance hall: As I su'gests thar's many a serene hour I whiles away tharin. Your days an' your dinero shore flows plenty swift in that temple of merriment. An' chilled though I be with the stiff dignity of a wedded middle age, if it ain't for my infant son, Enright Peets Tutt, to whom I'm striving' to set examples, I'd shore admire to prance out an' live ag'in tnem halcyon nights; that's whatever!

"'Thar's quite a sprinklin' of the elect of Tuscon in the dance hall the evenin' I has in mind. The bar is busy; while up an' down each side, sech refreshin' pastimes as farobank, monte an' roulette holds prosperous sway. Thar's no quadrille goin' at the moment, an' a lady to the r'ar is carollin' "Rosalie, the Prairie Flower."

Fair as a lily bloomin' in May,
Sweeter than roses, bright as the day!
Every one who knows her feels her gentle power,
Rosalie the Prairie Flower.

"'On this yere o'casion, I'm so far fortunate as to be five drinks ahead, an' tharfore would sooner listen to myse'f talk than to the warblin' of said cantatrice. As it is, I'm conversin' with a gent who's standin' hard by.

"'At my elbow is posted a shaggy an' forbiddin' lookin' outlaw, whose name is Yuba Tom, an' who's more harmonious than me. He wants to listen to Rosalie the Prairie Flower. Of a sudden, he w'iris about, plenty peevish.

"'Stick a period that pow-wow," observes this Yuba; "I wants to hear this prima donna sing."

"'Bein' gals with them five libations, I turns on Yuba a heap naughty. "If you're sobbin' to hear this songstress," I says, "go for'ard an' camp down at her feet. But don't come pawin' your way into no conversations with me. An' don't hang up no bluff."

"'Which if you disturbs me further," retorts Yuba, "I'll turn loose for shore an' crawl your hump a lot."

"'Them foolhardy sports," I replies, "who has yeretofore attempted that enterprise, found it to be more than a mere formality. One an' all they sleeps in onknown graves. So don't you-all pester me, for the outlook's dark."

"'It's now that Yuba,—who's a mighty cautious sport, an' fore thoughtful, an' prone to look ahead,—regyards the talk as down to cases an' makes a flash for his gun. It's concealed by his surtoot an' I ain't noticed it none before. Which, if I had, most likely I'd pitched that conversation in a lower key. However, by this time I'm quarrelsome as a badger; an' a willin'ness for trouble subdooes an' sets its feet on my nacheral timidity an' holds her down.'

"'Dave, you-all makes me plumb nervous,' says Boggs with a heap of heat, 'settin' thar, lyin' about your timidity that a-way. You're about as reluctant for trouble as a grizzly b'ar, an' you couldn't fool no gent here on that p'int for so much as one white chip.'

"'Jest the same,' says Dave, mighty dogmatic, 'I still asserts that in a concealer, inborn fashion, I'm timid, absoloote. If you-all has ever behid me stand up ag'in the iron, it's because I'm 'shamed to quit, I'd wilt out like a jackrabbit if I ain't held by pride.

"'You're plenty ready with that Colt's," I says to Yuba, an' my tones is severe. "That's because you sees me weaponless. If I has a gun now, I'd make you yell like a coyote."

"'S'pose you ain't heeled," remonstrates Yuba, "that don't give you no license to stand thar aboosin' me. Be I to blame because your toilette ain't complete? You go frame yourself up, an' I'll wait;" an' with that, this yere Yuba takes his hand from his artillery.

"Thar's a footle party who keeps the dance hall, who signs the books as Colonel Boone. He's called the "Kink of the Cowboys;" most likely in a sperit of facetiousness since he's a heap more like a deuce than a king. This Boone's packin' a most excellent sixshooter loose in the waistband of his leggins. Boone's passin' by as Yuba lets fly his taunts, an' this yere piece of ordinance is in easy reach. With one motion I secures it, an' the moment follow'in' the muzzle is pressin' ag'inst a white pearl button on Yuba's bloo shirt.

"'Bein' now organized," I says, "this war dance may proceed."

"'I'm that scared, I fairly hankers for the privilege of howlin', but I realizes acootely that havin' come this far towards homicide I must needs go through if Yuba crowds my hand. But he don't; he's plumb forbearin' that a-way, an' stands mute an' still. Likewise, I sees his nose, yeretofore the color of a over-ripe violin, begin to turn sear an' gray. I recovers sperit at this, as I knows I'm saved. Still I keeps the artillery on him. It's the inflooence of that gun that holds Yuba spellbound, an' I feels shore if I relaxes he'll be all over me like a baggage-wagon down hill.'

"'Which I should say so,' says Jack Moore, drawin' a deep breath. 'You takes every chance, Dave, when you don't cut loose that time!'

"'When this Boone beholds me,' says Dave, 'annex his gun that a-way, he almost c'lapses into a fit. He makes a backward leap that shows he ain't lived among rattlesnakes in vain. Then he stretches his hand towards me an' Yuba, an' says: "Don't shoot! Let's take a drink; it's on the house!"

"'Yuba, with his nose still a peaceful gray, turns from the gun an' sidles for the bar; I follows along, thirsty, but plenty alert. When we-all is assembled, Boone makes a wailin' request for his six-shooter.

"'"Get his," I says, at the same time, animadvertin' at Yuba with the muzzle.

"'Yuba passes his weapon over the bar, an' I follows suit with Boone's. Then we drinks with our eyes on each other in silent scorn.

"'"Which we-all will see about this later," growls Yuba, as he leaves the bar.

"'"Go as far as you like, old sport," I retorts, for this last edition, as Colonel Sterett would term it, of Valley Tan, makes me that brave I'm miseratin' for a riot.

"'It's the next day before I'm firm enough to come ag'in to Tucson. This yere stage wait in the tragedy is doo to fear excloosive. I hears how Yuba is plumb sad; how he's got two notches on his stick; how he's filed the sights off his gun; an' how in all respects he's a murderer of merit an' renown. Sech news makes me feel timid two ways: I'm afraid Yuba'll down me some; an' then ag'in I'm afraid he's so pop'lar I'll be lynched if I downs him. Shore, that felon Yuba begins to assoome in my apprehensions the stern feachers of a whipsaw. At last I'm preyed on to that degree, I'm desperate; an' I makes up my mind to invade Tucson, cross up with Yuba an' let him do his worst. The nervousness of extreme yooth is what goads me to this yer decision.

"It's about second drink time the next afternoon when, havin' donned my weapons, I rides into Tucson. After leavin' my pony at the corral I turns into the main street. It's scorchin' hot, an' thar's hardly anybody in sight. Up in front of the Oriental, as luck has it, stands Yuba an' a party of dooblous morals who slays hay for the gov'ment, an' is addreesed as Lon Gliette. As I swings into the causeway, Gliette gets his eye on me an' straight way fades into the Oriental, leavin' Yuba alone in the street. This yere strikes me as mighty ominous. I feels the beads of water come onder my hatband, an' I begins to crowd my gun a leetle further for'ard on the belt. I'm walking up on the opposite side from Yuba, who stands watchin' my approach with a serene mein.

"'It's the ca'mness of the tiger crouchin' for a spring," thinks I.

"'As I arrives opposite, Yuba stretches out his hand. "Come on over," he sings out.

"'"Which he's assoomin' airs of friendship," I roominates, "to get me off my gyard."

"'I starts across to Yuba. I'm watchin' like a lynx; an' I'm that harrowed up, if Yuba so much as sneezes, or drops his hat, or makes a r'arward move of his hand, I'm doo to open on him. But he stands still as a hill an' nothin' more menacin' than smiles. As I comes clost, he offers his hand. It's prior to my shootin' quick an' ackerate with my left hand, so I don't give Yuba my right, holding the same in reserve for emergencies an' in case thar's a change of weather. But Yuba, who can see it's fear that a-way, is too p'lite to make comments. He shakes my left hand with well-bred enthoosiasm. Then he turns an' heads the way into the Oriental.

"'As we fronts the bar an' demands nosepaint, Yuba gives up his arms; an' full of a jocund lightheartedness as I realizes that I ain't marked for instant slaughter, I likewise yields up mine. We then has four drinks in rapid yet happy alternation. An' next we seeks a table an' subsides into seven-up.

"'"Then thar ain't goin' to be no dooel between us?" I says to Yuba. It's at a crisis when he's jest turned jack, an' I figgers he'll be more soft an' leenient. "It's to be a evenin' of friendly peace?"

"'"An' why not?" says Yuba. "I've shore done took all the skelps that's comin' to me, an' as for you-all, you're plumb young an' my counsel is to never begin. That pooerile spat we has don't count. I'm drinkin' at the time, an' I don't reckon you attaches importance to what a gent says when he's in licker?"

"'"Not to what he says," I replies; "but I does to what he shoots. I looks with gravity on the gun plays of any gent, an' the drunker he is, the more serious I regyards the eepisode."

"'"Well, she's a thing of the past now," explains Yuba, "an' this evenin' you're as pop'lar with me as a demijohn at a campmeetin'."

"'Both our bosoms so wells with joy, settin' thar as we do in a atmosphere of onexpected yet perfect fraternalism an' complete peace, that Yuba an' me shore drinks a whole lot. It gets so, final, I refuses to return to my own camp; I won't be separated from Yuba. When he can no longer drink, we turns in at Yuba's wickeyup an' sleeps together. The next mornin' we picks up the work of reconciliation where it slips from our tired hands the evenin' before. I does intend to recpair to my camp when we rolls out; but after the third conj'int drink, both me an' Yuba sees so many reasons why it's a fool play for us to part, I gives up the idee utter.

"'Gents, it's no avail to pursoo me an' Yuba throughout them four feverish days. We drifts from one drink shop to the other, arm in arm, as peaceful an' pleased a pair of sots as ever disturbs the better element. Which we're the scandal of Tucson; we-all is that thickly amiable sech pards as Damon an' Pythias by compar'son shore ain't on speakin' terms. Thus ends my first dooel; a conflict as bloodless as she is successful. How long it would have took me an' Yuba to thoroughly cement our friendships will never be known. At the finish, we-all is torn asunder by the Tucson Marshal an' I'm returned to my camp onder gyard. Me an' Yuba before nor since never does wax that friendly with any other gent; we'd be like brothers yet only the Stranglers over to Shakespear seizes on pore Yuba one mornin' an' stringe him up a whole lot.'"

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QUESTIONS AND ANSWERS

LETTERS asking for general information will be answered in these columns. Letters should be written on one side of the paper, and must be accompanied by the name and address of the writer; not for publication, however. All letters without the name of the writer go to the waste basket.

"Premium" on Coins.

I saw in one of the Sunday papers that there was a premium on an 1893 10-cent piece. If this is so let me know where the premium will be awarded. H. A.

Corvallis, Or.

There is no such thing as a "premium" on coins. Whenever a coin, for any reason, becomes scarce, collectors put an artificial value on it. Great age gives this artificial value, just as it does to Indian baskets, hall clocks, delft ware, andirons and here recently, pewter mugs. It would not be considered a bright question if you asked where the premium was awarded on a delft vase made in 1794, which cost your great-grandfather 29 cents. Persons who have fads pay extravagant prices for rarities which they desire.

As a matter of information the dime coined at San Francisco in 1893 is quoted by dealers as being worth $5, for the reason that only 24 dimes were coined at San Francisco that year. This fact has been stated twice in these columns, and will not be repeated again. Coins minted in San Francisco are marked with the letter "s" on the "tails" side.

Periodicals Not Ordered.

Can a publishing company collect for a magazine which it claims it continued sending after the original subscription expired? The magazine was not ordered nor received after the first subscription, and now they bring a bill for five years. Am I obliged to pay it? Is it necessary to send notice to discontinue the paper after the subscription expires? B. M. B.

The Oregon law on the subject passed in 1889, is:

That whenever any person, company or corporation owning or controlling any newspaper or periodical shall mail or send any such newspaper or periodical to any person in this state without first receiving an order for such, same shall be deemed a gift, and no debt or obligation shall accrue against such person or persons, whether said newspaper or periodical is received by the person or persons to whom it is sent or not.

The Oregonian cannot undertake to interpret the law. It would seem, if you subscribed for one year and did not renew your subscription that the publisher continued to send the magazine at his own risk. Would not this be construed as coming within the claim "without first receiving an order for such"?

Foreign Ministers at Washington.

1. Who are the Ministers from the principal countries of Europe to the United States?

2. Who are the United States Ministers to the principal countries of Asia? B. H. R.

1. Great Britain—Lord Pauncefote.
Germany—Herr von Holleben.
France—M. Jules Cambon.
Italy — Signor Edmondo Mayn des Planches.
Austria-Hungary—L. Hengelmuller von Hengelvar.
Denmark—Mr. Constantine Brun.
Sweden and Norway—Mr. A. Grip.
Ruesia—Comte Cassini.
Turkey—Chekeb Bey.

2. China—Edwin H. Conger, Iowa.
Japan—Alfred E. Buck, Georgia.
Corea—Horace N. Allen, Ohio.
Persia—Lloyd C. Griscom, Pennsylvania.

John Brown's Fellow Conspirators.

Can you tell me the history of Linsday Copic (if that is the right way to spell it), who was hung with John Brown at Charleston, Va., December 2, 1859, for complicity in the Harper's Ferry raid; when he was born? He was a strong Abolitionist in Salem, Ia., in 1845, I think. E. A. M. C.

In connection with the history of the John Brown raid at Harper's Ferry, it is recorded that Edwin Coppoc was hanged December 16, 1859, and that Barclay Coppoc escaped. No mention is made of the birthplace or record of either.

Chickens Running at Large.

Please give the city law on hens and chickens running at large and how to keep them from destroying our gardens. B. F. C.

Ordinance No. 5925 provides:

Section 1. No horses, mules, cattle, sheep, swine, goats, chickens, geese or ducks shall be allowed to run at large or to be herded in any of the streets, alleys, parks, unineloned private grounds or public places in the City of Portland. . . .

Sec. 2. Any animals or fowls described in section 1 found running at large within the limits of this city may be taken by any police officer, or by any person and delivered to the pound-master. . . .

Poll Tax for War Veterans.

Does an honorably discharged soldier of the Spanish-American War have to pay or work a poll tax? F. L. J.

Yes. The law makes no distinction in favor of discharged soldiers.

Baseball in the Philippines.

Did the Oregon Volunteers have a baseball team when they were in the Philippines, and what games were lost and won? Please give me their names and positions. J. A.

The Second Oregon had a baseball team at Manila, composed of Joseph Smith, captain, second base; Roy Doble, short-stop; E. Stansbury, third base; William Jordan, right field; James McKinnon, pitcher; Bert Kerrigan, left field; Dr. A. P. Watson, catcher; Frank Gordon, first base; John Smith, center field. The Oregon club won two games and lost one to the Pennsylvanians. After the insurrection broke out there was no more time to play baseball.

The Gadsden Purchase.

I see by loking on the map a corner of land known as the Gadsden Purchase, for which the United States Government paid $10,000,000. What induced the Government to buy it, and why did they pay such a big price? L. M. B.

It was done to settle a boundary dispute between the United States and Mexico, and to open the way for a Southern railroad route to California. It was hoped to secure a seaport on the gulf, but this failed. The price was not considered high, as 45,000 square miles were secured.

Flags for Contagious Diseases.

What are the different kinds of flags used in Oregon for contagious diseases, and the disease that each represents? STUDENT.

The Portland ordinance requires a green flag for diphtheria, scarlet for scarlet fever, yellow flag for smallpox; for all other diseases a white flag. These colors, we think, are used generally throughout the United States.

The Split Infinitive.

Will you kindly define and give an example of the "split" infinitive? W. N.

"To love" is the infinitive form of the verb "love." It is "split" when "to" is separated from "love." Examples: "To wisely love," "to reverentially love," "to constantly and very deeply love."

Two Mines.

Where are the Santa Fe and Treadwell copper mines, and are they safe investments? J. W. W.

Washington Treadwell quartz mines are in St. Helens district, Washington. Santa Fe gold and copper mine is at San Pedro, N. M. The Oregonian knows nothing of their value as investments.

Graham Flour.

Please explain the difference between whole wheat flour and Graham flour. J. R.

They are practically the same, but Mr. Graham laid claim to peculiar treatment for his flour.

No.

A and B are adjoining farmers. A keeps up his part of the fence good against hogs and cattle. Is he obliged to fence against B's hens and go around and stop up the holes where the hens might get through? C. R.

No.

If a woman marries a man who is not divorced from his former wife, would it be necessary for her to get a divorce to obtain her maiden name again? E. B. B.

Not Expressly.

Will you tell me through The Sunday Oregonian, Did the State of Oregon ever adopt the common law of England? J. W. S.

John Philpot Curran, 1790.

Will you kindly publish the name of the author of the following: "Eternal vigilance is the price of liberty"? W. P.

Washington, D. C., October 6.

Where will the National reunion of the G. A. R. be held this year? What time? A. B. C.

To Various Correspondents.

D. L., Roseburg.—We know of no magazine that gives prizes for poems.

G. B. C.—Nordica was Lillian Norton, daughter of John Norton, a Maine farmer and politician. She kept books in Boston as a girl, and used to get hours off to take singing lessons at the New England Conservatory. The same determination which carried her through that experience finally put her at the top of the operatic stage, after as hard a fight as any woman ever had.

Farmer—North Carolina, South Carolina, Louisiana and Alabama have laws which exclude "illiterate negroes" from the suffrage. There are also restrictive franchise laws in Maryland, Georgia and Arkansas. Article XV of the Constitution of the United States has not been rescinded. It is evident, however, not "in power and full force."

It Didn't Sound Conventional.

Dr. George C. Lorimer, of the Madison-Avenue Baptist Church, New York, when visiting Philadelphia recently, told this story:

"It is queer what a liking young students have for long words and Latin quotations, and what a dread possesses them of appearing conventional. I once knew a promising candidate who was given charge of a funeral in the absence of the pastor of the church. He knew it was customery for the minister to announce after the sermon that those who wished should step up to view the remains, but he thought this was too hackneyed a phrase, and he said instead:

"'The congregation will now pass around the bier."—Philadelphia Times.