THE FIELD OF ELECTRICITY

Its Boundaries Expanding in the Domain of Medicine.

DRUGS ADMINISTERED BY ELECTRICITY

Possibility of Sending the Virtues of Medicine Many Miles—Advantages and Dangers of Its Employment.

It would seem impossible at first thought that the virtue of a drug or a liquid could be carried throgh a wire, as telegraphic messages are carried, and made to penetrate the human body along with the electric current. And yet it is quite certain, as experts in electro-therapeutics know, that something very like this is now not only possible but easy of accomplishment. This phenomenon which has been explained in various ways is dignified by the important name of cataphoresis.

Take for instance a solution of the drug cocaine, soak a sponge with it and fasten the sponge about one electrode of a galvanic battery, the aggressive one or anode should be chosen, from which the current goes in strong flow to the cathode, famous in these days from the Roentgen discovery.

Now place the electrode thus covered with cocaine at any desired part of the body, the other electrode being applied as convenient, and let a current be turned on from the battery. Immediately the cocaine will begin to penetrate the body, literally to penetrate it, as is shown by the fact that the tissues surrounding the anode will become completely insensible owing to the well known anaesthetic properties of cocaine.

There is no doubt that this condition of local anaesthesia results from the cocaine being really carried into the body by the electric current, since when the cocaine and the current are applied separately, no insensibility ensues.

This very convincing experiment was performed several years ago by Dr. Frederick Peterson, the eminent specialist at the New York College of Physicians and Surgeons, who was able by this means to relieve the most intractable cases of neuralgia among his patients and to operate upon animals as he pleased, without drawing from them any signs of suffering. Dr. Peterson accounted for this phenomenon by assuming that in a galvanic circuit thus arranged a current streams from the positive pole to the negative with sufficient force to carry with it through the skin and into the body particles of any substance in solution through which it may pass.

While important as furnishing a convenient means for producing local anaesthesia, this experiment of Dr. Peterson's was but a precursor of many others to follow, such rapid advances having been made in this new field within recent years that it is now possible to diffuse throughout the body, by the pleasant agency of a galvanic current, most of the drugs that have hitherto been administered through the mouth. Millions of children all over the country will rise up and bless the benefactors who shall save them from the nightmare of that occasional dose of castor oil, without mentioning the quinine and other bad-tasting compounds that their good mothers for generations past have been thrusting down their throats. The premise is that electricity will attend to all this ere long, getting the drug where it is needed, almost without the patient's knowledge, and accomplishing the desired result with all the efficiency of the old-time bottle and spoon.

It is true this much to be desired consummation is not yet fully attained, although it is coming fast, but already up-to-date physicians are administering electrically in their regular practice such drugs as strychnine, corrosive sublimate, carbolic acid, aconita and various compounds of lithium and mercury, all with excellent results.

And an arrangement has been perfected which permits the physician to know exactly how great quantities of any particular drug are being carried by the current into the patient's body. Discs of filter paper or tissue paper are placed under the electrode, and upon these the proper amount of the solution is dropped. Where great precision is not required, as in administering such drugs as iodide of potash, the ordinary sponge electrode is sufficient, and where it is desired to introduce a drug throughout the whole body an ordinary bath tub is made to serve as the anode by placing a sheet of zinc at the bottom, this being connected with the battery by an insulated copper wire. The patient is then immersed in the water of the bath in which has previously been dissolved the drug to be administered and the electric current with its medicinal properties passes through the water into the body and out again by the cathode which the patient holds in one hand, dropped over the side of the tub. Fancy being cured of one's ills by merely giving a little attention to one's morning bath!

By these three methods it is possible to administer drugs electrically, their presence in the blood being proved by repeated tests and their effects being quite as powerful as when taken in the ordinary way. Of course there are diseases which cannot yet be treated thus; but, on the other hand, there are diseases where much better results have attended this new treatment than had ever been obtained in the old way, for there are certain drugs whose action is almost neutralized by the fluids of the stomach. In gout, rheumatism and skin diseases the surface application of drugs by electricity has special advantages, and in the main it is pleasant to the patient.

An important development of this method of cataphoresis is that conceived by Doctor Gautier of Paris and used with success in New York by Dr. William J. Morton, son of the discoverer of anaesthesia. Knowing that chemical changes are constantly going on at the electrodes of a galvanic circuit, it occurred to Dr. Morton that it might be possible by using electrodes of various metals to make electric apparatus not only the means for administering any desired drug, but to make it actually produce the drug itself. This may seem puzzling, but a little reflection will make it clear enough. It is known, for instance, that most of the drugs used by physicians are merely the salts of ordinary metals, iron, copper, zinc, aluminum, etc. Now it is known that whenever an electrode made of one of these metals, easily compounded, is brought in contact with an affected tissue of the body there takes place a chemical change from the union of the metal in the electrode with the acids and gases liberated from the tissue as soon as the current begins to flow. This chemical change results in the production of a compound salt of the metals composing the electrode, and if the physician has taken care to choose such a metal as will give the chemical compound he desires for the trouble in hand, it is plain that the apparatus will automatically produce the remedy for the trouble at the very point of the body where it is needed.

This method has been found so full of promise that Dr. Morton has arranged for his patients numerous bulbs and needles in various shapes, to be used in various parts of the body and made of copper, iron, zinc and other metals whose salts enjoy valuable medicinal properties.

If any one doubts the rapid formation of metal salts in this curious process of electric diffusion, he will be quickly convinced on seeing how soon a green circle spreads through the tissues around a copper needle electrode thrust into the skin. Almost in an instant the sulphate of copper forms and the flesh about the point where the current enters takes on the color of apple green to a distance of half an inch or more in all directions. This rapid action and thorough diffusion possess evident advantages over any mere laving or injection that could be practiced in such troubles as tonsilitis, urethritis, catarrh and various forms of tumors. In all such cases the electrode under the action of the current deposits in the tissues a metallic salt efficacious for cure of the particular malady, and then this salt, also under the agency of the current, is driven into the tissues, just as Dr. Peterson's cocaine was driven in on the familiar principle of cataphoresis.

Pursuing his experiments in this same direction, Dr. Morton has recently perfected a means for producing anaesthesia of the gums that is already in use by some of the more alert-minded dentists in New York and will doubtless soon be known all over the country and be hailed as a blessing by thousands who now shrink from the suffering incident to having teeth filled and put in order. Instead of using cocaine alone, as Dr. Peterson did, Dr. Morton uses a mixture of guaiacol and cocaine, the resulting insensibility being more profound than that of cocaine alone and being produced in two-thirds less time and with two-thirds less current. Not only may teeth be filled by this method with absolute painlessness, but the most difficult operations in dentistry, involving deep cutting into the gums as for tooth implantation, may be performed without causing the patient any inconvenience.

These most welcome results are obtained by applying a cataphoric electrode, somewhat resembling a pair of curling irons, which holds the gums on either side and produces complete anaesthesia when the current passes into it from an ebonite cup in the handle, wherein is contained the cocaine and guaiacol.

In all that has been mentioned so far the drugs to be introduced into the body have been placed at the point of application, but there are physicians more daring or far-seeing than their fellows, who declare that similar results may be obtained from a distance. Prof. J. R. Buchanan declares that the electric current has the power of carrying the virtues of a drug through a long length of wire and introducing these unimpaired into the body of the patient who holds the electrodes. More than once he has ranged in a semicircle several of his students or assistants and passed through their joined hands a current bearing the essence of some familiar drug. And invariably, after receiving the current for a certain length of time, the young men have recognized its character just as they would have done had they swallowed it and been able to say: "That is quinine," "that is soda," "that is sulphur," "that is hyoscyamus," etc., and so, the doctor claims, these young men would show in their bodies and subsequent symptoms the real presence and effect of the drugs thus introduced.

Just how far the electric current can carry the power of drugs has not yet been determined, but there are enthusiasts in electro-therapeutics who see nothing improbable in sending doses of medicine throughout a hospital by means of wires running from the central office to the various wards and cots. If that ever comes to pass, the house physician may sit quietly in his armchair and treat a thousand patients with most of the drugs in the pharmacopeia by merely playing a keyboard of electric buttons. And the patients themselves may be in utter ignorance that these drugs are being introduced into their bodies by imperceptible currents. And what possibilities for crime are not opened up by such a conception, for if these theories prove true, the scientific murderer of the twentieth century will be able to kill his victims as he pleases by merely sending poison-laden currents through their beds and bodies while they sleep.

"A few days ago," writes Dr. Buchanan, "I sent medicated currents from Los Angeles to Pasadena, eight miles. Three different medicines were used, and the currents were received in Pasadena by five intelligent persons, each of whom recognized the distinct characteristic effects of each medicine as they would be felt from a small dose, but the force of the galvanic battery was not sufficient to make the result as effective as I desired." The same writer adds: "I think it probable that with a continuous wire and a sufficient electric motive force, an electric dose might be sent from San Francisco to New York."

And, lest any one think that we are now in the realm of vain speculation, let me say that so great an authority as Dr. Luys of Paris believes, and has in a measure demonstrated, that electric currents may be arranged so as to have a well understood effect upon a patient's mental condition, one current producing melancholy, another gladness; one causing nervousness and irritability, another perfect calm and a desire for sleep; one stimulating every organ of the body, another producing just the contrary effect, so that, if all this comes to pass, we may expect to see every Sunday school provided with an outfit of electric wires, charged with highly moral currents, while the criminals of the future will be reformed by discriminating physicians, who will drive all the virtues into them with the help of galvanic batteries.

CLEVELAND MOFFETT.

THE CURBSTONE ARGUMENT.

Failure of an Attempt to Turn It to Other Free Silver Profit.

Two men who encountered each other near a prominent street corner a few mornings ago stopped, shook hands, inquired after each other's health, and spent a minute or two in desultory talk, relates the Chicago Tribune.

Then they shook hands again, asked to be remembered to each other's family, and were about to separate, when one of them said:

"By the way, Higgins, I presume you are for Bryan and free silver?"

"Free humbug!" retorted the other. "I'm for McKinley and prosperity!"

"I've got nothing in particular against McKinley," was the rejoinder, "except that he's a protectionist and a gold standard man, and wouldn't make a good president. The issue of this campaign is——"

"I know exactly what you're going to say. The issue of this campaign——"

"Is free silver, and you know it, Higgins! Don't try to squirm out of it!"

"Who's trying to squirm out of it, Rogers? We're ready to meet you on the free silver or any other issue! Of all the blamed fool, nonsensical, idiotic——"

"You're an infernal goldbug! That's what you are, Higgins! I thought you'd have more sense——"

"I've got sense enough to be honest, Rogers! I've got sense enough to be honest! I don't want to swindle my creditors by paying my debts in 50-cent dollars!"

They had raised their voices, and a crowd had begun to gather, but the two men were oblivious of their audience, and went on.

"Look here, Higgins!" roared Rogers, "if you can't discuss a political question without calling names——"

"Calling names, you featherhead? You called me an infernal goldbug not ten seconds ago!"

"Well, that's what you are: Any man that wants to put the currency system of this country into the hands of Great Britain is a public enemy, and he ought to be hung! By George, he ought to be hung!"

"Any man that hasn't brains enough to see that free silver will bring the country to the verge of ruin is an idiot, and ought to be in some asylum for the feeble-minded!"

"Give it to him!" yelled a number of voices.

Paying no attention to the interruption, Higgins resumed:

"If you would only read the miserable, cheap, namby-pamby little speeches your candidate, Bryan——"

"McKinley can't make a speech! He can't make a speech to save his life!"

"That's a——"

"Look out!"

"If he calls you a liar hit him!" vociferated an angry free silverite. The crowd now numbered a hundred or more.

"Gentlemen," said Rogers, turning to the bystanders, "I appeal to you! I asked this man a simple question, and he chose to take offense. If he were disposed to discuss the silver issue fairly——"

"Discuss the silver issue!" shouted Higgins. "Gentlemen, he hasn't intelligence enough to know——"

"I've got intelligence enough," retorted Rogers, at the top of his voice, "to know what every man in this crowd needs. You will pardon me, gentlemen," he went on rapidly, opening a small valise he carried in his hand, "if I take this opportunity of calling your attention to a little article which I am introducing in this city. I call it the Universal Implement. It will pare potatoes without wasting any of the body of the potato, slice tomatoes, shave cabbages into strings, trim a lampwick, cut the pages of a magazine, remove warts——"

He paused and looked about him. The crowd had fled.

How a Queen Keeps Young.

The queen of Denmark, who, although she is 78 years of age, is still pretty and retains her vivacity and charm, declares that the only way she keeps young is by having young people about her. She always has a houseful of them and likes nothing better than to be surrounded by her grandchildren and their friends. She affirms that she is aunt to all of Europe to which she is not grandmother.

Theories of cure may be duscussed at length by physicians, but the sufferers want quick relief; and One Minute Cough Cure will give it to them. A safe cure for children. It is "the only harmless remedy that produces immediate results."

PNEUMATIC TUBE SYSTEMS

Improved Means of Expediting the Mail Service in Cities.

PRESENT METHODS BEHIND THE TIMES

Details of an Experimental Pneumatic Plan and What May Be Accomplished—Growing Demand for Rapid Transit.

The postal service of the United States, says a writer in Harper's Weekly, is in a measure accountable for the length of time taken in the preliminary forwarding of mail matter. No possible fault can be found with the general expedition. Postal trains running at the highest rate of speed carry the mails. Methods of handling large masses of matter are marvelous for celerity. Nevertheless, there are in all the great centers of population delays more or less vexatious in the starting of mail matter.

The perfect postal service is really nothing more than an express business. With the assurance of the perfect safety of the objects received and delivered, it is the element of speed which is paramount, but the entire system of the postoffice is at fault so far as relates to the initial movement of mail matter in the large cities. It is not synchronous. A letter is mailed from New York to Chicago. Once put in the mail car it tears along at the rate of say forty-five miles an hour until it reaches its destination. But why should that same letter on its way from the general postoffice in New York to the Forty-second Street depot, during its first transit, take at the very least forty minutes to go over an insignificant 3.23 miles? or as much time again on arrival at Chicago? There are, then, always two delays.

In the endeavor to become familiar with the many conditions of the initial movement of mail matter in the leading cities, a series of questions was addressed to postmasters and the following answers were received: To the query, "Distance in miles from your main office to the principal railroad depot to which you send, or from which you receive, the largest portion of your mail matter?" the answers received were: In New York the distance was 3.23 miles; time occupied, 40 minutes. For Philadelphia, .68 of a mile; time, 10 minutes. In Chicago, 1.3 miles; time, 30 minutes. In Brooklyn there were two distances, the one 1.63 and the other 3.60 miles, the time being 27 and 35 minutes. Should there be a fog in the East or North river during the water transportation of the Brooklyn mail, several hours might elapse before a landing could be made. In Boston, there being four railroad stations, with 74-100, 62-100, 89-100 and 53-100 of a mile, the time varied from 20 to 25 minutes. In St. Louis the distance was 1.18 miles; the time, 15 minutes. In Baltimore, 1½ miles; and the time, 25 minutes. The variations in the time are due to the accidents of position, but invariably the larger the city the longer is the time required.

Such alleviations as have been brought about by the Postoffice department by the use of surface roads are most worthy of praise, but in the large cities obstructions to rapidity of movement must be constant. Streets are being continually blocked. When there is a heavy snow storm all the roads leading from depots to postoffices, or in the opposite direction, are for a time impracticable. In New York the difficulties of sending or receiving mail matter within its own limits are always increasing. When there is a Greater New York, or an enlarged Chicago, the trouble must ever go on in an augmenting quantity. Why should there not be, not one or two, but three or four daily deliveries of the letters written in New York and addressed to New York.

Branch offices in all the great cities are necessities and they will be always increasing in number. The question having been asked of postmasters as to the number of their branch offices and the total distances from the main central office, a summary of the replies is as follows:

	Branch offices. No.	Total distance to branch offices. Miles.
In New York	24	155.22
In Philadelphia	37	187.62
In Chicago	40	222.59
In Brooklyn	16	80.42
In Boston	21	79.60
In St. Louis	23	35.60
In Baltimore	31	195.08

As to the time necessary to send a mail bag from any central office to a branch office, the data, if available, would be valueless. They would vary according to conditions. In certain cases a letter carried 100 miles by railroad within three hours arrives at a city, plus the time necessary to transport it to and from the main office by wagon. Then the letter may have to go by wagon to a branch office. Sometimes this additional say five miles occupies a time represented by an hour and a half. The railroad has carried the letter at a speed of 33⅓ miles an hour, while the wagon or other method of transportation has gone at the rate of three and one-third miles in the hour. Then the average speed of the letter over a total distance of 105 miles is only 23.333 miles per hour, and that is very slow time indeed. When many tons of mail matter must be forwarded, it is in overcoming the vis inertiae at the beginnings, twice occurring, that the main difficulty lies.

This bulk of mailable matter, unless all the wheels of commerce be blocked, will go on augmenting and particularly in the the large cities, because they are the centers of receipts and deliveries, and it makes no matter whether they are on the seaboard, as is New York, or central, as is Chicago. The following statistics show this: In New York, during 1890, the bulk of mailable matter was 332 tons. In 1895 it was 486 tons. In Philadelphia the increase is 10 per cent. In Chicago this increase has gone with leaps and bounds, and for a certain class of matter has showed an increase of 30 per cent. In Boston, 8½ per cent; in St. Louis, 16 per cent, and with a notable augmentation in Baltimore.

As to the cost of the initial movement of the mailable matter, that varies, and the exact figures are obtainable from the postmaster general. It must amount to a good round sum. For instance, the service between New York and Brooklyn is carried on by wagons, making thirty-six trips daily. Its speed is fair, but it never can be rapid enough to suffice for the wants of letter communication between two great cities; and exactly similar conditions exist in St. Louis, and are particularly emphasized in Chicago.

Considered, then, in its proper light, this city transportation of mail matter is distinctly behind the age, and belongs to the first half of the present century. Nothing herein is even intimated as to the safety of such conveyance of mail by wagons or surface cars. It is exceptional where robbery is brought to light. But the main factor of the postal system being speed, all city movement of mail is provokingly slow; and, what is worse, in the time to come when there will be more material to be sent and more chances of streets being blocked, this movement will be even more snail-paced.

On a meadow near Burlington, N. J., there is stretched along for a distance of half a mile a line of connected iron tubing. These tubes are made at a neighboring foundry and are twenty-four inches in diameter With the exception that they have two grooves cast in them, they are nothing but common water mains. The tubes are just as they came from the foundry. Like all such piping, requiring connecting so as to withstand ordinary water pressure, the tubes have been faced at the ends, and are secured with nuts and bolts, a slight coating of litharge or white lead having been applied, as usual, to the squared surfaces.

There is a small engine, which runs a blower of no extraordinary size or uncommon pattern. The motive power, placed in a temporary house, is an ordinary engine of not more than twenty horse-power. The carrier is a circular metal box of sheet-iron or bronze. It runs on four wheels, two of which are above and two below. The wheels are mounted on pivots, which have a free lateral movement; of these four wheels, two of them follow the upper groove, two the lower groove. The engine is set in motion, the fan revolves and the air at the start is received in a short cast-iron tube and stored. As soon as a sufficient pressure is reached, a comparatively low one of sixty pounds, taking hardly any time, the carrier is set by hand in the tube, the wheels adjusted to the grooves, the air is let on, and away travels the carrier along the tubes, around the curve, and comes out at the exit or terminal.

Starting at one or the other side of the engine house, according to where it is placed, the carrier makes the entire circuit. Now as to the speed. The half mile is made in fifty seconds, then the whole mile would be made in a minute and forty seconds. For all practical purposes the carrier moves at the speed of thirty-three miles an hour. This speed is not a maximum but a minimum one, for the absolute air pressure on the carrier is only six ounces to the square inch. Very much faster time could be imparted by an increased air pressure.

It can be understood that for the return trip of the carrier all that has to be done is to reverse the direction of the blower. The carrier is then sucked through the line of tubing and so arrives at the terminal from whence it may have first started.

In a series of workings made for the writer, carriers were repeatedly sent forwards and backwards, all arriving safely at their destination and at the rate of speed indicated. There was a little sound of in-rushing air at the start, a long rumble and then in a short time, a little over the half minute, there was the carrier, quietly landed.

The carriers used were of sheet-iron, and would weigh 450 pounds. New carriers, of bronze, which would be lighter to handle, are to be substituted; but the heavy iron ones worked perfectly. In the carrier there would be placed the mail bags, many of them, the length of the carrier being three feet and diameter twenty-two inches. These carriers closed by means of two locks and keys, so that they could be only opened by the proper postoffice officials.

As to the matter of speed, that being settled, then comes the question of the continuous movement of the carriers. If there were long intervals of time necessary between the sending of one carrier and the next one, the rapid movement of a single carrier would not suffice. The question of continuous service presents no difficulty. Just as fast as a carrier could be put into the tube it went on its way, to be followed by other carriers, and all of them traveled along at the same rate of speed, and were delivered seriatim at the terminals, and without interference. The method of pneumatic transmission makes an air cushion between any two carriers, so that telescoping seems to be impossible. In front and back of each carrier there is a shield of rubber. There might, however, be another danger. If the carrier and its load, the mail bags, were "fired," like Captain Zalinsky's shells, from a pneumatic gun, and the carrier with the letters shot into the air, or ejected parallel with the ground at the terminals, the contents might be torn to atoms. To guard against such contingencies there is the simplest of devices. As the carrier approaches its terminal, say at the distance of fifty feet, there is a gate which holds in the air. As the carrier nears its terminal the speed is naturally diminished. The air acts like a brake. When quite near the end, by an automatic movement, imparted by the carrier, the gate opens. The carrier then is delivered slowly—its impetus is gone. It has just speed enough to roll its way leisurely along an open tramway which has a slight up grade, and then it comes to rest in a tube where there is a last air cushion.

How is switching carried out? The carrier would be required to deliver its mail-bags at various railroad depots or branch postoffices. Any one who has seen the type-setting machinery of today can at once appreciate what is exactness of automatic movement, and how the many types are switched off, each one finding its own particular receptacle. The carriers have each its individuality, and will change direction automatically, moving to the right or left of the main tube and passing along a side line. Many trials were made in switching carriers on this pipe line, and there were no wrong deliveries. Close to the fence there is a switch-box, and the carrier is shunted off here and travels through a distinct tube, which is shown to the extreme right.

As to the size of the tubes, twenty-four inches, this could be notably increased did the exigencies of any large mail service require it. It would not be a question of strength of iron tube, but increase of air pressure.

In working the passage of the carriers hardly any precautions were necessary. As to the plant itself, the tubing had been exposed through the winter to the cold and during this spring to the heat, and no measures had been taken to protect it. There might have been expansion, contraction or deflection, but that seemed to make no difference. The apparatus worked at once, without a hitch, and required no special skill.

There always will be accidents in any mechanical system, as likely to occur to a watch as to the engine of a transatlantic steamer. If, then, a carrier should come to grief, or stick, say, from a broken wheel, just where the accident happened can be indicated by a common and well known electrical device. Then, again, the tubes are large enough for human exploration. There is nothing new in pneumatic propulsion. It is centuries old. For the transmission of mail matter, however, plans before this have been little more than toys, and complicated at that. They were impracticable for the carrying on of the vast business of great postoffice centers as they exist today in New York, Philadelphia and Chicago. It is the simplicity, the inexpensive character, of this Burlington plant which is remarkable. As to the mounting of grades, even steep ones, with this system, such difficulties need barely be noticed.

Supposing, then, that from the main postoffice in New York City such a pipe line were laid to the Forty-second Street depot. Within four minutes there would be service between these two points. It could be worked to all the depots and branch offices. The letter written by one New Yorker and addressed to another New Yorker, no matter how far distant within the city, would certainly reach him within a couple of hours, the time of the longest hand delivery being added. There could be three or four of such local deliveries in every ten hours, and as many answers given.

The initial movement of mail matter in our large cities is lamentably behind that of London, Paris, Berlin, or Vienna, for in most of these capitals there is a partial transmission of mails by means of pneumatic tubes. It has been noted that in no country is the man whose business it is to carry or collect or sort mail of so high an order of intelligence as the one attached to the United States Postoffice department, but the machinery to add to his efficiency is inadequate at the very start.

WORLD'S FAIR COINS.

Columbian Halves and Isabella Quarters a Drug in the Market.

Three years ago everybody wanted a Columbian half dollar and an Isabella quarter, and wanted them bad, says the Chicago Inter Ocean. If anybody who wanted either of the World's fair souvenirs had enough to pay over a dollar for it he could generally get it without much trouble. Sentiment, however, is just about as liable to slump as the wheat market and any one who has the hard money silver mementos of the fair today could probably be persuaded to part with a Columbian half dollar for about 51 cents, and hand over the Isabella coin for about a cent, plus a quarter of a dollar. The coins never enjoyed the popularity that was expected. Two million five hundred thousand of the Columbian half dollars were coined and 40,000 Isabella quarters. Four hundred thousand of the half dollars and about 6,000 of the quarters are still in the subtreasury of the United States right here in Chicago in the Rand-McNally building. About a year and a half ago a rule was made by the Treasury department that these half dollars could be evenly exchanged for gold. The World's fair souvenir sentiment was not quite dead yet and there war enough of it alive to send $200,000 in gold buzzing straight over to the subtreasury to pull out $200,000 in Columbian halves, or 400,000 of the coins. At that time there were about 800,000 of the halves in the subtreasury. About half of this amount was left after the first rush was made to exchange gold for the halves on even terms. Almost this entire half still remains in the subtreasury and there appears to be no wild desire on the part of holders of gold to exchange any of it for the Columbian souvenirs.

Assistant Subtreasurer J. C. Pratt said to a representative of the Inter Ocean that in all probability the Treasury department would some day give out the Columbian silver money as ordinary currency.

A most interesting regulation exists regarding the disposition of the Isabella quarters. As only 40,000 of the quarters were ever coined, they are of course rare, and far more scarce than the halves. According to a rule of the treasury, these quarters are only paid out on drafts of World's fair officials. Of course many have been taken out of the treasury under this regulation and the $1,200 or $1,500 remaining in the vaults of the subtreasury will probably be exhausted before very long by World's fair drafts. Mr. Pratt said that so far as he could see the half dollars were not now prized very highly by the holders of them, with whom he had come in contact in an official way, as he says they come in quite often to the treasury in ordinary business transactions, just as does the commonplace currency, without any attention being paid to their souvenir qualities by the man passing them in. Since the quarters are not so plentiful, they are naturally valued a little more highly and are seldom, if ever, seen in the currency handled in business transactions.

The Time for Building

Up the system is at this season. The cold weather has made unusual drains upon the vital forces. The blood has become impoverished and impure, and all the functions of the body suffer in consequence. Hood's Sarsaparilla is the great builder, because it is the One True Blood Purifier and nerve tonic.

Hood's Pills become the favorite cathartic with all who use them. All druggists. 25c.

The Australian Woman's Progress.

Woman has bounded to the front in Victoria. Miss Robina Barton all but succeeded in her application to the Marine board for a second mate's certificate on board foreign-going vessels, and now Miss Alfrida Hilda Gamble and Miss Janet Lindsay Greig have been duly appointed and have commenced their duties as resident medical officers of the Melbourne hospital, a large institution in the heart of the city accommodating some hundreds of patients suffering from all sorts of miscellaneous complaints. It has been the custom of the hospital authorities to take the first six graduates in the final honor list of the Melbourne University Medical School every year and appoint them resident medical officers of the institution, but this year they were confronted with an unexpected difficulty, for the names of two women appeared on the list. Among the profession and in the press the battle waged hotly as to the claims of the women, but as the hospital committee includes politicians who foresee the approach of the franchise for women, the woman candidates simply "walked in," as the sporting writers put it, when the question came to a division, and they commenced work along with the four new male residents who are their colleagues. Miss Greig, being the lowest on the list, was, according to custom, placed in charge of the casualty ward, and she had a lively time of it for the first night. She is a very girlish looking woman of three-and-twenty or thereabout, and as she went on duty at midnight in a simple black skirt and a cotton print blouse she hardly looked physically strong enough to deal with the mad-drunk larrikins and howling declassees who are nightly brought to the hospital in a more or less battered condition for surgical treatment. But before the new doctor went off duty the next day she showed that emergency develops capacity, although the experience must have put her nerves to a rude trial.

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PROPOSED CONSTITUTIONAL AMENDMENTS

The following proposed amendments to the Constitution of the State of Nebraska, as hereinafter set forth in full, are submitted to the electors of the State of Nebraska, to be voted upon at the general election to be held Tuesday, November 3, A. D. 1896:

A joint resolution proposing to amend sections two (2), four (4), and five (5), of article six (6) of the Constitution of the State of Nebraska, relating to number of judges of the supreme court and their term of office.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section two (2) of article six (6) of the Constitution of the State of Nebraska be amended so as to read as follows:

Section 2. The supreme court shall until otherwise provided by law, consist of five (5) judges, a majority of whom shall be necessary to form a quorum or to pronounce a decision. It shall have original jurisdiction in cases relating to revenue, civil cases in which the state shall be a party, mandamus, quo warranto, habeas corpus, and such appellate jurisdiction, as may be provided by law.

Section 2. That section four (4) of article six (6) of the Constitution of the state of Nebraska, be amended so as to read as follows:

Section 4. The judges of the supreme court shall be elected by the electors of the state at large, and their term of office, except as hereinafter provided, shall be for a period of not less than five (5) years as the legislature may prescribe.

Section 3. That section five (5) of article six (6) of the Constitution of the State of Nebraska, be amended to read as follows:

Section 5. At the first general election to be held in the year 1896, there shall be elected two judges of the supreme court one of whom shall be elected for a term of two (2) years, one for the term of four (4) years, and at each general election thereafter, there shall be elected one judge of the supreme court for the term of five (5) years, unless otherwise provided by law; Provided, That the judges of the supreme court whose terms have not expired at the time of holding the general election of 1896, shall continue to hold their office for the remainder of the term for which they were respectively commissioned.

Approved March 29, A. D. 1895.

A joint resolution proposing an amendment to section thirteen (13) of article six of the Constitution of the State of Nebraska, relating to compensation of supreme and district court judges.

Be it resolved by the Legislature of the State of Nebraska:

Section 1. That section thirteen (13) of article six (6) of the Constitution of the State of Nebraska be amended so as to read as follows:

Sec. 13. The judges of the supreme and district courts shall receive for their services such compensation, as may be provided by law, payable quarterly.

The legislature shall at its first session after the adoption of this amendment, three-fifths of the members elected to each house concurring, establish their compensation. The compensation so established shall not be changed oftener than once in four years and in no event unless two-thirds of the members elected to each house of the legislature concur therein.

Approved March 29, A. D. 1895.

A joint resolution proposing to amend section twenty-four (24) of article five (5) of the Constitution of the State of Nebraska, relating to compensation of the officers of the executive department.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section twenty-four (24) of article five (5) of the Constitution of the State of Nebraska be amended to read as follows:

Section 24. The officers of the executive department of the state government shall receive for their services a compensation to be established by law, which shall be neither increased nor diminished during the term for which they shall have been commissioned and they shall not receive to their own use any fees, costs, interests, upon public moneys in their hands or under their control, perquisites of office or other compensation, and all fees that may hereafter be payable by law for services performed by an officer provided for in this article, shall be paid in advance into the state treasury. The legislature shall at its first session after the adoption of this amendment, three-fifths of the members elected to each house of the legislature concurring, establish the salaries of the officers named in this article. The compensation so established shall not be changed oftener than once in four years and in no event unless two-thirds of the members elected to each house of the legislature concur therein.

Approved March 29, A. D. 1895.

A joint resolution proposing to amend section one (1) of article six (6) of the Constitution of the State of Nebraska, relating to judicial power.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section one (1) of article six (6) of the Constitution of the State of Nebraska be amended to read as follows:

Section 1. The judicial power of this state shall be vested in a supreme court, district courts, county courts, justices of the peace, police magistrates, and in such other courts inferior to the supreme court as may be created by law in which two-thirds of the members elected to each house concur.

Approved March 29, A. D. 1895.

A joint resolution proposing to amend section eleven (11) of article six (6) of the Constitution of the State of Nebraska, relating to increase in number of supreme and district court judges.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section eleven (11) of article six (6) of the Constitution of the State of Nebraska be amended to read as follows:

Section 11. The legislature, whenever two-thirds of the members elected to each house shall concur therein, may, in or after the year one thousand eight hundred and ninety-seven and not oftener than once in every four years, increase the number of judges of supreme and district courts, and the judicial districts of the state. Such districts shall be formed of compact territory, and bounded by county lines; and such increase, or any change in the boundaries of a district, shall not vacate the office of any judge.

Approved March 30, A. D., 1895.

A joint resolution proposing to amend section six (6) of article one (1) of the Constitution of the State of Nebraska, relating to trial by jury.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section six (6), article one (1) of the Constitution of the State of Nebraska be amended to read as follows:

Section 6. The right of trial by jury shall remain inviolate, but the legislature may provide that in civil actions five-sixths of the jury may render a verdict, and the legislature by also authorize trial by a jury of a less number than twelve men in courts inferior to the district court.

Approved March 29, A. D., 1895.

A joint resolution proposing to amend section one (1) of article five (5) of the Constitution of Nebraska, relating to officers of the executive department.

Be it resolved and enacted by the Legislature of the State of Nebraska.

Section 1. That section one (1) of article five (5) of the Constitution of the State of Nebraska be amended to read as follows:

Section 1. The executive department shall consist of a governor, lieutenant governor, secretary of state, auditor of public accounts, treasurer, superintendent of public instruction, attorney general, commissioner of public lands and buildings, and three railroad commissioners, each of whom, except the said railroad commissioners, shall hold his office for a term of two years, from the first Thursday after the first Tuesday in January, after his election, and until his successor is elected and qualified. Each railroad commissioner shall hold his office for a term of three years, beginning on the first Thursday after the first Tuesday in January after his election, and until his successor is elected and qualified; Provided, however, That at the first general election held after the adoption of this amendment there shall be elected three railroad commissioners, one for the period of one year, one for the period of two years, and one for the period of three years. The governor, secretary of state, auditor of public accounts and treasurer shall reside at the capitol during their term of office; they shall keep the public records, books and papers there, and shall perform such duties as may be required by law.

Approved March 30, A. D., 1895.

A joint resolution proposing to amend section twenty-six (26) of article five (5) of the Constitution of the State of Nebraska, limiting the number of executive state officers.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section twenty-six (26) of article five (5) of the Constitution of the State of Nebraska be amended to read as follows:

Section 26. No other executive state officers except those named in section one (1) of this article shall be created, except by an act of the legislature which is concurred in by not less than three-fourths of the members elected to each house thereof;

Provided, That any office created by an act of the legislature may be abolished by the legislature, two-thirds of the members elected to each house thereof concurring.

Approved March 30, A. D., 1895.

A joint resolution proposing to amend section nine (9) of article eight (8) of the Constitution of the State of Nebraska, providing for the investment of the permanent educational funds of the state.

Be it resolved and enacted by the Legislature of the State of Nebraska:

Section 1. That section nine (9) of article eight (8) of the Constitution of the State of Nebraska be amended to read as follows:

Section 9. All funds belonging to the state for educational purposes, the interest and income whereof only are to be used, shall be deemed trust funds held by the state, and the state shall supply all losses thereof that may in any manner accrue, so that the same shall remain forever inviolate and undiminished, and shall not be invested or loaned except on United States or state securities, or registered county bonds or registered school district bonds of this state, and such funds, with the interest and income thereof are hereby solemnly pledged for the purposes for which they are granted and set apart, and shall not be transferred to any other fund for other uses.

Provided, The board created by section 1 of this article is empowered to sell from time to time any of the securities belonging to the permanent school fund and invest the proceeds arising therefrom in any of the securities enumerated in this section bearing a higher rate of interest, whenever an opportunity for better investment is presented.

And provided further, That when any warrant upon the state treasurer regularly issued in pursuance of an appropriation by the legislature and secured by the levy of a tax for its payment, shall be presented to the state treasurer for payment, and there shall not be any money in the proper fund to pay such warrant, the board created by section 1 of this article may direct the state treasurer to pay the amount due on such warrant from moneys in his hands belonging to the permanent school fund of the state, and he shall hold said warrant as an investment of said permanent school fund.

Approved March 29, A. D., 1895.

A joint resolution proposing an amendment to the Constitution