ard of the White House during the Hayes

and a light tea at 7 P. M.

"He was very fond of a good beefsteak and he always had baked potatoes for breakfast. He had a way of his own for fixing these.

He would have the potatoes broken open a

soon as they came upon the table, and pre-

COFFEE AND APOLLINARIS WATER.

consisted of cold meats, roast turkey, duck or beef cut down in slices and a salad. This

with bread and butter, coffee and tea con-stituted the noon meal. Our biggest meal

was at dinner, which was served at 6 P. M.

It was served in courses: First, there were the cysters on the half shell, then a fillet or roast of lamb, with some kind of croquettes

Mrs. Hayes dearly loved angel's food cake. We finished the dinner with a cup of atter-

dinner coffee, and the first part of it was al-ways washed down with Apollinaris water.

President Haves was very fond of early He dearly doted on duck, and he had

ABTHUR A NIGHT HAWK.

Arthur never had his dinner before 8 o'clock,

and his friends often sat at the table as lat

as 12 or 1. This would run the dishwash-

as 10 o'clock in the morning.
"President Hayes had wine only once or

was here. Garfield gave no state dinners while he was in the White House, but

Arthur's dinners were noted for the fineness

of their wines, and Andrew Johnson had a

special brand of sherry which was very popular. Johnson was very fond of whisky,

and kept a jug of old Bourbon always near

him. He was drunk at his inauguration as

Vice President, and he became so from hav-

ing been on a spree the night before, and going to the Capitol on an empty stomach.

OVERESTIMATED HIS CAPACITY.

"When he got there he found himself very

faint, and asked John W. Forney it he

could not give him a drink. Forney was, I think, the Clerk of the Senate, and he went to one of the cupboards, pulled out a whole bottle of rye whisky and handed it to Andy

Johnson. Johnson took a goblet and poured it full of the amber-colored liquid

and drank the whole of it in three swallows.

the burning fluid swashed around in his

empty stomach it was no wonder that it made him drunk. About ten minutes after

this he stood up to be inaugurated Vice President, and, to the horror of all, began to make a speech. Everyone could see that he was drunker than the traditional boiled

owl, and though there was an attempt to

Washington generally drank two glasses of old Maderia while at dinner, and Jackson on the night of his inauguration spoiled the East Room carpet with the barrels of punch which he had brought in to treat his guests.

quite as much good as he who does not."

JOHANN STRAUSS' OPERA.

New Production.

a gentleman, whom she mistakes for her husband. After she arrives home she nar-

rates her adventure, whereupon Knight Pazmann rises in his might and his stirrups

and swears, like the ancient Queen Isabella of Spain, nevermore to change his dress until he finds the scoundrel who insulted

Ritter and wife now travel near and far

pursning the villain, and finally come to

the King's court, where the injured lady recognizes in His Majesty the man they are

A Lady's Shoe Box.

top stuffed with excelsior kept in place by

stool, as well as with a most use ul recepta-

Philadelphia Times. 1

his wife.

St. Louis Republic.]

FRANK G. CARPENTER,

"Jefferson always used the finest of wines,

hush the matter up it was all in vain.

"At 1 o'clock I served his lunch. This

Mocha and Java.

strange Indians, who may have come from the West, and may even claim to have been in the immediate vicinity of the new Messiah, have recently joined the Sioux at these agencies is indisputable. They are spoken of as apostles of the new religion and it is by their advice that the Indians have cathered into camps, given up work of all kinds and gone to esting, praying, singing and dancing-until the millenium

TENETS OF THE NEW FAITH.

The excitement began among the Sioux at the great council of the Sioux Nation, neld about the middle of September, and is the direct result of the exhortations of In dian emissaries from Montann, where the Messiah was said first to have been seen last spring. The main article of the new creed is the belief that the present surface of the North American continent will be covered 30 feet deep by a new stratum of soil, which shall be inhabited by Indians only and be thick with game as were the prairies before the white man came. Beneath his new stratum the white man and his cities and his railroads and his steamboats and his civilization shall be buried in the twinkling of an eye, and the New World shall be as if it had never known him, or at

least as it was 300 years ago.
But the Indians—and here is a strange thing-shall not be overwhelmed in the general rate. They will be endowed with supernatural strength to wrestle with the difficulties of the occasion, and will squirm through the new soil until, after much labor and many fears and lamentations, the red man shall at last struggle out to the new surface of the new earth where they will find grass waist high and immense herds of buffalo, antelope and wild horses ready at hand!

There is something touching in this happy restoration. To reach it the red man must pass through his purgatory—the new earth

GENERAL INDIAN DISTURBANCES. The authreak of the White River Utes, who have left the reservation in Utah and gone into Colorado to kill stock, is believed re to be a part of a general uprising prelimiuary to the appearance in the flesh of the Indian Messiah. It is known that the Nez Perces near Mullen, Idaho, to the numher of 400 have appeared in a band at that town and presented a formal demand that the whites leave the country, "to which they have no title." These are the same New Perces who took part in the massacre of 1877. They are dissatisfied with their reservation at La Pivai and are said to breaten again to overrun that wast stretch of Northern Idaho known as Camus Prairie. The excitement among the Cheyennes, Klowas and Comanches is scarcely less. Captain Trimbleton, of the Seventh United States Cavalry, commandant at Fort Sill, is known to have declared within a few weeks that in his opinion "the greatest Indian uprising of recent times is certain to come ne "the Indians have got the idea wipe out the whites and restore to them the whership of the country." Captain Trimbleton is known as a man of experience and Indians about Fort Sill bave renounced Christianity and entered upon a series of incantations and fanatical orgies is certainly

ARE THE SIOUX STARVING?

The opinion in this part of Dakota is that Government lately that their disaffection has much to justify it. In June, 1889, the Sloux signed a treaty for the cession of a part of their reservation to the Government. They have not yet received I cent of the General Crook was with the commission that secured their signatures to the treaty; General Crook had been their conquerer and a terward their benefactor and irrend. They knew him and believed in him, and their is no doubt that it was owing very largely to his influence that the treaty was

It was General Crook who promised the oux that the Government would pay them to full and promptly for their lands and that their rights should be respected. The Stoux have been repeatedly deceived by agents of the United States Government, notably when the attempt, that so nearly resulted, in 1878, in war, was made to remove them by force to the Missourz river, but they trusted Crook, Now that Crook is dead the chiefs say that his Government has failed absolutely to carry out his promises.

ON SHORT ALLOWANCES. The recent census at Rosebud Agency and

here was grossly inaccurate, my informant declares. The number of Indians was counted down instead of properly enumerated, and as a result their allowance of rations has been greatly limited. Owing to the delay in the passage by Congress of the Indian appropriation bill not only the Sioux, but the Indians of the entire country have been and are suffering for food. It is now October and the supplies due in July have not yet been sent out to them. As a result they listen all the more engerly

to the emissaries who have come from that part of Montana where the Messiah is said to have been seen. The idea of an approaching millennium and the extinction of the the more willing to eat their breeding sheep, cattle and lowis and quit work of every kind. The Sioux at these two great agencies --Pine Ridge and Rosebud-are receiving scarcely anything at all, even under the re duced census apportionment, instead of the full rations they are entitled to.

THEY SEE NO HOPE.

It is useless to attempt to reason with starving Indians, especially when the mysterious apostles from Montana and Utah have succeeded in convincing hundreds of the Sioux that when the Messiah appears their struggle for their rights will at last be crowned with success. Indeed, a man officially acquainted with the Sioux for 25 years said to me yesterday:

"Broken treaties, delayed appropriations and religious frenzy have combined to make the Indians seel that the worst has come to the worst, and that even if no Messiah came they might as well die fighting, with their wives and children around them, as see their dear ones pinetted and starved by a Government that owes them a living and has abundant means to pay that debt were it so disposed. By the very failure to deliver them their supplies in July, when they were due, the Government has, as a last stroke of crue tv, deprived the Sioux of the opportunity to earn money by freighting these supplies. There was nothing to haul, so they have been deprived not only of their Government food, but of almost their only apportunity to make money enough to buy tood eisewhere." COLLIS BERLOW.

LIFE ON THE PLANETS.

Not Enough Density on the Outer Ones and

Too Hot on the Inner. The question whether other planets are inhabited is always an interesting one. It is certain that the four great outer ones, Jupiter, Saturo, Uranus, and Neptune, cannot support animal life. Their density is small and their consistency more or less liquid and gaseous. Jupiter, biggest of the planets, the diameter of which is more than ten times that of the earth, is a sun not vet quite extinguished and even now giving out heat. From time to time a spot appears on its surface, which is a black hole in the midst of the fire big enough to drop the earth into. Saturn is hot, too, while Neptune and Uranus are so far off that nothing much can be ascertained about them beyond the fact that Uranus has four moons and Neptune

There may be life on Venus and Mercury, though it must be warm, inasmuch as Venus is a third nearer the sun than the earth, and Mercury is not half so far away.

Sister Rose Gertrude's Future.

It is stated in Paris that Sister Rose Gertrade is about to return to Europe, and that if she obtains the necessary permission from her ecclesiastical superiors she will resumher duties at the large house of business in Paris where she was formerly an accountant, continuing her researches for the cure of leprosy at the same time.

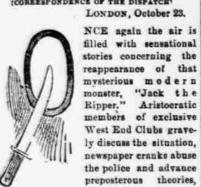
The Efforts of the London Police to Catch the Murderer.

ALL LONDON WAITING IN TERROR

Women Tramping Through the Dark Precincts of Whitechapel.

PORTRAIT FROM THE LATEST PHOTO

CORRESPONDENCE OF THE DISPATCH

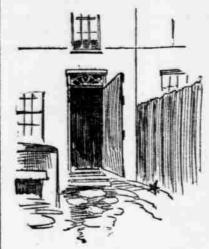


of foul-smelling Whitechapel take huge de.

A large number of these unfortunates have light in frightening to death, by divers light in frightening to death, by divers practically been engaged by the police to practical jokes, the unfortunate class of aid in hunting down the mysterious fiend.

description it would appear that the notorious butcher is anything but the repulsive-looking character the public have hitherto regarded him.

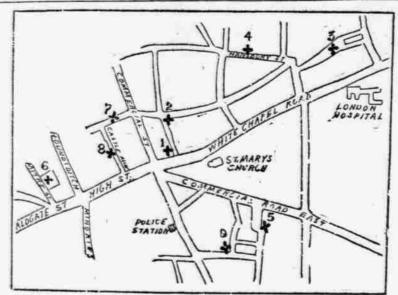
The disclosures made by this woman, and



Scene of Fourth Murder, Hanbury Street.

the recent warnings sent to the police, emanating, presumably, from the assassin himself, have prompted the authorities to adopt extraordinary precautions, the preposterous theories, important being the employment as detec-and juvenile denizens tives of the very class of women "Jack the women with which the locality abounds.

Truly, the "Ripper" scare is the one ab-



SCENE OF THE NINE WHITECHAPEL MURDERS.

Unknown woman, Christmas week, 1887.
 Martha Turner, found stabbed in 39 places, August 7, 1886.
 Mary Ann Nichols, in Bucks Row, August 31, 1888.
 Annis Chapman, Hanbury street, September 7, 1888.
 Lizzie Stride, Berner street, September 30, 1888.
 Mary Jane Kelley, 25 Dorset street, December 23, 1888.
 Alice Mackensie, July 17, 1889.
 Body of old woman found in Backchurch lane, September 10, 1889.

sorbing topic, and cropping up, as it has, at alleys of Whitechapel and Spitalfields with the Sioux have been so badly treated by the the dullest period of an unusually dull instructions not to repulse any man who season, it not only affords food for club gossip, but right welcome "copy" for great London's sensational dailies.

Although during the past six months but little has been heard of the "Ripper" by the



Scene of First Murder, George's Yard. outside public, nevertheless within wellinformed circles the renewed activity of the Scotland Yard authorities has been freely

commented upon; indeed, never have the police displayed such activity in their efforts to trace the Whitechapel fiend as at the present moment. Superintendent Arnold and several of the chief detectives confess that it was a gross mistake to regard the "Jack the Ripper" postcards and letters as a hoax. They now incline to the belief that the communications have emanated from the real murderer, for although several arrests have been made on evidence which pointed strongly to the suspects as of the diabolical correspondence, neverthe



Latest Photograph of the Ripper. less all efforts of the authorities to "sheet home" the charges made have up to the present proved tutile.

It is known that the London police have lately obtained certain clews to the identity of the "Ripper" through the agency of notorious woman, who, prompted by the



Swearing in the Deputies. large rewards offered for his apprehension, has devoted herself to a task which has baffled the skill of England's picked detectives. This woman claims to not only have "located" the assassin, but avers that she has obtained a photograph of the actual murderer by means of a detective camera. This photograph is now in the hands of the police, who maintain the most dogged silence respecting both this and all other late developments, but from the comen's

solicits them. They are guaranteed that they will be followed and that in the event o: any violence being attempted they shall receive immediate help. Provided that they can be kept sober the police consider these women well qualified to act as decoys; but the "free solicitation" order has already roused the ire of the army of moralists who are ever eager and ready to embrace an opportunity of this nature, and ventilate philanthropic, but nevertheless, unhealthy

As an extra precautionary measure the beats in Whitechapel and Spitalfields have been completely reorganized, and the officers who were formerly employed on duty in the locality of the murders have been recalled to their old beats. It is argued that these men will more readily detect the presence of strangers and recognize more quickly any former suspect. Already several arrests have been made, but in each case the suspect has been set at liberty on satisfactory proof



Where Lizzie Stroude Was Butchered. tortheoming of his innocence. Not only have most of the beats been shortened, but in quiet and secluded spots likely to be selected by the fiends for the perpetration of another deed, officers are to be seen parading

in twos and threes.

Instead of a man being at a certain point on his beat once every half hour or 35 min-utes, that point is passed by a constable every 15 or 20 minutes, so that in some parts the woman slaughterer would have but a very brief space of time in which to decoy his victim, mutilate her and get away unde tected or unseen. Plain-ciothes men also patrol these quarters, while others are concealed in the courts and alleys frequented by the women.

It is a noteworthy fact that, whereas during the last "murder season" the police were persistent in their efforts to clear the streets at an early hour, their aim at the present time appears to be quite the reverse. Formerly women were seldom seen out alone after 1 o'clock in the morning; now from midnight to daybreak they are to be seen prowling about in all directions, utterly regardless of the threatened danger.



Where the Ninth Victim Died. From the accompanying plan it will be noticed that the miscreant has confined his operations to a comparatively small area, and as he has faithfully carried out his avowed intention—as expressed in his first letter to the police—the latter still deem it expedient to concentrate their forces within the boundary originally planned out by the "Ripper" himself. The last epistle received by the police from "Jack the Ripper" was to the effect that the writer was fully aware of the precautions that were being taken, while at the same time he assured the officers of the futility of such measures. He threatens a tenth murder under their very noses. It remains to be seen how far this bold challenge will be fulfilled. In the meanwhile half London nightly quakes with fright.

Pernicions Political Activity of Most of the Presidents.

WASHINGTON COULD USE WHISKY.

Gastronomies of the White House and the Bills for Fine Wines.

HOW JOHNSON TOOK TOO BIG A DRINK

COURSEPONDENCE OF THE DISPATCH, 1 WASHINGTON, November 1.—President
Harrison believes that it is every man's the white mealy mass out upon his plate and poured cream over them. He liked this dish so well that he often made a whole duty to cast his vote at the polls, and he thinks every American citizen should take part in the Government. He will, it possible, go to Indianapolis next Tuesday to east his ballot and he has been a regular attendant at the polls on election days since he became of age. He is following the example of the Presidents of our latter days, and it is now quite the thing for the President to leave Washington for the State and National elections.

President Arthur voted regularly in New York City while he was at the White House. Cleveland not only went to Buffalo, but gave his check for \$10,000 to pay a part of the expenses of one of the elections, and Arthur not only gave liberally to the campaign funds, but he sometimes visited the State to regulate party nominations. This was the case when Judge Folger was nominated for Governor in 1882, and this act undoubtedly did Arthur's prospects for a renomination considerable injury.

LINCOLN HADN'T TIME. The only President who went home to vote back of Arthur was Buchanan, whose home was at Lancaster, not so very far from the capital, and who went there regularly to vote during his administration. President Lincoln never saw his home in Springfield after he was made President. His career in the White House was such a busy one that he had not time to think of his own ballot, though he undoubtedly kept his fingers on the political wires and man-ipulated them toward the great ends of pre-serving the Union, which his genius largely aided in accomplishing.

There was no doubt about Andy John-

son's politics. He was a tempestuous partisan, but he did not go to Tennessee to vote his ticket during his term. General Grant never voted after 1860, when he was a Breckenridge Democrat, until 1880, when voted in New York. He had never voted the Penublican ticket until 16 years after the Republican ticket until 16 years after he was elected as the Republican President, and Chief Justice Carter, who had much to do with getting Grant to accept the Repub-lican nomination, said that the matter was pushed because the party feared that the Democrats would take up Grant and nom-

PRESIDENTS AS POLITICIANS. There is nothing wrong in the President going home to vote, and there is nothing wrong in his taking part in politics to a limited extent. All of the Presidents of the past have been more or less of politicians. George Washington was a first-class politician, and he did not scruple to use liquor in his elections. When he was a candidate for the House of Burgesses in Virginia he kept an account of his election expenses, and among them was a hogshead o' whisky and a barrel of wine, which were used at

wines and liquors while he was President of the United States, and a large amount of this went to conciliate discontented voters. Jefferson was always laying political wires, and he was by no means scrupulous in his means of accomplishing his ends. Even while he was in Washington's Cabinet he kept a man in the Department under him whose chief duty was to write political articles against Washington. Those artitio a papers, and Jefferson would mark them and send them to Washington.

Jefferson spent something like \$10,000 for

HOW WASHINGTON WAS ABUSED.

Few people appreciate how Washington was slandered during his administration. The papers then called him the stepfather of his country and the American Casar. They accused him of wanting to become a king, and in 1795 the New York Journal had an article on Washington as a thief. This was written by the Clerk of the House of Representatives, and it accused Washington of having overdrawn his salary \$5,150.

It was John Randolph, of Roanoke, who proposed the toast at a dinner, "George Washington, may be be damned," and one of the leading writers of the day even accused Washington of having committed murder during the time that he was in Braddock's expedition. It was at this time that that noted scene occurred in Washington's private office which Jefferson records in his annals in which he got into a towering rage and said he had, 'never repented but one having slipped the moment of resigning his office, and that was every moment since."

And he went on saying he had "rather be in his grave than in his present situation. He would rather be on his farm than the emperor of the world, and yet they were charging him with want-ing to be a king." Even Congress went back on him, and when be finally left the Executive chair the opposition papers were full of rejoicing.

THE TWO ADAMSES.

The Adams family was made up of born politicians. Old John Adams was a fuser little fellow as fat as butter and as vain as a peacock. He was very angry when he found that he had to leave the White House and he went away bag and baggage the night before Jefferson's inauguration, saying that he would not stay to see his enemies exalted. He was very jealous of Washington, and one day when one of his friends in speaking of some occurrence that had lately happened referred to George Washington and John Adams as having taken part in it, he interrupted the speaker and said: "Sir, you should not say George Washington and John Adams, but you ington, for John Adams made George Washington." should say John Adams and George Wash-

It was the same with John Quincy Adams. He started out as a politician before he was out of school and at the age of 15 was drawing a Government salary as Secretary of our Legation at St. Petersburg. He !ed off the public pap during the whole of his life and the salaries which he received from Uncle Sam amounted to about \$500,000. His election was brought about, it is said, by a political bargain which he made with Henry Clay, and after he lest the White House he again entered politics and came

JACKSON AND VAN BUREN. During the days of Jackson and Van Buring the days of Jackson and van Buren the Government had no use for any man who was not a Democrat. Jackson was one of the most violent partisans who ever sat in the White House, and he schemed for the success of his party during the whole of his two administrations. He helped Van Buren to become his successor because he considered him a first-class Democrat, and it was during his administra tion that the famous doctrine was brought forth which is embodied in the catch words, "To the victors belong the spoils."

President Harrison's grandfather was a

a covering of muslin. Then the top must politician, and he was holding a petty political office at the time he was nominated have made ready its outside cover, which is of burlaps decorated with a simple design. for the Presidency. Polk was noted as a hand-shaker and a baby kisser long before he was thought of for the Presidency. He never had any idea that he would be nomas shown in the illustration.

The figures can be cut from brown cloth or denim and couched, or they can be colored with thin oil paint; in this case brown shadinated at Baltimore, and when he received the news of his nomination he was trying a \$10 Justice of the Peace case. His brother communicated the fact to him but he would not believe it, and it was some time before ing to yellow will give good effect. The edges should be outlined with heavy brown he would be persuaded that the fact was a genuine one. Filmore was a politician, and Frank Pierce had had a long political before he was nominated for the Presidency.

GARFIELD'S GASTRONOMIC TASTES. Mr. W. T. Crump, who seted as the .

SOME SIMPLE TERMS

ard of the White House during the Hayes and Garfield administrations, is near to death. Garfield was by no means a mascot to those who were employed about his bedside. He ruined Crump, and his sickness was the death blow to Dr. Bliss' health and prosperity. I chatted with Steward Crump not long ago about Garfield's table. He said: "President Garfield had the dyspepsia when he was inaugurated, and all the time he was in the White House he would eat nothing but the plainest food. He was very particular about his hours, and he ate his breakfast always at 8:30, his dinner at 8, and a light tea at 7 P. M. That Are Now in Every-Day Use, but Are Little Understood.

HINTS USED BY ELECTRICIANS.

Explanations Which Will Enable One to

VOLTS, AMPERES, OHMS AND WATTS

Talk Intelligently of

IWRITTEN FOR THE DISPATOR. Electricians are often asked what a "volt" is or an "ampere" or a "watt," and indeed meal out of it, and he once told me that it was far better and more digestible than posuch expressions must be very puzzling to tatoes with butter. He are beefsteak for dinner, but neither he nor Mrs. Garfield the layman. However, they are not nearly as mysterious as they sound. Familiarity ever cared much for anything and his table was by no means so elaborate as that of President Hayes."

"What were President Hayes' favorite dishes?" I asked.

"President Hayes." and use is all that is needed to make these expressions just as intelligible as the foot, yard or quart. Comparatively few people know how many feet there are in a mile, and there are not a few people that would "President Hayes," replied Steward get but a faint idea from the expression 800 Crump, "had a very tasty stomach. He ate feet high. Yet all are perfectly familiar a very good breakfast and was very fond of cakes made of Indian meal, and he thought a breakfast was not complete without the with the terms toot, yard or quart, and are capable of using them intelligently in genbest of coffee. He used a mixture of fine eral conversation and for all ordinary pur-

> And now, in these days of electricity when electrical topics are constantly before the public and electrics currents in every city, it seems high time that people in general should shake off an indescribable dread, a sort of shrinking feeling about the electric current as though it were some monster or supernatural being, and become familiar with this new and wonderful agent, ever ready to do our bidding.

and vegetable. Following this we usually had a course of game and then dessert, consisting of cakes, fruit, candy and nuts.
"There was always cake on the table, and THE FOUR UNITS. Electricity is a form of energy, and, natural enough, like all other forms of energy, such as steam, water power, gun-powder, etc., can do much mischief when improperly handled. But when in-telligently and rightly used it is one of the most easily applied and flexible forms of energy known. Let us then help and not hinds its necessaria. special aversion to pork in any shape. It hinder its progress in the industries, and the is not true that Hayes saved a great deal of money while he was in the White House best way to overcome this almost universal and watched every penny. Some of his state dinners cost him \$17 per plate. I was shrinking from it is to become familiar with t and learn to appropriate its many good qualities. Now, one of the best ways to begin this is to obtain a clear idea of its prininstructed to get the best in the market without regard to price, and Hayes never criticised my accounts. I never found any niggardliness about him.

cipal units of measurements. Electrical units have been given proper names. Ampere, Watt, etc., are the names of men who have made themselves famous "Hayes was a much nicer man to work in this electrical branch of science. But in for than Arthur, and he kept decent hours. themselves these names mean nothing more than do the expressions foot or pound. The four most commonly used electrical units are the volt, or unit of pressure, the ampere, or unit of quantity of current, the ohm, or ing away on into the night, and I found I could not stand the pressure. Garfield al-ways had wine at his meals. He never ate anything but a cracker and a cup of coffee for breakfast, and he took this often as late However, the expression watt is preferable, being shorter, and, in fact, volt-ampere is his table while he was in the White House, and this was when the Grand Duke Alexis

fast going out of use.

The best way to make a first acquaintance with these units is to compare and liken them, as far as possible, with units already. The volt or unit of pressure corresponds to the unit foot when used in the sense of pressure. When we speak of a hundred feet of pressure in a water pipe we know that the level of the water in the reservoir is 100 feet above the pipe in question—and we understand the expression 100 feet of pressure because we are familiar with it and know

THE GENERAL EFFECT that can be obtained from that pressure. For example, we know that if a hole is made in the pipe, a stream of water will, except for friction, rise 100 feet high. In the same way, anybody would make a pretty good guess as to how many pounds there are in one cubic foot of water, and this is only because we are familiar with those units of neasure, and not because we know anything about their history or why they were given may be expected. The different sections of

In electricity the relation of the units' above mentioned is beautifully simple, and is called Ohm's law, Ohm being the name of he man that discovered the law, which is this: "The pressure is equal to the quantity multiplied by the resistance." That is, the volts always equal the product of the ampere into the ohms. To that—if we represent the volts by V, ampere by A and ohms by O—we have these three simple equations: V equals A multiplied by O, A quals V divided by O and O equals V divided by A, from which, if any two of the three quantities are known, the third can always be calculated.

For example, if we have V = 4 and A = 2, then O will equal 2, because O = V-A = 4.2 - 2. and so on.

In a cosmopolitan society like that of Washington it is impossible to get along without the use of wines, and the President who serves them creates less comment and does There is one other term to consider, and

that is the watt or unit of work (energy).

If we represent this by W, we have this very simple law: W = V x A. That is, 6 watts are equal to 6 volts times 1 ampere, or amperes. Now, it takes 746 watts to equal one horse power of energy, so that, if we have 2 amperes flowing under a pressure of traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction, so gas is being superseded by the electric motor for street car traction. Kissing is the Beginning and the End of the I am able to give you a synopsis of Johann Strauss' new opera, "Ritter Pazmann." The wife of the Ritter, when wandering in the green forest, allows herself to be kissed by

power equals 7,460 watts, and this equals 1,000 volts times 7.46 amperes. In fact, energy in electric power is measured in very much the same way that it is in water

THE ELEMENT OF TIME. With water the energy is measured by the

looking for. A court of justice is estab-lished to hear the knight's grievances; the fool is elected judge, and he decides that Pazmann shall kiss the Queen, and this done product of the pressure into the quantity of water flowing in a given time. When we the opera ends without bloodshed, water flowing in a given time. When we say that 746 watts equals one horse power, we mean the effort of one horse power; but FROM HOMELY MATERIALS. if we wish to estimate the work that can be done with a given number of watts, the ele-A Thing of Beauty and Usefulness That Scarcely Costs a Penny.

ment of time must be taken into consider-ation. And so we speak of watt-hours or horse-power hours, that is, 746 watts will do A pretty and serviceable shoe box in one hour the same work that one horse made of an empty half barrel, some expower from a steam engine will do in one hour. Also one watt will do in 746 hours celsior, some burlaps and some hammock cord. The barrel must first be sawed in the same work that 746 watts will do in one two, then fitted with a cover and the founda-

Some examples now of common uses of next be neatly covered with burlaps and the the electric current may be of assistance in familiarizing one with the units that we have just been considering. Let us imagine an electric circuit having 20 are lamps in series, that is, one after the other, and let us assume further that this dynamo furnishes a pressure of 1,000 volts and a current of 10 amperes. Now, neglecting the resistance of the wire, we can easily figure from Ohm's law the electrical resistance of each lamp, thus: O = V-A = 1,000-10 = 100 ohms. That is, the resistance of all the 20 lamps in series is 100 ohms. Therefore one lamp has resistance of 100-20 = 5 ohms. If each lamp has 5 ohms resistance we can find how much pressure is needed to force the current of 10 amperes through one lamp, by $V = 0 \times A = 5 \times 10 = 50$ volts.

PROVING THE FIGURES. To prove that this is correct we can de-

termine the pressure for one lamp in the following way: We have 1,000 volts to force the current through 20 lamps, therefore it will take 1,000-20=50 volts to force the same current through one lamp. The energy required to keep the lamps burning is 1.000x10=10.000 watts and 10.000-746 will give the energy in horse power, which is nearly 13%. If the lamps are run for ten hours, it will require 135 horse-power hours

edges should be outlined with heavy brown linen floss. The tringe, like that of the curtain, is of brown hammock cord, and is knotted into the edge of a narrow band of burlaps, which fits tightly round the top of the box. It should be sufficiently deep to entirely cover the sides of the box. When all is done the patient laborer will surely be rewarded with a comfortable and handsome in ohms. For, if the lamp takes 50 waits of power to bring it up to candle-power, using the pressure of 50 volts, the current is found from W-V-A, and we have 50-50-1. The

current therefore is one ampere. And for the resistance in ohms we have O=V-A=50. TRAINING THE BODY.

can be worked with one electrical horse-

power, all we have to do is to divide the

number of watts in one horsepower by the

number of watts per lamp, thus 746-56 = nearly 15 lamps. If there is no useful work to be done, that is, if there are no

lamps or motors in the circuit, all the electrical energy will be expended in heat-

ing up the conductor, and this heating of the conductor is calculated by the product

of the square of the current into the resist-

of energy.

tricity.

electro magnet.

There is nothing hard in the above

THE ELECTRIC WORLD.

(WRITTEN YOU THE DISPATCH,

ceived either by chemical decomposition or ink

writers. The weak point in systems of this class has heretofore been the difficulty of se-

curing accurate perforating, while maintaining the desired speed. The perforations, too,

have been somewhat complicated, owing to the necessity of transmitting "double" or alternat-

ing currents, which were deemed essential to

rapid transmission. In the new system the full

rapid transmission. In the new system the full effect, which is designed to be produced at the receiving end is attained indirectly by single current transmission, which enables the perforators to be worked as easily and rapidly as typewriters. The record obtained is remarkably clean and sharp, and has been produced in a perfectly readable form at a speed of \$,000 words a minute over a low wire resistance circuit of \$51 miles between New York City and Washington.

AMONG new electrical processes is that of M. de Meritens, which prevents fermentation by the sterilizing of liquids. This is done by

THE German Government, it is announced,

as consented to the establishment of a cable

communication between Heilbronn and Lauf-

fen, for the transmission of light and power,

MORE SIMPLE CALCULATIONS. Three Leading Methods of Making If on the other hand this 50-watt lamp is so constructed that it takes 100 volts to bring it up to 16 candle power, we have W= VxA, that is, 50=100x1/4, so that the current in this case is only half what it was in the other, but the pressure is doubled. If we wish to figure how many 50 watt lamps can be worked with one selection horse.

SCIRE FACIAS.

MR. CHECKLEY'S NOVEL THEORY.

How John M. Laffin Trained Fred Gebhard,

WILL POWER IN CURING OBESITY

CORRESPONDENCE OF THE DISPATCH. NEW YORK, November 1 .- The divergeucles of opinion among teachers of physical culture are at present so great that the man who would "train" his body is apt to befigures, and if they are read over two or three times, the reader will be surprised at their simplicity, as well as pleased to know come more and more bewildered as he in-

that he can now talk intelligently on the fundamental principles of the electric form as trainers are Edwin Checkley, John M. ent of Police Murray and John L. Sullivan are among the recent pupils of Muldoon. New Systems of Telegraphy That is a Suc-Mr. Frederick Gebhard is Laflin's latest cess-The Berlin Telephone Plantsubject. Mr. Checkley is now reducing the Lighting Street Cars From Storage Batflesh of one of Brecklyn's most prominent teries-Working Sheet Metal by Eleccitizens, and has advanced ideas in training so revolutionary as at once to challenge com-parisons between the results of his and A TELEGRAPH system is now being brought forward in which greatly improved results are btained by devices and arrangements of ex-Laffin's training as a gift. Not that Check-ley speaks disparagingly of these emment treme simplicity, both electrically and mechanically. In this system very high speed athletes, but because that which they de-clare beneficial to the body he believes posiis attainable, as it involves the transmission of the Morse code of signals by means of perforations on a strip of paper, which can be re-

TRAINING BY VOLITION. The Checkley system is founded on this basic principle: Instead of drawing water, punching the bag or pulling a rowing machine for the purpose of making your muscles grow and your lungs expand, by an effort of the will restrict the contraction of the muscles. If lifting a 50-pound weight from the floor will cause a visible swelling of your biceps, and so exercise that muscle and produce what is conceded to be a desirable result, then by the Checkley system one may "go through the motions," of rais-ing the weight without doing any work at all—for raising the weight would be "work"

same benefits from the exercise.

Muldoon believes in work for his pupils Laffin prefers outdoor sports to outdoor work and rowing machines to most other apparatus for indoor exercise. Instead of setting a man to raking hay he accompanies him on long fishing, shooting, swimming or rowing excursions.

making a Leyden jar of the containing vessel, the liquid being the inner coating, and the electrical effect being produced by means of condensers. Another method, the practicabil-ity of which seems, perhaps, open to doubt, consists in placing the vessel and the liquid to be sterilized in the field of a permanent or electro magnet. Checkley, however, not only thinks, but appeals to the curiosity above all others.

on the condition that the minimum height of the wires above the ground be eight yards, the smallest diameter of the wire being 0.26 inch, and further, that the wire be laid underground through the town, and the high tension be transformed in a special building into low ten-sion current before entering the town. A London paper recommends theatrical en-gineers who wish to increase their knowledge of types of motive power, as applied to electri-cal purposes, to call and investigate the capabillities of an American windmill, which rears its head above the ancient thoroughfare of City road. The windmill is used for grinding pur-poses and the pumping of water, and it is ex-pected it will soon supply the motive power for all the electric light needed on the premises.

THE underground telephone communications begun last year in the city of Berlin have just been completed. This telephone plant, the largest existing has been so perfected that for many years to come an unlimited development of this important medium of communication muscle and working of off the numerous exchanges, and lead to several off the numerous exchanges, and lead to several connection boxes, where they are joined to the overhead lines. The total length of these tubes is about 34,000 yards, 10,000 yards of which are laid down as double set; 43,000 yards of castiron pping of \$\frac{3}{2}\$ inch to 11\frac{1}{2}\$ inches diameter have been supplied for them, the biggest pipes being capable of holding \$\frac{9}{2}\$ cables. Within one year 7,384 wires of about 3,700,000 yards length have been drawn into the pipes, a large proportion of which are now in constant working.

Most people are familiar with the manner in which, in manufacturing sheet metal arti-cles, the workman forms in a lathe almost any desired shape. The electric current has now been applied to this process. As is well known been applied to this process. As is well known the successful shaping of the article depends on the malleability of the metal, and by the new process the metal is kept constantly annealed. A disk of sheet metal is placed in the lathe, and from a point near its center a current of electricity is passed to the point where the burnisher makes contact. The consequence is that the maximum of malleability is secured, and the ease and celerity of shaping the metal is considerably increased.

373 volts, we will be able to do the work of one horse power with the current, for here V=373 and A=2, and so from $W=V\times A$ new order of things is not yet absolute. A case V = 373 and A = 2, and so from W = V x A we have W = 373 x 2 = 746 watts or one horse power.

It will thus be seen how very simple it is to talk intelligently about the power of an electric current. For example, if a man says he has an electric current doing a work of ten-horse power under a pressure of 1,000 volts, we at once know that he is using a current of 7.46 amperes, because ten-horse power equals 7,460 watts, and this equals

A WESTERN electrical paper points out that while it is highly desirable that the activity of capitalists in building street railroads should be encouraged, a franchise for a road is often of considerable value, and great care in granting them should be exercised by boards of ing them should be exercised by boards of trustees and supervisors. There are always men without means who are ready to speculate in franchises, as they would speculate in anything else, and instances have happened more than once where improvements were prevented because some irresponsible person held a franchise and kept others out. It should be laid down as a fixed rule, that no franchises be granted except to parties who can prove that they have a legitimate claim to the possession of what they seek.

SOME interesting experiments were made recently in Bradford, England, on the lighting of street cars by electricity. A car was illuminated by three incandescent lamps of five candle-power each. They were fed from three storage batteries placed beneath the seats, canable of supplying current continuously for six hours. The light obtained is described as being about equivalent to that given under the best conditions by the oil lamps at present in use, with, of course, the additional advantages of absence of smell and necessity for trimming. ecessity for trimming.

A FACE ON A POTATO.

Remarkable Freak Grown on a Montana Ranch This Season. Mr. T. D. Duncan has sent to the St. Louis Republic a queer potato which he says



Valley, Missoula county, Mont. It is a small tuber of the Early Rose variety, and looks good enough for the male only that it the result will be immediate and looks.

Men Physically Perfect.

and Muldoon's Ideas.

vestigates the merits of the various systems now in vogue.

The three men best known to New Yorkers Laffin and William Muldoon. Superintendothers' systems. To hear Checkley, one would much rather not have Muldoon's or tively detrimental.

-and, by an act of volition, swell and so exercise the same muscles and derive the

he sets others to thinking. He exercises his brain as well as his body, and develops both through the very superiority of mind over matter. If a man may stay at home and by will power make himself as tired as he would be at the end of a day on the hay rake it stands to reason that a good many men would prefer the Checkiey system. It MURRAY, SULLIVAN AND GEBHARD.

A day of Murray under the Muldoon regime was, in a few words, as follows: Ex ercise with light dumb-bells; "firing" stuffed balls across the room and catching them when "fired" back; pounding a block of wood with two twelve-pound nammers, one in each hand; a long walk, the latter portion of it done on a run so as to heat the body up well; wrapping in blankets for a sweat and a rub down; a salt shower and an other rub down; shovelling hay-all this varied with horseback exercise and general gymnasium work. A day of Sullivan under the Muldoon regime was much more labor-ious and included longer and more violent exercise in the way of running, wrestling,

punching the bag and walking.

A day with Laflin is quite different.
"Freddy" Gebhard has been with him for some time up in Pike county working hard with Laffin up in Pike consists of this: Rising at 6 or 6:30; a short, brisk walk before breakfast; start for the woods after breakfast with gun and dogs, or up a trout brook with rod and creel, in flannel shirts, stout walking shoes and knockabout costume; a brisk run, just long enough to set the heart pumping blood through the arteries on the return in the evening; then a rub down and sponge bath, and dinner or sup-per; then a little smoke and talk and hed. Both systems invoive a good deal of hard

work. MIND TRAINING MUSCLE. Now, that was not the way the ancient Greeks trained for the Olympic games, the victors in which were the favorite models

for the world's greatest sculptors. Theirs was an open air training, however, and running long distances, throwing weights, wrestling and the cæstus were their favor-ite exercises. Yet Mr. Edwin Checkley declares that given the same training our modern athletes would greatly surpass the Greek records. "Muscle moulding schemes," says Checkley, "that makes men die in middle life may be pictorially interesting and may sound heroic, but they are not for that wise average mortal who wishes simply to feel light and strong, and, if need be, to find himself ready to enter safely on any reasonable physical undersafely on any reasonable physical under-taking. There is more straining than train-ing in a good many popular systems prac-ticed in and out of the college gymnasium. What do the adherents of other systems think of the following: "A man covered with hard muscles will often display great immediate power, but not endurance, and of after health he can have little chance. His muscles feed upon his vitality and threaten his general health. On the other hand, a man who keeps his muscular sys-tem in a state of comparative softness and high flexibility cannot only summon great strength, but his powers of endurance are surprising. He is easily kept in training." Checkley recommends that girls and boys should as soon as possible and first of all learn thoroughly how to breathe, stoop, stand, walk and sit properly; the proper uses of the joints, as the shoulder, hip, neck, etc. "Teach them tumbling, both girls as well as boys," says he. "There is nothing better. I advise generally a mixed diet." Of the various athletic sports, Mr. Check-ley expresses this opinion: "I look upon tumbling as the some of physical perfection, because the person so fortunate as to possess this ability you will notice is gen-erally strong, agile and intelligent; the very

courageous. GET STRENGTH FIRST. "Bieyeling, boxing, fencing, dancing and running are all good, but what I claim is that the power to enter any of these sports should be gained first. It is rather in the conservation of energy we gain strength and not in the expenditure of force. The power to do these things should be made the effect and not the cause."

nature of the movements must make him quick, self-reliant and to a certain extent

Mr. Checkley, who can lift 1,500 pounds, two-thirds of the work in that feat being done, he says, by the will, prides himself specially on his cure for adiposity. This is what he says of his cure: "I first teach the person how to carry the body, then how to gain the control of the muscles of the abdomen mentally. A proper carriage of the body is a positive enemy to the secretion of fat. A man may box and fence and even walk without losing his ter-rible abdominal accumulation. But if he centers his efforts at muscular exertion the abdomen itself, the fat cannot stand the attack and will gradually disappear. To get rid of it muscular control of the abdomen must be regained. When once it has been lost this is no easy matter."

To attain this result Checkley prescribes 12 exercises, and adds, "persistently subdue, the abdomen and give the prominence to the chest. Walk with the whole body, and do not move as it afraid of jarring some internal machinery. Give the hips free play, and in walking the more of this the better.