140 MILES AN HOUR.

At That Speed Locomotive Transit Should Cost Nine Times as Much as by Electricity.

THE PROBLEM OF THE TIMES

is the Harnessing of the Current to Railread Service In a Practical and Economical Way.

POWER FOR STATIONARY PURPOSE 8

What Has Been Learned From the Pseudo-Experi mental Plant at Lauffen.

IWEITTEN FOR THE DISPATCE. For more than 50 years men of science have known that electricity meant mechancal power, brilliant light, or intense heat, its user chose. Why, then, was this wonderful servant kept until about 15 years ago little else than transmitting messages and orforming small tasks in electro-plating? ecause, the reply is, its wages had to be aid, not in the coals, wherewith steam was well content, but in an equal weight of zine, costing 40 to 50 times as much. Before the reat career of the electric current could fairly dawn, it was necessary that the vol-

ming contrivance.
This demand was satisfied in the invention of the dynamo, which beginning as a toyke machine, most wasteful in operation, as gradually been enlarged and improved entil to-day, when, converting the power of the mightiest steam engine into electricity, has an efficiency as high as 92 per cent. Every successive advance in the design and peration of the steam engine, and every conomy in the use of water power, directly send to cheapen the electric current and multiply its applications. The Possibilities of the Future.

How far, then, is the electric motor likely a supplant other sources of power? What omise has it for the relief of domestic Irudgery? Applied to traction may we expect to see it rival the locomotive? That lectricity can be transmitted long distances patently, and almost without loss, is a nighly important peculiarity, and one which has a direct bearing on these questions. The telegraph, with which we have so long been familiar, is after all but the ectrical conveyance of motion. Led into siftly moves at the other end of the line he armature of a receiving instrument, reading the sounds which the operator insters as a dispatch. Increase the size of sibrating iron bar of the receiver to that he armature in an electric motor, and its ce can be made to drive the heaviest maers. To have work done by steam or essed air at a mile from the fan or pressor, is not only to incur enormous use for piping, but also to suffer serious of power. Contrast this with electrical

st summer, at Frankfort-on-the-Main. belectric current estimated at 300 horse outer was brought all the way from a valerfall at Lauffen, 109 miles off, with a a crfall at Lauffen, 109 miles off, with a imination of but 28 per cent. To reach his extraordinary result special pains were aken in insulating the wires, which were triang on poles. In each insulator were leap grooves filled with oil, a much more frective non-conductor than any solid subtance, and in these grooves the wires lay.

reme, varying from 16,000 to 50,000 be insulation had to be as nearly perfect as be insulation had to be as nearly perfect as at on the trolley wires of electric railways limited to 500 volts, higher pressure beous voltage used by the German electriums was employed for a very good reason. which thorough insulation insures a cur-ent, the greater its voltage the lighter the ire sufficing as conductor, just as the igher a waterfall the smaller the duct ceessary to yield a horse power. Each of he three wires carrying the current from autien to Franktort was somewhat less han one-sixth of an inch in diameter, about han one-sixth of an inch in diameter, about he thickness of common telegraph wire. In generating the current, dynamos of ovel and effective design were in harness t Lauffen, and the motors at the Frankfort

nd of the line were their counterparts. ent had a pressure of only 50 volts, to be atensified for transmission it took its way brough a transformer sealed in a tank lied with insulating oil. A transformer, hen reversed, can reduce voltage as well sexual it, and that application was made f it at Frankfort, where the electricity as applied to motors and incandescent lamps a pressure of 100 volts.

The Limit of Distance.

In this remarkable achievement, the Geran electricians have shown what is experientally possible rather than commercially racticable. For the transmission of curats of 30,000 volts it will not do to rely on wires, carried on poles, protected sim-by a painted skull and cross bones; underground conduits must be proled, and this of necessity shortens the age over which electricity from a watercan be carried in competition with stricity generated by steam. This limit Il probably be all the way from 30 to 60 ill probably be all the way from 30 to our less, a distance within which several merican cities have large water powers maing to waste. In utilizing these powers lectricity has the field to itself. Niagara alls very soon will be impressed into send-ig a powerful current to Buffalo, 22 miles aray. A project to send part of this cur-

ear is under discussion.

Whether produced by a waterfall or a cam engine, electricity, besides being the the cheapest as well. Its cost depends pon the scale of operations. Where 1,000 se power is got by steam, the cost at the arse power as got by steam, the cost agine room is 1 cent per horse power per our; if only 100 horse, the cost rises to 3 nts. With smaller powers the outlay ineases so much proportionately that putpoir bestows an inestimable boon on users of mall machinery. Here, for instance, is a filor with half a dozen sewing machines this shop; next door a cabinet-maker has a the or two and a circular saw; across se street is a jewcler with drills and wielers at work; each of these tradesis provided with an electric motor, room be scant, can be hung from

The Advantages for Light Work. And so it goes throughout the city; every mall workshop is independent of engine, after and fire; it need not have, as when one power is employed, apertures in its alls for flying belts—apertures through lich destructive flame may pass. The wer can be instantaneously summoned and missed; it asks no pay beyond the mo-

ent its work ceases. be low. Suppose that a central station a sopply a horse power at \$100 per anomal. With a current at 110 volts, the limit rand which it will not pay to deliver the wer is 3,500 feet, two-thirds of a mile. At the wer is 3,500 feet, two-thirds of a mile. At the wer is 3,500 feet, two-thirds of a mile. At the wer is 3,500 feet, two-thirds of a mile. At the were is 3,500 feet, two-thirds of a mile. At the were is 3,500 feet, two-thirds of a mile. At the were is 3,500 feet, two-thirds of a mile. At the were in a contral station in the more thought of a sudden, and it is more thought of the sudden, and it is more th wer is 3,000 icel, two-taines to 13/2 miles; 1 volts the distance lengthens to 13/2 miles; 500 volts, to 33/2 miles; at 1,000 volts, to miles; at 5,000 volts, to 19 miles. In

each of three distributing centers has three units of 1,400 horse power; at a fourth center there are four such units. When, in a large manufactory, scattered through several buildings, power is in demand at many points, it pays to centralize the steam plant and convert its energy into electricity for use where needed. The friction of belts usually exacts a higher tax than the toll levied by a dynamo and a series of motors; the diminution of jar and vibration on upper floors permits a safe reduction in the thickness of walls and joists. In mining, as in manufacturing, electricity plays a unique part. Mining work must often be done where engines are out of the question.

Electricity in the Dwelling.

Electricity in the Dwelling. In the dwelling the electric motor has be fore it an important field. Scores of do-mestic labor-saving devices have awaited its mestic labor-saving devices have awaited its advent. It revolves an ice cream freezer, a washing machine, or a mangle; it operates a dumb waiter, a pump, or an elevator. The current actuating the motor gives light, and abolishes the chemical battery for bells and annunciators. Electricity is not an economical source of heat, but its convenience and cleanliness make it available for heiling a chemical benefits a chemical benefits a chemical convenience. boiling a pot of coffee or broiling a chop.
Attached to a flexible wire a flatiron can be heated and maintained at a perfectly even

It has been thought, from the economy with which it can be distributed, that electricity will not only lighten domestic drudgery, but may do something in dis-persing factory buildings and reducing their size. It must, however, be remembered that it is not so much the necessity for be-ing within a few yards from an engine that has made factories grow from vast dimen-sions, as the advantage of carrying on at adjoining machines the successive processes of a minutely subdivided manufacture, such, for example, as that of shoes. The relief of congested towns and cities, whether centers of manufacture or commerce, has already been begun by the electric motor, not in its application to looms, planers or mill stones, but as a means of rapid transit. It has often been remarked that the steam loco-motive seems to have done as much toward crowding great cities into small compass, toward squeezing their buildings skyward, as it has in developing healthy and airy suburbs. The reason is not far to seek. To take a railroad train one must usually go a considerable distance to reach a station, and the exigencies of steam travel require that stations on the line be separated by almost

Storage Batteries and Conduits.

On a few scattered lines, instead of the overhead wire conductor, storage batteries are employed. This plan renders a car independent of any external cause of derange-ment or accident, and would long ago have ment or accident, and would long ago have come to the front among its competitors had it not been chargeable with two grave defects. The first is that the battery for an ordinary car weighs 3,800 to 4,500 pounds, absorbing on a level track one horse power for its traction, and the second that in its present form the material of the storage battery, lead, undergoes gradual deterioration, and is destroyed in six to ten months. On a long and level track, where the service is not frequent, the storage battery is adis not frequent, the storage battery is advantageous. No field wider than this can be expected for it until a battery lighter and more durable than any existing type is devised.

No electric road in the United States has ever made a success with its wire conductor laid in an underground conduit. A line in Buda-Pesth, Austro-Hungary, has had a different experience. Its conduit, however, makes it cost \$20,000 a mile, a sum which places it at once at a disadvantage with overhead systems, even were there no other drawbacks to the plan in most American towns and cities where a railway has a roadtowns and cities where a railway has a road-bed to itself, as the City and South London Railway, for example, the center rail is an easy and economical means a road-five coats of paint and yarnish they are easy and economical means of receiving cur-

Knecking Out the Locomotives.

To-day, with three years' progress in electrical science, more than one electrical engin-eer is aching to show how he could drive the locomotive off the track if only be had a Wires No Larger Than Telegraph Wires.

As the pressure of the current was exception, varying from 16,000 to 30,000 volts, by promoters in St. Louis. On the other side of the ocean engineers are maturing plans for an electric line between Vienna and Ruda-Pesth.

Since the feasibility of long distance traction is no longer in debate, the questions regarding it narrow themselves to cost and speed. A stationary steam engine of the largest size, and of the multiple expansion model, burns cheaper coal than a locomotive and requires less of it. A Baldwin locomotive of the new compound type, carefully tested on the Northern Pacific Railroad last July, consumed but 2.43 pounds of coal per horse power per hour while under way, on half as much as an ordinary locomotive, and but one pound more than a stationary engine of the Corliss pattern, of equal capacity and working with triple expansion. The dif-ference in the cost of fuel and the less weight of electric motors, as compared with locomotives, are two important items of economy attending electric traction. The main advantage of electricity as motive power consists in the speed which it makes possible.

Speed in Cost Calculations.

The only experiments at doubling exist-ing railroad speeds ever conducted have been those of Mr. O. T. Crosby at Laurel, Md., in 1890, with the Weems system of propulsion. The experimental car was 30 inches high by 24 inches wide, and 20 feet long; it carried two motors with their armatures keved directly to the axles and weighed 23/2 tons. The track was circular, 28 inches in gauge, and two miles in circum-ference. Control was effected from the power station placed inside the circle, the voltage of the line was 500. Although the track was much too light for the work at-tempted, very valuable information was obtained as to the resistance of the air and as to the power demanded for each ton of load.

It came out that the ratios ordinarily ac-cepted are excessive. In discussing the ex-periment Mr. Crosby makes an elaborate comparison between the cost of electric and steam locomotion. With a motor of the highest efficiency he places electricity in the lead at all speeds. For this efficiency a slow speed armature must be fastened di-rectly upon the axle, dispensing with all in-termediate mechanism. The advantage possessed by such a motor increases faster than its velocity. At 20 miles an hour steam will cost 15 per cent more than electricity; at 60 miles, 25 per cent; at 120 miles, 157 per cent; at 140, 903 per cent. Where the motor, from the necessity of introducing wheel-work between the revolving armature and the car axle, is reduced in efficiency one-fifth, these figures are considerably modified. fifth, these figures are considerably modified. At 60 miles an hour steam and electricity are on a par; below that speed steam is the cheaper agent; beyond it, electricity is cheaper than steam. Mr. Crosby goes into an estimate of the receipts and expenditures of an electric line between New York and Chicago, running at 125 miles an hour, eight hours for the trip. He shows that with 20 trains each way way way day the investment. trains each way per day the investment would be very lucrative; he holds that even more profit would attend working a 500-mile line connecting Boston, New York, Phila-

delphia, Baltimore and Washington. George ILES. GOING THROUGH A WALL The Simple Contrivance That Has a Good Effect on the Stage,

Boston Herald, 1 Regarding scenic effects, it must be admitted that the English are foremost in all the mechanical arrangements for the stage. transmitting a working current the law for copper conductors may form the trappe anglaise is an English invenst important item, especially if the volt-

teeth together.
These are covered with painted canva miles; at 5,000 volts, to 19 miles. In suppose the voltages employed in electrical ansmission are usually much higher than a American standard, and another element economy is introduced in the enormous of engines and dynamos. In Berlin upon its being rather recklessly done.

SKILL REQUIRED IN MAKING BYES

WRITTEN FOR THE DISPATCIL. In the quaint old town of Montreuil, outside the fortifications of Paris, is the most famous doll factory of the world. One hundred thousand dolls are manufactured there every year. It was a glorious day in autumn when I crossed the factory courtyard, flanked on either side by hundreds of small paned windows, through which I caught glimpses of some 500 men, women and children bending over their work.

The model of the famous Paris doll is

always the human baby-the child from 1



to 4 years old. Her dollship's body is made of brown paper. Sheet upon sheet, well moistened with paste, is spread on a table at which women and children sit. Before each worker is an iron mold into which she bammers wet, pasty paper with a mallet. One mold represense the trunk of the body, others the legs, the arms, the foot, the hand. All faithfully preserve every curve and dimple of the human baby.

When the molds are filled they are hung up to dry. The drying process takes from 8 to 30 days. A coat of flesh-tinted paint—the doll's first layer of skin—is now put on. It is environs to watch the dimple of a hand.

It is curious to watch the dimple of a hand, the nail of a toe, grow under the quick, sure brushes of these young peasant girls. Fin-ished, the hands and feet are pivoted on the walls of the paint shop. A quaint picture they make! hundreds of little pink, dimpled hands in all attitudes of entreaty; hundreds of little feet restless to creep into some child's heart; little dimpled stomachs and shapely legs-all standing out from the white walls.

bent with age set the various parts together



on a fine elastic cord. This is the highest art in the doll's creation, for upon the skill ful adjustment of each part depends the per ful adjustment of each part depends the per-fection of the whole. Wooden sockets are then put in the shoulders, elbows and knees, and little wires called "articulators" (turned by boys at a pedal machine) are in-serted, and lo! every limb moves, not un-like the human body.

To make one talking doll requires the joint labor of 30 men. Germany was the first country to invent the talking dolls. So great is the cost of their manufacture that

great is the cost of their manufacture that



tinguished party one night as they drove by: "Who would think that little urchin in but, making all that racket up there, was the son of our President!"

At other times the two boys would go about from cot to cot visiting one after an other of the old town. As we enter the factory women and girls are filling face-molds with a white liquid which runs from a tankard with faucets, like a soda fountain. This liquid is of the same ingredients as the same ingredients as the famous Sevrea and Limoges ware. When the contents of the mold are dry they are emptied on trays and before they have be-

come hard the ears are pierced to receive that relic of barbarism—the earring.

The faces are then put in a huge oven where they bake from 28 to 30 hours. Baskets upon baskets of baked heads, varying in size from two inches to the face of a child of four years, preserving Greek teatures and revealing many human expressions are piled on every side. Children so young that home and a doll would seem the place and the occupation of their hours, are met in the courtyard, running hither and thither with great trays of faces on their heads.

wish he could be a general He'd finish up this old war!"

A Great Theatrical Idea.

The beautiful summer nights generally found the Lincoln cottage full of visitors, friends, and busy people. The separate members of the Cabinet, officers, and men with "plans," came to sit on the quiet, cool piazzas, and often spent hours walking and trees.

Mr. Lincoln was frequently to be seen alone, leaning heavily against the pillars of the power with the could be a general He'd finish up this old war!"

Each worker has her special task. Each worker has her special task. After the first baking one lays on the flesh tint, another blends in the rouge on the cheek, paints an eyelash or eyebrow, or gives the vital touch to nostril or ear, while an army of children deposit the Inished faces on a ourtained shelf, where they are left to dry before going to the oven for another 30 hours' bake.

(What are you doing?" we asked an old

"What are you doing?" we asked an old man who sat at a log cabin window chip-ping off spherical bits from a huge layer of

cork.

"Making brains," was the reply. "Her dollship's brains!"

The second baking prepares the heads for the eyes. They are of glass and enamel—most delicate, most exacting work. The eyes are made in a cellar, into which the sunlight rarely peeps. The violet eyes require the most skill. The eyes made, they



Modeled From the Human Baby.

are carefully matched and glued into the head, which is then fastened onto the body. The cork brains now round out the bead and the doll passes from the hands of her creators to the coiffeure's boudoir, where, from great boxes of hair, varying in color from palest gold to raven black, in texture from nature's sheeny silk to flaxen tow, her crowning glory is chosen. Not a cry, not a word does dolly utter as her locks are combed, twisted and tacked to her brains with little brass nails! Hair dressed, her dimpled feet are slipped into the danties: Louis XIV slippers of satin or leather, made by 14 year-old

Coiffured and shod, her dollship now puts on a white chemise. Packed in a box she is then sent for a nap to the warehouses until summoned to the great doll depots of Paris, from which she is likely to journey Paris, from which say to the four ends of the earth.

LIDA MCCABE.

TALES OF TAD LINCOLN.

Whims of the Martyr President's Son When He Was Eleven Years Old-His Father Humored Him-Drilling at the Soldiers' Bome-Doing Hamlet.

(WRITTEN FOR THE DISPATCH 1 "The Soldiers' Home was a place worth living in, in those days," said Jamie. Jamie is now a rich man in Philadelphia: but in the years of '63-4 he was the small son of a very busy father, whose work was with the President, and he was also Tad Lincoln's oldest friend and comrade.

Everybody knows how Mr. Lincoln humored and loved his small 11-year-old boy, whom he nick samed "Tadpole," and called "Tad" for short.

At a little distance from the pretty vine covered cottage, where the President's family spent their summers, on the Corcoran farm, hundreds of soldiers were encamped. The white canvas dotted the wide green fields everywhere, and in the shade of heautiful oaks, maples and pines the hospital tents were filled with wounded and dying. All day long from the city, from boats and trains, ambulances rumbled over the stones and pavements out into this lovely country spot.

Interrupting a Cabinet Meeting. One hot day in July Tad surprised his father in the busiest hour of the day by appearing in town in the Cabinet room dreesed in his top boots, blue jockey cap, whip in band. In terrible haste he said:
"Father, I've come for an order to the Secretary of War for two rubber blankets! two good-sized drums! one tent! and rations for

two good-sized boys!"

Although Mr. Lincoln's Cabinet were used to Tad they looked up and awaited with droll smiles the grave father's reply. with droll smiles the grave father's reply.
With one long finger on his man, a sentence of painful impost on his lips, Mr.
Lincoln looked into the scrap of a face, then at the big red one of the Secretary of War and laughed outright.
"Come here, my son. Who are the boys, and are they for the Union, and where do

they serve their country?"
The leaned on his father's knee and

The leaned on his lather's knee and eagerly went on:
"You see, father, Jamie and I have joined Company D in the Soldiers' Home. We are on waiting orders, and mother wont give us blankets oft our beds, and says you must supply rubber ones so we won't get crippled up with rheumatism, you know. It won't take long for here is Mr. Stanton right here!"

Drilling the Soldier Boys. Drilling the Soldier Boys.

The boys went into camp next day. Every spare, hour was spent with the soldiers. The would beat "the reveille," shout orders with the officers, drill with the companies, and rush the men into double-quiek, until the whole camp was in an uproar. Tad's young, clear voice would ring out: "Fall in, Company D! fall in lively!" And Company D, men and officers, would obey.

The soldiers used to say "they had rather be marched into the summer house 20 times a day by that young reseal than to eat a a day by that young rascal than to eat a

a day by that young rascal than to eat a good dinner."

At evening when the handsome carriages where rolling through the guards, Tad and his friend were usually to be seen perched on the broad verauda of the Old Men's Home, drumming away with all their might, and surrounded by admiring soldiers.

Secretary Chase pointed him out to a distinguished party one night as they drove by: "Who would think that little urchin in blue, making all that racket up there, was

trees.

Mr. Lincoln was frequently to be seen alone, leaning heavily against the pillars of the porch, with his deep, sad eyes turned toward the great city, no doubt thinking upon the battlefields beyond, with a heart-seche that probably no other President will ever know. Taking the crowds of evening visitors into his reckonings, Tad made known another of his "happy thoughts" to his mather.

Why couldn't he organize a splendid the-atrical company out of the soldiers! The biggest tent could be the theater! One hos-pital tent was empty! The guard, corpor-als, drummers, cooks—they all had given their solemn promise to learn their parts

right away.

Mrs. Lincoln not replying, the boys took her consent for granted, and Tad was over-joyed—"Jamie," he said, "run over to your mother and get her Shakespeare; father has two and Mr. Stanton has one. I'll ask Mr. Seward for his! It takes a good many to go round; I know lots out of some plays, for father and I recite it together nights."

The President Was Patient. The President Was Patient.

"Now, Tad, you are not to get up another thing! Your poor father is tired out with you," exclaimed Mrs. Lincoln, suddenly. "I know, mother, this won't tire him—he's awfully interested in plays."

Here Tad spied his father on the piazza, just getting home from a long, tiresome day. With his small face against the President's shoulder, he began: "Father, if you'll help us—Jamie and I—get up a first-class theater in camp, you and all the Cabinet shall come in every night for 15 cents! And it'll be 25 for all the others, even mother!"

Mr. Lincoln stroked Tad's head and answered slowly: "Well—that is quite an object! What plays do you give, my son?"

swered slowly: "Well—that is quite an object! What plays do you give, my son?"
"Well," said Tad, "if they get the parts firstrate, we'll give 'Hamlet' first."
"Now that a fair price for 'Hamlet'—15 cents! Yes—I think Chase and Seward will be glad to give that!" said Mr. Lincoln.
"But father—don't laugh! It would cost them more than that to go to a common size.""

A week afterward Mrs. Lincoln said to some friends: "This theater business of Tad's beats his Company D fever. I am countermanding orders all the time. The servants leave their work to 'take parts!' I met Isaac just now decked out 'in costume.' And who should I see this minute, as I sent for the carriage, but John, the coachman, in long robes, trailing behind Jamie and Tad, 'going to rehearse!' There never was such boy.' He servante out 'Weit a minute. going to rehearse! There never was such a boy! He screams out, 'Wait a minute, mother! John won't be long! this is the very last rehearsal before to-night.'"

The best camp chairs were taken off the piazzas, the best table cloth was for the ghost! the guard changed off an hour earlier to practice, while a kind of high art color was painted on the back of the tent to make it more effective by candle light.

Tad in the Role of Hamlet. Tad was sorely tried. "Father was so busy! and no two of the Cabinet ever came out at once!"

let, Jamie as the ghost. •

The proud father and Mr. Stanton and Mr. Seward occupied front seats. The tent failed to hold half. The sides were turned up that the crowds outside might enjoy the

Eagerly, clearly, and in a tragic voice Tad said, as he mounted the box, close to the row of candles:
"If it assume my noble father's person,"
while his eyes rolled nervously in the direction of the side entrance. "Would the
night were come," another glance at the
crack in the yellow cloth, then exit. "So

A flourish of trumpets outside the tent. A long blast from all the bugles in camp! The Ghost in a Tablecloth. Tad reappears: "Angels and ministers

A large Horatio enters: "Look! my lord.

detend us!" A smothered sound from the front seats. The long damask tablecloth, the large bath towels with draggling fringe, and the ghost marches in! Tad again: "Oh, my prophetic soul."

Human nature could stand no more, and the front seats are researched.

Human nature could stand no more, and the front seats were vacated! Secretary Seward told his family it was worth \$100, but defeated and mortified he laughed aloud. So, choking and gasping, he and the President were obliged to go at an early hour.

One of the sick soldiers, Old One-legged Hans, was so grieved that he couldn't see his President's son as Hamlet that Tad and Jamie repeated their parts at his bedside; when weeks afterward the good old man died, Tad told his father that "Hans had. died, Tad told his father that "Hans had gone now where he had two legs, and could join another Revolutionary War."

MARGARET SPENCER.

MARGARET SPENCER.

FACTS ABOUT SOAP.

What Is Agreeable to One Skin Is Like a Polson to Another,

There isn't any way of judging of the value of a toilet soap except by trial. Because the value of a soap, no matter how loughly the advertisements may cry its merits, lies in its adaptability to the skin of the person using it—that is, to yoursel And toilet soaps are like friends—purely a matter of personal idiosyncraey. Either they agree with your skin, or they do not, If they do they will leave it clean and If they do they will leave it clean and

If they do they will leave it clean and white, and soft and fresh. If they don't, they will either roughen it into minute points like sand paper, or dry it, making it feel withered and old, or redden it, or make it smart as if with sunburn.

All these latter things, may happen, and yet the soap need not be a wicked soap at all. It may be as pure and as expensively concocted as it is advertised to be, and yet it may do your hands a positive injury. It know one woman whose hands are dried by one of the most famous and expensive French soaps; one that is known to all the world as periectly pure and even of an unusually healing and softening power. And yet the white soap that she buys at her grocer's for five cents a cake keeps her hands as smooth and soft as velvet. Soaps that contain much glycerine do not agree that contain much glycerine do not agree with some skins; soaps that contain an excess of oils do not agree with others. It is like tastes; there is no accounting for it.

PERFUME IN CRAYONS. A Novelty That Came to a Belle of Boston

Town From Across the Sea.

Town From Across the Ses.

A dainty and novel gift lately received from Paris by a young Boston girl is a box of perfume. Not a box of bottles of perfume, but an exquisite, hand-painted, gold-bound box of perfums solidifies, perfume in the shape of little sticks or crayons. The good feature of these is that they can be applied without moistening or in any way injuring a delicate fabric.

If the possessor can get her own consent to depart from that good old rule, "the best perfume is no perfume at all" (and most women confess to prime at all")

"a delicate perfume, a very little, you know"), she rubs the crayon lightly on her handkerchief, her gloves or her bouquet of satin violets, and goes sweetly on her way.

THE RUNNING BROAD JUMP.

Waiter Dohm Tells How the Experts Do-Laying Off a Course—The Champion of the World Is a Student—The Require-

[WEITTEN FOR THE DISPATCH.]

Boys now-a-days give so much attention to the intricacies of baseball and football that they seem to have little time left for the vastly more simple and natural sports of jumping, hurdling and running. Every boy has his rating among his fellows as a fielder or batter or as a rusher or balf-back; but how many boys, I wonder, have any idea as to how fast they could run 100 yards or a quarter of a mile; whether they could clear in obstacle at all on the rnp, and whether a ditch would have to be 18 feet wide or only a dozen to be impassable except by means of a bridge.

Broad jumping is a very different sport to-day from what it was 20 years ago. Then

the athletes jumped from a whitewashed line. They took a short run, a great spring, and came down on their heels on the hard ground with a shock that you would think would have loosened their teeth. In those day's championships were won by a leap of 18 feet, and the jumper that could clear 20 feet was looked upon as a wonder. Modern Facilities for Jumping.

Suppose now you visit the grounds of a modern athletic club. On the field, inside

Getting Ready for a Leap.

ready to jump. Notice that the shoes he wears have each six sharp, half inch spikes in the toe, and a similar spike in the heel.

The jumper toes the line which he has drawn across the run as his starting mark. His eye is fixed on the check mark. To-

ward this he runs, slowly at first but in-creasing his speed with each stride. His stride is so regulated that he will exactly

toe the check mark. From the check to the

sink over ankles in the soft pit. No fear

This rule may not at first seem fair, so let

the ditch? An expert jumper will often strike the plank accurately half a dosen

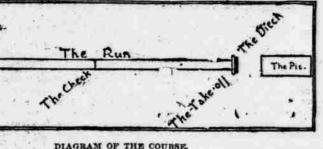
The Effect of the Weather.

And this, too, in spite of the fact that either the weather or the condition of the run may make a difference in the length of his stride. The stride is always longer on a

11

long a start as the other experts, as he thinks a run of 90 or 100 feet takes the strength out of the muscles. Reber jumps awkwardly, at least it appears so. You can see in the illustration how "sprawly" he modern athletic club. On the field, inside appeared when he made the jump that the oval quarter-mile running track, you broke the record. Before landing, however,

versity, Missouri. He is but 21 years old, and up to last spring had only a local repu-tation as a jumper. Reher does not take so



he gets his feet together and comes down will find a straight track about 90 feet long will find a straight track about 90 feet long and 3 feet wide. It is topped with a coat of cinders or brick dust, is smooth as a table, firm and springy. This is the "run."

Across the end of the path, nearest the grandstand, is a thick, whitewashed wooden plank, five inches wide. Look at the plank and you will see that the upper side, which is level with the surface of the running path, is full of little holes, as though tacks had been driven in and then withdrawn. This plank is the "take-off" or line from which the jump is made.

Ten or a dozen feet from the end of the track and plank is a aquare "pit." It is, asuly and gracefully.

A Regular Track Is Needed.

A Regular Track Is Needed.

It would be a good thing for the boys of any village or neighborhood to club together and build a regular track for broadjump work. The labor and expense, divided among a dozen boys, would be small for each, while the enjoyment and physical benefit would be great. The boy who wishes to become a broad-jumper should not, if he is unaccustomed to the exercise, begin his course of training by jumping, else the next day every bone and muscle in his body will ache. Let him first get the muscles hardened by a week or ten days' muscles hardened by a week or ten days' practice in running. Then he may begin to jump, but not more than twice or thrice a week.

Ten or a dozen feet from the end of the track and plank is a square "pit." It is, perhaps, 16 feet long and 7 or 8 feet wide. The pit has been filled to the level of the take-off with a mixture of sand and loam. The soil on the side of the plank next to the pit has been removed, leaving a little ditch 3 inches deep and 6 inches wide. week.

The take-off should be the old-fashioned whitewashed line. When he has learned to strike this with some degree of accuracy, he may use the regulation plank, but without the ditch. Rubber soled shoes will do at first, but when the novice becomes proficient, he should get spiked jumping shoes. These may be obtained of any dealer in sporting goods at a cost of from \$2.50 for the ready made to \$7 for the made-to-order, kangaroo skin article. The run need be only a firm, level stretch of ground. The pit may be made sinply by loosening the ground with a spade and picking out any stones that may be there. Where to start and where to place the check must be learned by experience. The check is usually from 7 to 11 running strides Now watch the expert jumper who has come out for a little practice. He first measures off about 85 or 90 feet from the "take-off" and carefully marks this point on the run. About midway to the take-off, he places a check mark—a handkerchief, or a bit of white paper. He takes a little run to limber up his muscles, and then he is check is usually from 7 to 11 running strides from the take-off, and the start the same distance from the check.

There is no more important rule for broad jumping, than to come up to the "take-off" at full speed. It is a fatal mistake to slow up or "balk" in the last stride. It may take some time, however, before the jumper loses his fear of striking the plank at top speed with the spike-shod shoe. WALTER C. DORM.

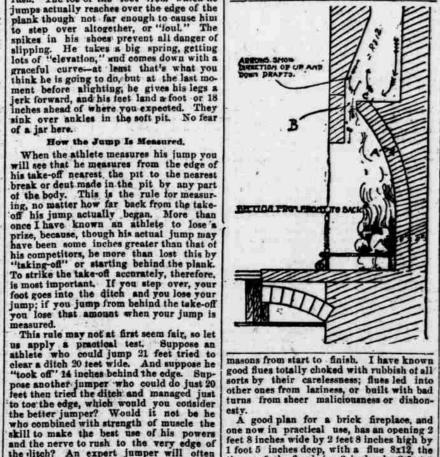
THE PROPER KIND OF GRATE

Shelf Just Above the Throat Will Make It Draw Better.

Although the reasons for smoky flues are manifold the ways of avoiding them are not intricate; not beyond the reach of any person of ordinary intelligence. I speak of son of ordinary intelligence. I speak of smoky flues, because one can see smoke. In this city of natural gas the necessity for good grates and fireplaces is just as great; for while the products of combustion are not visible, they are just as dangerous from a health standpoint.

Speaking first of external causes, the top of the flue must not be within the close proximity of overtopping trees, or ridge poles, or dormers. If the house is situated in a very windy place a flat stone placed on top of the stack will prevent a down

in a very windy place a flat stone placed on top of the stack will prevent a down draught, the smoke being allowed to escape through side vents below it, on all four sides. These points being provided for, it remains to place the fireplace and flue properly, and especially to watch the



masons from start to finish. I have known good flues totally choked with rubbish of all sorts by their carelessness; flues led into other ones from laziness, or built with bad turns from sheer maliciousness or dishon-

A good plan for a brick firepiace, and one now in practical use, has an opening 2 feet 8 inches wide by 2 feet 8 inches high by 1 foot 5 inches deep, with a flue 8x12, the throat of the flue being 3 inches by 2 feet 8 inches, and the back of the figeplace curving forward to effect these latter dimensions and ending in a shelf about 6 inches or 8 inches above the under side of the flat arch at the top of the opening. I have never known a fireplace of these proportions to

known a fireplace of these proportions to smoke.

Many people advocate the use of a straight back for fireplaces, with no inside shelf, the flue gradually narrowing to a moderate size. But it has been my experience that while this has often worked well on the lower story of a house, it was open to the objection that there was no check to down draughts, such as is afforded by the shelf "C," and in the upper floors of a house the flue was sure to smoke at times.

K. W. WINCHESTER. his stride. The stride is always longer on a warm than on a cold day. The heat relaxes the muscles and enables the athlete to "extend" himself. An athlete nowadays who can't clesr 21 feet hardly thinks it worth while to enter for a championship competition. Davin, an Irishman, holds the English record, which is 23 feet 2 inches. We are away shead of our cousins across the water, for we have developed three athletes who have records better than Davin's. Malcolm W. Ford has leaped 23 feet 3 inches; A. F. Copeland has jumped one-eight of an inch farther than Ford, and Charles S. Rebes, the champion of America and holder of the world's record, is credited

with the remarkable distance of 23 feet 61/4 RIDDLES OF GREECE Reber is a student of Washington Uni-

> Intellectual Athletics That Greatly Pleased the Ancients.

WOMEN WERE THE BETTER AT IT.

The Rhyme of the Cherry Had Its Origin in a Blackberry Puzzie.

PUNS FEW AND HARD TO TRANSLATE

IWRITTEN FOR THE DISPATCH . It is not necessary to prove to anyone who reads his Bible or the newspaper that there is nothing older, nothing never than the riddle. Perhaps the Greeks spoiled their repasts more frequently than we do by cracking enigmatical nuts; but the mania is by no means dead, and an abhorrence of conundrums indicates a lack of true sym-

pathy with the life of the people.

The history of the riddle, like the history of proverbs, forms a large part of folklore. Chapter upon chapter might be writ-ten on the animals alone that figure in riddles as they figure in proverbs, which are often nothing but abridged fables. But the goat and the dog in Greek proverbs are not our goat and our dog, and the swine itself has a subtle differentiation from our hog, as the razorback differs from the Berkshire. And apart from the moral and physical characters of the animals that play so con-spicuous a part in this realm of study, we counter mysterious powers disguised in the form of hearts

Women Were the Riddle Makers,

the riddle of our race resembles the riddle of the Greeks. In the first place, in both cases, the riddle has a tendency to sing itself, to fall into some kind of rude verse, now alliterative, now quantitative, now rhyming. The riddles of the nursery are almost all chants, and the earliest Greek

was one Clesoulina, associated Edinests, the Wise Woman, and a comedy was named after her, "The Clesoulinas," doubtless a repertory of Joe Miller's. Her riddle about the "cupping glass," or rather the "cupping brass," one of the oldest of surgical instruments, is among the earliest and most famous on record:

other man.
So close the two
Together grew
That you would say
One blood were they.
Now read my riddle if you can.

one of his subjects.

It may not be without interest that in one It may not be without interest that in one of the oldest contests of this kind, the one between the seer Glaucus and the seer Polyidus, the inevitable blackberry riddle figures: "First red, then whits, then black." And as blackberries have been proverbially plentiful ever since, it is no wonder that this riddle has held its own to the present day. Only in a German popular riddle the cherry has taken its place. The rude verse, imitated, not translated, runs tus:

White as snow. white as show,
I let it go;
Green as grass,
I let it pass;
Red as blood,
Not yet good;
Black as pitch,
Give me sich!

"Sich." by the way, is excellent English We nass over the graver contests, when kings ask sages or sages ask one another:
"Which is the oldest thing, the greatest "Which is the oldest thing, the greatest thing, the wisest thing?" Nor can we linger on the riddles of Æsop for which an Oriental origin is claimed by many scholars who trace them now to Arabia, now in India. The story which has the deepest significance as well as the widest popularity is that in which Æsop undertakes to drink the sea dry and, when confronted with his task demands that the rivers be turned off first as they were not included in the bar-

Rigdles With More Than One Answer. Roman boys asked one another: "My mother bore me and is borne of me." The answere is "ice," although it might be a dozen things, and the Greek form of it makes the answer "day and night," either of which will serve. Indeed the night as the work of the day has figured in serious

which life is the forfeit of faiture to read the riddle. The most familiar of these is the question propounded by the Sphinx, which still enjoys a wide popularity in Greece. Unfortunately so much crawling is done at all ages that "four-footed in the morning, two-footed at noon, and three-footed at night" will hardly cover the facts.

im what they had caught, replied him what they had caught, replied:

"What we caught we lett; what we did
not catch we have on us."

This riddle had great popularity, although
Homer's scholars when they mention it put
it aside soonfully—not recognizing the interest taken by the people in the fortunes
of the poet hero. The walls of Pompeii
show the meditatory poet and the inquiring
fisherman. Less serious was the Greek cus-

tom of asking conundrums after dinner, which was a favorite way of testing the capacity of a suitor for the hand of the daughter of the house. The casket story in the "Merchant of Venice" is of the same family. Decapitation puzzles were very common, as were all the other tricks with letters. Anagrams were favorite playthings, and the whole brood of acrostics.

The chapter of riddles that involve puns The chapter of riddles that involve puns must be passed over as, in the main, puns cost more to translate than they come to. And then the Greek language in its phonetic perfection did not readily admit of puns, and a successful pun was a matter of self-gratulation such as we can hardly understand. The most ancient of all was the pun by which Odyssus deceived the Cyclops, who understood him to say "norman" when he said "noman" (nawman), a cockney possibility which I blush to record. The best Greek pun on record requires two words to make it and reminds one of the Hamburg gentleman who made up clubs of four to understand one of Rivarol's jokes. The Odyssey contains more than one rid-

four to understand one of Rivarol's jokes.

The Odyssey contains more than one riddle. The "Kine of the Sun," in the twelfth book, are the days of the year, and the sheep are the nights of the same. The description in the tenth book of the land in which a sleepless man could earn double wages is a riddle, the answer of which is sought in the extreme north; and the cave of the nymphs in the thirteenth is still an enigma.

enigma.

Some of the literary riddles were exceedingly clever, so clever that the solution has not been found yet, like Praed's "Sir Hilary at Agincourt," and having reached this point in our wanderings we take the hins and "give it up."

Closing sale of winter suits, trouser and overcoats. Suits to order \$25, pants at Pitcaira's, 434 Wood street.

Let us study some of the points in which

riddles are in verse. And the earliest makers of riddles are women, "spacwives," to use the homely Scotch word for Sibyls. The Sphinx at one end, Mother Goose at the other.

The great riddle maker among the Greeks was one Clesbulina, also called Eumetis, the

I saw a man glue brass with fire upon an-

Of very ancient date are contests in rid-Of very ancient date are contests in rid-dles. King Solomon and the Queen of Sheba met for such a trial of wits, and Josephus tells us that Solomon was too much for Hiram, of Tyre, as well as for the Queen of Sheba, until Hiram got help from

About Berries and Cherries.

poetry from Eschylus down.
In such contests to lose one's head figuratively was often to lose one's head liter-ally. There are many ancient stories in which life is the forieit of failure to read the

One of the more famous riddles of the dangerous kind is that which cost Homer his life, for the poet is said to have pined away because he could not find the key to the fisherman's riddle, who, when asked by him what they had caught realized.

Doesn't Pay to Translate Puns.

B. L. GILDERSLEEVE,
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