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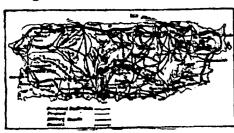
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The Coal Problem and Many Other Expen pensive Items Meet Ready Solution By Reason of Abundan: Water Power-Lab orers Earm About 75 cts. a Day.

The establishmen, of electric tramways throughout the island of Porto Rico, from east to west along the central range of mountains, is desirable, easy, and relatively inexpensive. An electric line, sparting from Naguabo or Humacao at the east end, touching the interior towns of Juncos, Cagaus, Aguas Buenas, Sabana, del Palmar, Barranquitas, Barros, Jayuya, Utuado, Adjuntas, and Maricao, and terminating at Mayaguez, with branches from the main line to the villages along the coast, would serve better than any other system to move the rich products of those districts and to accommodate the great number of passengers who now have no means of convenient travel.

The coal problem, and many other expensive items of railroad building. need not be a consideration in the operation and construction of such a tramway system, as there exists throughout the whole mountain range natural water powers available for any class of machinery. The many and powerful waterfalls having their sources in the mountainous inland region, and the rivers which run through this territory in various directions, seem to have been created by nature especially to aid man in the cultivation of the rich soil and the market ing of its products, which, because of the high altitudes and necessarily heavy grades of high-roads, if these should be built, would otherwise be very costly. The interior of the island is extremely mountainous, as may be well seen from some of the illustrations. Around the entire extent of its coast, however, is a flat belt of rich lowlands suitable for the cultivation of sugar and tobacco.



MAP OF THE ISLAND OF PORTO RICO The highest village of Porto Rico, Aybonito, situated at an altitude of 2.300 feet above sealevel, is on the line of the central highway which runs from Ponce to San Juan. This fine highway, built originally by the Spanish government for military purposes, has no grade greater than 14 per cent., which would be the maxi mum also to be met with in the construction of a transway along the

mountain range. The ballasting of rockbeds, in whatever direction the lines might run. would cost but little, as there is more than enough material for this purpose on the ground; and throughout the whole extent of the proposed lines there is to be found wood of excellent quality for cross-ties. The labor required for such a construction is abundant and comparatively cheap, as the laborers in this region, accustomed to the hardest work, have never earn ed more than 75 cents a day (Porto Rican currency); and it would be an exceedingly easy matter to procure 2,000, 3,000, or 4,000 men for any kind

of an enterprise. Skillful stone cutters are easily to be had; and on the ground along the route is found an ample supply of stone suitable for bridges, culverts, and other constructions of a similar nature. In short, it is not necessary to seek elsewhere the materials for the construction of a trainway or railroad, as all, excepting the rails and other metal parts, are to be had along the mountain range. With abundant and well-distributed water power, from streams that do not fail even in the dryest sessons; with the materials for ballast and ties at hand; with labor cheap, good, and plentifulthe building of electric railway lines will certainly be attended with but little cost compared with the substantial profits that such lines may be ex-

pected to earn. In the whole island, whose coast line measures 839 miles, there exist only the following steam railway lines, belonging to a French company: One line, of one meter gauge, from San Juan to Camuy, sixty-two miles long, and its operation produces an average income of \$2,735 per mile annually. Another line leaving San. Juan on the north, passing through Martin Pena and Rio Piedras, and terminating at Carolina, is 14 miles long. But the income from its opera-



DRYING COFFEE IN PORTO RICC.

tion is not so great, as another steam railroad which runs in the same direction for half the distance, or to Rio Piedras, thus dividing with it the traffic of that region. Still another line, 35 miles long, runs from Aguadla to Hormigueros. Another short line is in operation between Yauco and Ponce, a distance of 22 miles, with two stations on the line at Guayanilla and Tallaboa. This railroad has an average annual income of \$2,760 per mile, but it should be noted that, because of the high freight rates, \$2.25 per ton for a 22-mile haul, or ten cents per ton-mile, a great part of the freight-carrying between Yauco and Ponce is performed by ox-carts, in successful competition with the railroad. The freight rates of the ox-carts are not much lower than those of the railway, and the speeds are about the same. Besides this excessive charge, the railway does not offer the facilities which should obtain in this district, as it does not reach to the harbor of Ponce, where the great bulk

froits from the railroad station to the harbor front by carts being a very costly item, as well as a source of great inconvenience.

The territory which produces the most coffee is in the high and mountainous parts of the island, along the central range, and here it is that the greatest need is fest for transportation facilities, the only existing means of communication being by horse roads or mule paths bunt by the residents. From the plantations where the coffee is gathered to the nearest towns on the coast, whence the berries may be carried in ox-carts to the markets. carriage is affected, at the present time, on the backs of horses and mules, which can take only 200 pounds a trip. These horses bring back an equal quantity of provisions and merchandise for the subsistance and necessities of the laborers and other inhabitants of the interior. For this transportation on horses and mules \$1 a hundred pounds, each way; is paid from the points most distant. and 50 cents from the nearer points .-The Engineering Magazine.

Postions in Sleep,

The position affects sleep. A constrained position generally prevents repose, while a comfortage one woos sleep. Lying that on the back, with the limbs relaxed, would seem to secure the greatest amount of rest for the

muscular system. This is the position assumed in the most exhausting diseases, and it is gen- and the authority of the United States erally hailed as a token of revival when a patient voluntarily turns on

But there are several disadvantages in the supine posture which impair or embarrass sleep. Thus in disordered conditions of the stomach the blood seems to gravitate to the back of the head and to produce troublesome dreams.

Nearly all who are inclined to snore do so when lying on the back, because the soft palate and uvula hang on the tongue and that organ falls back so as to partly close the top of the wind-

It is better, therefore, to lie on the side, and in the absence of special disease rendering it desirable to lie on the weak side, so as to leave the healthy lung free to expand, it is well to use the right side, because when the body is thus placed the food gravitates more easily out of the stomach and the weight of the stomach does not compress the upper portion of the in-

The Camel as a Plow Borse. Count Skorzewski, a wealthy land owner in the province of Posen, Germany, to the amazement of his rustic neighbors, has introduced a povel depasture on his Czerniejewcel estates, which stands a fair chance of being widely imitated in agricultural districts in western Europe. Instead of a horse or ox a camel is yoked to the plow, and the experiment has proved successful beyond the count's most sanguine expectations. The camel, inured to hardships and privations, is exceedingly tractable and can be kept in good condition-for a camelon a comparitively small quantity of inferior fodder. The "Skorzewski quadrupeds," as the peasants of Posen facetiously call the laborious intruders. were soon acclimatized, and are the envy of the countryside.

Old Copper Cents. It is estimated that there are 199, 900,000 old-style copper pennies some where. Nobody knows what has become of em, except that once in a while a single specimen turns up in change. A few years ago 4,500,000 bronze two-cent pieces were set affoat. Three million of them are still outstanding, but are never seen. A million of three-cent silver pieces are scattered over the United States, but it is very seldom that one comes across any of them. Of the 800,000 one-half-cent pieces, not one has been returned to the government for coin-

age or is held by the treasury. Wonderful Nerve.

A woman shoplifter was caught stealing an umbrella the other day in a Philadelphia dry goods store. But it was decided not to prosecute her if she would pay for the umbrella, valued at \$2.50, which she did. The next day she returned and requested to see the manager. When that surprised person could recover himself sufficient- it for a year, and then come and see ly to ask her business the woman calmly told him that she had been pricing umbrellas in other stores and found she could purchase one like her own for \$2, and she wanted to know if he wouldn't refund her 50 cents. As a tribute to her monumental nerve the 50 cents was handed her in silence.

Growth of a Story.

As an example of how a story grows it is related that a report recently reached Ottawa, Kan, to the effect that the coal miners at Ransomville had found a petrified snake 60 feet long and nine inches in diameter. Prof. de Yates of Ottawa college hurried to Ransomville in fear that some other fossil collector would get ahead of him and found that the alleged snake was a bit of petrified root 18 inches long and a half inch in circumference.

Loss of Umbrellas,

Every year 600,000 umbrellas are said to be lost in Paris. According to these statistics, one person in every four loses his umbrella. The police say that ladies are much more careful with such articles than men, for the number of parasols taken to the lost property office annually is only about one hundred.

French and German Armies.

Five and twenty years ago France was able to put the same number of soldiers into the field as Germany. Now the German military forces, or rather the men of German nationality capable of bearing arms, would outnumber the French by a million.

In New Zealand a species of parrot is found that, finding its food entirely on the ground, has lost the power of flight. It differs from the rest of its family only in this particular and in being almost voiceless.

In this country placing the thumb to the nose and extending the fingers is of business is done. Bulk must be a sign of derision. Among certain bill broken and the goods transferred, the tribes in India it is the most expressive transportation of merchandise and manner of showing respect.

RESOURCEFUL ENGINEERS. Qualities Exhibited by a Corps of Electri

oinu in an Amergency. It has been stated that one of the leading qualities exhibited by electrica engineers during the war was readiness of resource. This is well illustrated in a story told by one of the officers of the corps. There was a good deal of uneasiness about that time around Boston, as no one knew but that the Spanisa fleet was sailing straight for the city, and shells might be flying within twenty-four hours. On Saturday morning orders came down to a squad of engineers to set up before night a complete isolated plant for searchaght work on one of the fortifications in the harbor. The men in charge of getting the boiler down the way could get no suitable boat anywhere, so they simply plugged the holes in the boiler, rolled it off the pler, hitched it to's tug, and towed it down the harbor, kept affoat by the air inside it. The men who had to take down the engine and dynomo managed to get their machines landed. but there they waited, with apparently no prospect of going further. On the whole island there was only one truck strong enough to carry the machines from the dock to the fort, and that was in charge of an Irishman in the employ of the city of Boston, who doggedly maintained that he took no orders except from the city officials, government was nothing to him. It was already late in the afternoon, and there was no possibility of reaching the office of the authorities in time to secure the permit. The men simply took the driver to their barracks, got him dead drunk and did their own

Report of Bill blue, Willian Bine was an engineer in the employ of one of the trunk lines in Missouri. ne of his duties was to haul the through freight over the Western d'vision, and his pet engine was No. 2. One night he had an accident. One of the flues in the boiler o. his pet engine blew out and he was stalled, blocking the main line. He reported the matter to the division superinten_ent unwittingly as fol-

urlying. And the searchlight shone

down the bay that night.

"Engine two blew out a what'll I do?—Bill Blue." Then he sat down to await instructions. This is what came over the wires from the superintendent's of-

fice twenty minutes later: "Bill Blue: You plug that flue in engine two and pull her through in time to get out of the way of twentytwo. This order is stuck up in the cab of

Engine 2. Sorting Walnuts Recently two walnut shippers of Angheim county, California, found that many of the walnuts in their possession were light and empty, and they cast around for some means to r handle the go almost endless job to do it by hand. They finally evolved the machinery to do it with, consisting of a four-foot blast fan, twenty inches wide, propelled by a three-horse power gasoline engine. The fan is set revolving very rapidly and the nuts are precipitated into a trough leading down to the fan, whence the heavy nuts drop into the bin made to receive them, while the light ones are blown into a receptable arranged for them further on. The force of the wind is sufficient

Broke Into Prison.

the good ones fall straight down.

to blow the lighter nuts aside, while

At last a man has literally broken into prisor. We are always hearing of men who break into it figuratively by committing a crime which lands them there, but Jefferson City, Mo. boasts of a man who broke into prison just as many another man has broken into a house or a store. No one knows. why he did it just the same. When discovered he had scaled the wall and was ready to drop down on the inside, and in spite of the sentry's challenge he did drop down.

Practical Philanthrophy.

A young Philadelphian went to a millionaire friend and asked pecuniary aid to start him in business. "Do you drink" asked the millionaire. "Once in a while." "Stop it! Stop it! Stop The young man broke off the me." habit at once, and at the end of the year came to see the millionaire again. 'Do you smoke?" asked the success. ful man. "Now and then." "Stop it? Stop it for a year, then come and see me again." The young man stopped smoking, but he did not go back again. "He'd have told me," he said, "that now that I have stopped drinking and smoking I must have saved enough to start myself in business, and I have."

Costly Setting for a Tooth. The solitary tooth of Buddha is to be contained in what will probably be-...e most valuable coffer in the world. A Shan chieftain recently sent to Moulmein, in Burmah, an emerald worth, it is declared, two lakhs of rupees, in order that the Burmese Buddhists might include it among the jewels which they are going to send to Ceylon in order to adorn the tooth-holding coffer. Jewelry worth 50,000 rupees has been already received from Rangood and Matidalay; and the Moulmein Buddhists have themselves secured Jewelry, to the value of 85,000 rupees: Thus the total value of the jewelry adorning the coffer will be about three and a half lakhs."

Close Figuring.

The friends of a popular preacher who recently died in Louisville, Ky., undertook to raise a fund for his family. One man gave his note for ninety days for a certain amount, and when the committee explained to him that cash was needed he agreed to pay the note in cash if the committee would discount it, which was done.

The Hagfish. There is a creature known as the hagfish, or myxine, which is in the habit of getting inside cod and similar fish and devouring the interior until

only the skin and the skeleton are

THE MIND'S EYE

WEER TRICKS THAT OUR VISUAL ORGANS SOMETIMES PLAY ON US.

We 500 One Thing or Another Asserting to the Mind's Impression-Pictures The Change When Stared at Standily-Some Amusing Tests.

That we sometimes see with our minds as well as our eyes is brought out interestingly by Joseph Jastrow in the current Popular Science Monthly. The following sections, with their illustrations, afford striking examples of the tricks our eyes sometimes play

True seeing, observing, is a double process, partly objective or outward—the thing seen and the retina—and partly subjective or inward—the picture mysteriously transferred to the mind's representative, the brain, and there received and athliated with other images.

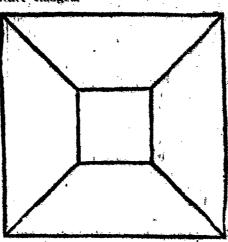


FIG. L

If we view outlines only, without shading or perspective or anything to definitely suggest what is foreground and what background, it becomes possible for the mind to supply these detalls and see foreground as back ground and vice versa.

A good example of this is seen in Fig. 1, which represents in outline a truncated pyramid with a square base. Is the smaller square nearer to you, and are the sides of the pyramid sloping away from you toward the larger square in the rear? Or are you looking into the hollow of a truncated pyramid with the smaller square in the background? Or is it now one and now the other, according as you decide to see it?

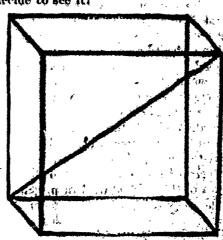


FIG. 2 Here (Fig.2) is a skeleton box which you may conceive as made of wires. outlining the sides. Now the front, or side nearest, seems directed downward and to the left; again, it has shifted its position and is no longer the front, and the side which appears to be the front seems directed upward and to the right. The presence of the diagonal line makes the change more striking; in one position it runs from the lefthand rear upper corner to the right-hand front lower corner, which in the other it connects the left-hand front upper corner with the right-

hand reat lower corner. Fig. 3 will probably seem at first glimpse to be the view of a night of steps which one is about to ascend from right to left. Imagine it how-



ever, to be a view of the under side of a series of steps, the view representing the structure of everlanging solid masonwork seen from under The blocks in i.g. 4 are subject to a marked fluctuation. Now the black surfaces represent the bottom of the blocks; all pointing downward and to the left, and now the black surfaces have changed and have become the tops pointing upward and to the right. For some the changes come at will plorations and more careful to the must be made, however, before

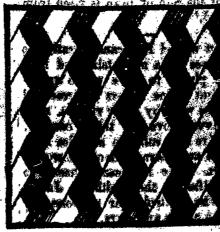


FIG. 4. for others they seem to come unex-

pectedly, but all are aided by anticipating mentally the nature of the transformation. The effect here is quite striking, the blocks seeming almost animated and moving through space. All these diagrams serve to illus-

trate the principle that when the objective features are ambiguous we see one thing or another according to the impression that is in the minds eye; what the object factors lack in definiteness the subjective ones supoft.

Observer—Do you think that you fivence the result. These musications is satisfied that the growth of subserver learn to ride a wheel?

Show conclusively that seeing is not gowers in malarial still is better than Observer—Do you think that yes much can ever learn to ride a wheel?

Beginner—Indeed, I do. After the difficulties I have surmounted in get upon what there is to be seen but it ting one, I feel competent to accompany considerably a subjective material anything.

AN INTERESTING STUDY

Front Tart Regalined in Cremen Wal Bring All Classes Togelhor. The behavior of people in crowds would make an inducesting and y of itself. In an ordinary eroud the ma-jority are spe to be unacquainted with any formal eliquette, and the rest seem to forget all they ever know; only those who are possessed of na-tural politeness and unfailing good nature are saved from becoming savages under such circumstages. Of the local from t

it is unpleasant for people of tellined nature to be brought into very close contact with the roder populace, and it very frequently happens that the very ones who have had most training in courtesy are the most disagreeable when is the milat of a grown. The nerves of the common people are less easily disturbed, and the physical discomforts common to crowds are not greater than they are accustomed to greater than they are accustomed to in ordinary daily life. Unless you can be sure of bearing yourself with courtesy and good humor, you should avoid crowds for your own soke as well as out of consideration for others. If, from choice of necessity, you flock with birds that are not all of your own fine feather, your aim should be to respect the rights of others without relinquishing your own. Ton are not a stick in Central of Stonia. As door mat, to allow request to be trampled upon without remoratrance; nor yet a cur, to snart and snap at those who, perhaps, through no fault of their own, encrosed with wall to be the work baskets associated ancient Peruvian musically those who, perhaps, through no fault of their own, encrosed with a same found to their own, encrosed with a same potent rests for the same found. of their own, encrouch upon you too closely. Even in the lifelest circles people are apt to lose their heads, to say nothing of their heads, when massed in large numbers, as witness the frage that are reported to take

place among the fair "goldle wolles" who attend the queen's drawing room

Of course, every one is present that under the name of teal we aften drink a beverage which has apparent ance with me real leaf. But there are several "teas" which are not fraudulent manufactures, though there are not

made of the leaves.

In Mauritius, for instance, they make tes of the leaves of in ordin. In Peru they delik mate, a ten maur from a nat respected of holly The from a nat 72 species of holly! The Abysinians make a beaufrom the leaves of the catha edulis, which has such atimulating qualities that even a leaf or two of it chewed has all the reviving effects of "the cup that cheers," and thus is most valuable to travelers. The Tanmanians are said to be the happy possessors of no less than a hundred substitutes for test while the Tonkhasse bays tons of their own made of bearies, leaves, woods and bark of trees. In Sumatra woods and bark of trees. In Supatraction coffee leaves are infused in the barpot, and the result is said to be an excellent beverage.

Denomination. The Philadelphia Becord tells of an old Pennsylvania farmer will recently came into possession of a classic for anxiety, and for a long time he could not muster up contage to have It canhed. Finally on a trip to town, be summoned up nerve enough; and strolling into the bank, presented the cheek The teller glapped at it huttly and then, after the fashion of his kind brusquely asked: What denomina tion?" Lutheren gol Gurn til But what's that got tow do with it!" as brusquely replied the old farmer, to official. It required several minutes explanation before the teller could gate the old man to understand his ques tion, and then the latter took his money and departed with sundry growls derogatory to banks in general.

Some Paradexes

"As big as a whale" might be rather small, as there is a species of the ofta-cean genus hardly three feet long. Nor does the "pression "as a wkard as a crab" apply on some of the South Sea islands, for a grab is founds there. that not only runs as fast as an aven-age man; but climbe trees with the ease of a achoolboy. Ner does "the busy little bee he

prove each shining hour! down to Mexice On the contrary, it soon learns that, as there is no winter there, there is no mecessity for laging is a store of homey, and degenerates into a thoroughbred loader.

Africa's Large lake Lake Superior is in dininger of boiling its distinction of being the increase treatment of the world accommon explorers begin to think that also Viatoria Nyansa is larger Singerias covers \$1,200 square miles and Nyansa has been credited vith 50.300 but secent explorations have discovered a hitherto unknown bay on his south side which so increases its known area. not larger than Superior. Fuller exmust be made, however, before a de-cision can be reached.

At a philatelic existilities recently albeid at Birmingham England, there were placed on riew the two most yeluable stamps in the world-s penns and a twopenny Manritins. Only twenty-three specimens of the 1846, self-auritius stamps are known to se Jet and the market value of the two exhibited at Birmington is \$30,000. They belong a leavistan collector, who loaned them for the exhibition.

They Turn to the Latt. The soldier boys in Manils say that the Spatiards and natives there in-variably turn to the left intend of the right in passing others on the sidewalks and in the streets, and comsequently there are numerous sections al collisions with americans.

"He said he wanted to consult me privately on a matter of vital import ance to his future and of course thought it was a proposal." "Wasn't it?" "No, he wanted my advice about choosing a wheel."

An Important Eather

Appropriation is. Phocatronia a a projeticativo malaticativo del projetica d

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ther Ploride Allianies. An alligator is not an attra creature. He has not a slags virtu treacherous, Midseus, He day

pearance. He is not true constitue grotosque is also saguerifications, des a brite- g brette saquerification de la veri so intensity sest flags a brinke from him with localities a lange at his aspesse flags is presence weaks steam services, out place.

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