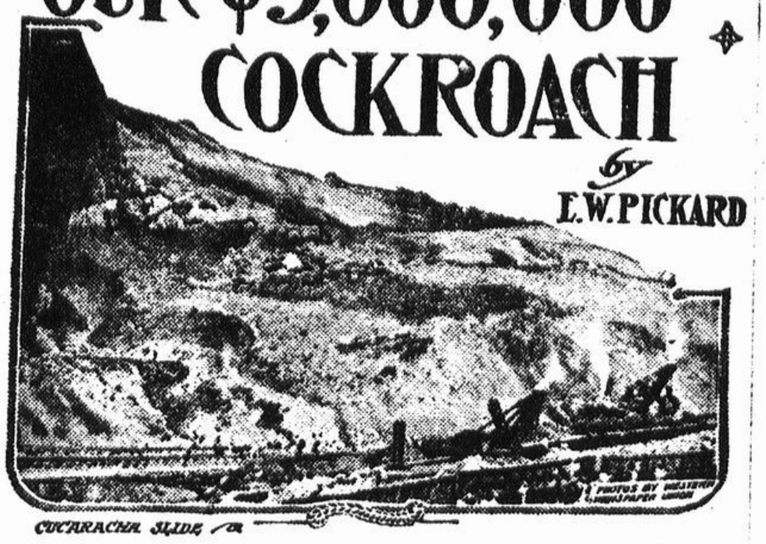
OUR $5,000,000 COCKROACH

by E. W. PICKARD



CUCARACHA SLIDE

Colon, C. Z.—If you wish to hear "language," just say "Cucaracha" to one of the engineers engaged in building the central division of the Panama canal.

Cucaracha in Spanish means a cockroach. In the Canal Zone it means the greatest of the numerous slides that have made the completion of the Culebra cut so different and so expensive. Why that slide was named the cockroach I could not discover. Certainly even the Panamanian cockroach is not so large, and he moves much more swiftly.

Before the first French company quit operations in 1889 the Cucaracha began to slide, and it first gave the Americans trouble in 1905, the second year of their work on the canal. Between then and July 1, 1912, nearly 3,000,000 cubic yards of material was removed from the canal because of it. The slide had broken nearly 1,900 feet from the axis of the canal, and covered an area of 47 acres. Last fall the engineers were congratulating themselves on having the cockroach stopped, but in January it started moving again, and nearly covered the bottom of the cut.

"What is going to be the cost of that slide to the United States?" I asked Colonel Goethals as we stood at the edge of the Culebra cut and looked across the chasm to where the steam shovels and hundreds of men were laboring to remove the vast mass of earth and rock.

"Well," the chief engineer replied, "our estimate is that by the time it is all cleared up it will have required the expenditure of about $5,000,000 more than the cut would have cost if the slide had not occurred. It is still moving, and has broken so far back that

Giant Steam Shovel.

now we are shoveling the crest away from the canal in order to relieve the pressure from above. Before the movement in January began the excavation in the cut at that point had been carried to within 15 feet of the canal bottom. Digging out that 15 feet of material removed the support of the Cucaracha, and down it came. If we could have turned in the water and taken out the 15 feet with dredges, I think the pressure of the water would have done much to prevent the slide."

"What of the future?" I asked. "Is there any danger of slides occurring after the canal is opened?"

"Absolutely none, I believe," he answered. "When the excavating and dynamiting have ceased and the water is in, it will be quite safe. We have the slides and breaks mapped out as far back as there is any indication of their extending, and are working back to those lines. It is merely a matter of persistency and patience."

"When will the water be let into the cut?"

In October," replied Colonel Goethals. "But there will be no celebration over the event. That one in January, 1915, is giving us enough worry, and we don't forget the premature and ridiculous celebration by Ferdinand de Lesseps many years ago. We will just turn the water in—that's all. Then we can complete the excavation there with suction dredges, which will do the work cheaply and rapidly."

"And when will boats be passing through the canal?"

"That I cannot say, but the sooner the better, for the operating crews must be properly trained before that January celebration. I wouldn't have an accident occur for anything. If we cannot have commercial vessels going through before then, I shall ask the government to send naval vessels through, so the operating forces can get the experience. Anyhow, I want to see the canal opened to commerce as soon as possible, for it is revenue I am after."

Another day I stood with Col. D. D. Gaillard, the engineer of the central division, outside his office in Empire, and watched his army laboring in the cut, the completion of which has been his biggest task and greatest glory. Right at our feet a big area had sunk down 70 feet in a night, and if there had not been warnings of the break a wing of the colonel's office building would have gone down with it. "We had just time to remove that wing," said he, "and my office force is rather nervous now, for there are three big cracks under the main building. I expect it, too, will have to be torn down very soon.

"These slides used to make us rather despondent, for it seemed as if they never would stop, but the progress we are making this year has cheered up the operating forces again, and we can see the end of the task. The slide and the break are quite different. In the former the earth slides at an angle down a sloping face of rock, and in the latter the mass sinks straight down and at the bottom bulges out into the channel. Along both sides of the cut you can see numerous small slides and breaks. Those are in pockets in the rock wall, and, annoying as they are, they only need cleaning out. The Cucaracha started as a slide and now it is both a slide and a break.

"Incidentally, that cut should be a great place for geologists. I have found in it every kind of rock except granite, and many interesting fossils and petrification have been discovered there. In one stratum through which we cut there were found a great number of teeth of prehistoric varieties of sharks."

"What is your opinion concerning the date when the canal will be ready for commerce?" I asked.

"If I had my say," said the colonel emphatically, "not a commercial vessel would be allowed in the canal until it is absolutely complete down to the smallest detail. In some of the many safety devices were not in operation and an accident should result, the canal would get a black eye from which it might not recover for a long time. Officially, the time for the completion of the canal is still January 1, 1915. It may be done before that date, but in March of this year there was still about $50,000,000 worth of work ahead of us.

"We who have been digging the canal and are still here in positions of responsibility—I mean the members of the Isthmian canal commission—are rather fearful concerning that part of the Adamson bill which permits the president to dissolve the commission whenever in his judgment the canal is near enough to completion. We feel that it would be extremely unjust not to allow us to remain 'on the job' until after the grand formal opening in January, 1915. It would be much like permitting a boy to complete his university course, and then taking him home before he receives his diploma."

And then Colonel Gaillard said some things about Mr. Taft's efforts to put into effect that clause last January, which must have made the ex-president's ears tingle a bit.

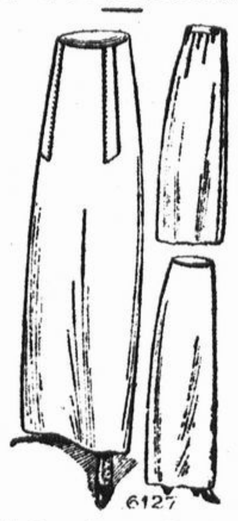
"The Culebra cut is like a three-ring circus. I don't know which way to look," said one visitor to the zone.

It is indeed a scene of wonderful activity. Giant steam shovels are scattered through it, scooping up enormous masses of rock and earth; on half a dozen tracks on as many different levels snorting and puffing locomotives are swiftly drawing loaded or empty dirt trains; along the ledges are batteries of steam and compressed air drills, making holes for dynamite; suddenly there is a toot-tooting of a steam whistle, a hundred men scurry to shelter, and a dynamite blast fills the air with sound and dirt and rocks.

Watching the steam shovels is a favorite occupation of visitors who venture down into the Culebra cut. They seem almost human, and do a vast amount of work. Their dippers hold five cubic yards of material, weighing on an average a little more than three tons. This spoil is emptied into cars of several kinds. Flat cars with one high side are unloaded by plows that are drawn the length of the train by cables upon a winding drum. The others are dump cars, the largest of which are operated by compressed air from the locomotive. The trains haul the spoil from the cut to dumping grounds, which on an average are about 12 miles distant. Some 18,000,000 cubic yards of this material was used as filling for the long breakwater at the Pacific entrance.

Practical Fashions

LADY'S TWO-PIECE SKIRT.



6127

This design gives a pleasing skirt model and one equally appropriate for separate wear or for costume development. The garment closes at the front underneath the laps or at the side seams. It may be carried out in serge, cheviot, mohair or cashmere.

The pattern (6127) is cut in sizes 22 to 30 inches waist measure. Medium size requires 2⅝ yards of 36 inch material or 44 inch goods.

To procure this pattern send 10 cents to "Pattern Department," of this paper. Write name and address plainly, and be sure to give size and number of pattern.

NO. 6127. SIZE.....
NAME.....
TOWN.....
STREET AND NO.....
STATE.....

Practical Fashions

GIRL'S DRESS.

6250

One of the daintiest and simplest of models. It is of sacque cut, closing diagonally in front and with a slot seam in the center of the back. A fancy collar trims the neck and the long or short sleeves may have a band finish or an ornamental cuff. A wide belt completes the dress.

The dress pattern (6250) is cut in sizes 6, 8, 10 and 12 years. Medium size requires 2¾ yards of 36 inch material.

To procure this pattern send 10 cents to "Pattern Department," of this paper. Write name and address plainly, and be sure to give size and number of pattern.

NO. 6250. SIZE.....
NAME.....
TOWN.....
STREET AND NO.....
STATE.....

This Manikin Was Hot Stuff.

Mrs. Flower was spending a few weeks with a country cousin, and they were exchanging news of their old school friends.

"How about Florence Mosher?" asked Mrs. Flower. "Has she kept on growing fatter and fatter?"

"Well," replied the country cousin, "all I'll say is this: Minnie Wells told me last year that when Florence went home from town, where she was nursing her sister, to have a silk waist made, Minnie realized that she hadn't any measures; and then she remembered that the last time Florence was there she stood up by the big, airtight stove, and Minnie remarked (to herself, of course) the resemblance between 'em. And she took the measure o' that airtight, and cut in a mite for the waist line, 'bout as much as a knife marks warm molasses candy, and made the waist accordingly, sent it on, and Florence wrote back it was an elegant fit."

Stable Cut Out of Rock.

Sufficiently grand, gloomy and substantial for the housing of some wild and cruel steed of a saturnine mythology is a strange stable at Kinver, near Stourbridge, England. The stable has been cut from the Holy Austin rocks, but instead of serving as the home of some particularly powerful and malicious beast it is the abode of a perfectly agreeable pony. In addition to being one of the strangest stables in the world it is, according to the Bystander, the smallest one in England. Although the pony is not large for his kind, he finds his stony cell a pretty tight fit.

HOW TO USE THE SPLIT LOG DRAG

Best Results Obtained Just After a Rain.

FOUR MILES A DAY'S WORK.

Ordinary Road Drag Is Made With Two Halves of a Log—This Process Forces Water to Drain Off at Either Side, Leaving Bed In Condition.

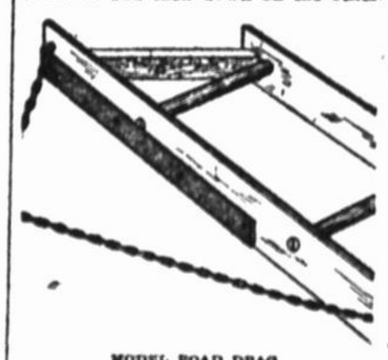
The best results from road dragging come when the roads are dragged directly after a rain. The surface of the road is leveled, the holes and ruts are filled up, and the earth is puddled. A crust forms when the top dries out, making the road much more lasting than it would be if dragged at any other time.

To keep a road smooth and crowned the best method is to drag with an ordinary wood road drag, made easily with two halves of a log which has been split. This log should be about six or eight inches in thickness and six to eight feet long. The halves are set three feet apart with the smooth surfaces forward and upright. They are fastened together with braces set in holes bored through the log.

If they are not heavy enough a board can be placed on top, and the driver stands upon it. This will weight it down sufficiently. In some cases it has been found desirable to attach a piece of metal along the lower edge of the forward piece of the drag. This cuts the surface of the ground better and insures also more efficient work.

The road drag should move forward so that it slants across the road in such a way that a small amount of earth will slide past the smooth face of the log toward the middle of the road, thus forming the crown. In this way the edge of the drag smooths out the ruts and fills up the holes.

The best way to drag is to begin at the side ditch and go up one side of the road and then down on the other.



MODEL ROAD DRAG.

The next trip the drag should be started a little nearer the middle, and the last trip over the road the drag should work close to the middle itself. Small ridges of earth will be thrown in the horse track and smeared by the round side of the log smoothly over the road. The smearing of the earth by the drag is called puddling, and it tends to make the surface smooth and hard and turns off the water, especially after the sun comes out and dries it thoroughly. The road is always dragged after it has rained and not when it is dry. With a good strong pair of horses and a well built drag one man can drag about three or four miles of a road a day. This is the best possible way to maintain good earth roads. In every county some farmer along each four miles of road should own a drag and drag the road when it rains, and he would find the road in good condition when he goes to market.

The necessity for dragging the road comes about from the fact that water stays on the road surface because it cannot drain away into the side ditches. If the road has been properly dragged the water will run off the surface. Then if the ditches are properly taken care of the water will drain away and leave the roadway in splendid condition. The crown of the road should be at least ten inches higher than the outside. Rain on a properly crowned road will run quickly to the sides and not soak into the surface.

NEW ROAD TO YELLOWSTONE.

"The Black and Yellow Trail" to Be Built From Chicago.

South Dakota, Wyoming, Minnesota and Wisconsin are interested in a highway from Chicago to the Yellowstone National park, to be known as the Chicago, Black Hills and Yellowstone Park highway, or "the Black and Yellow Trail."

The tentative route is from Chicago north along the lake shore to Milwaukee, west through Madison to La Crosse, north to Winona, west through Minnesota and South Dakota, following closely the line of the Chicago and Northwestern railway, through the Black Hills and on to Yellowstone park.

Convicts Work on Roads.

In Colorado, Illinois, Michigan, Minnesota, Washington, Utah, California, Wyoming and several other of the northern states experiments have been made with convict labor on the roads, and almost without exception satisfactory results have followed. The men have appreciated the privilege of living in the open air, their health and morals have improved, their work has been good, and very little trouble has been given.

EXPERT EXPLAINS WEAR ON ROADS OF VARIOUS TYPES.

Information as to Materials and Maintenance Under Traffic.

In a paper presented by W. D. Sohier at the third American good roads congress at Cincinnati, in which he discussed the uses of a traffic census and gives' considerable information and data from the experimental work of the Massachusetts highway commission with certain materials and kinds of construction and maintenance under different kinds of traffic, the following conclusions are drawn as to the effect of loaded farm wagon, motortruck and automobile daily traffic on roads:

A good gravel road will wear reasonably well and be economical with from 50 to 75 light teams, 25 to 30 heavy one horse teams, 10 to 12 heavy two horse teams and 100 to 150 automobiles, but should be oiled with over 150 automobiles. Hot oiled gravel or gravel oiled yearly with heavy cold oil in one-half gallon coatings will wear with a daily traffic of from 75 to 100 light teams, 30 to 50 heavy one horse teams, 20 heavy two horse teams and 500 to 700 automobiles.

Water bound macadam will stand with a daily traffic of from 100 to 150 light two horse teams, 175 to 200 heavy one horse teams, 60 to 80 heavy two horse teams and not over 75 automobiles at high speed. A dust layer will improve conditions on such macadam with a daily traffic of from 50 to 100 automobiles and should prepare it to stand as high as from 300 to 500 automobiles.

Water bound macadam with a hot oil blanket coat will be economical with a daily traffic of from 250 to 300 light teams, 75 to 100 one horse teams, 25 to 30 heavy two horse teams and as high as 1,400 automobiles and should stand at least 50 motortrucks, but will crumble with over 100 light teams or 50 heavy one or two horse teams hauling loaded farm wagons on very narrow tires. Water bound macadam with a good surface coating of tar will stand a daily traffic of 30 to 50 light teams, 25 to 30 heavy one horse teams, 10 to 15 heavy two horse teams and 1,800 automobiles.

MICHIGAN SHOWS EXAMPLE.

Rich and Poor Work on Road Improvement Task.

Five thousand Michigan men from nearly every walk of life have recently set an example which may well be followed by the whole United States by building 250 miles of excellent automobile road in a single day. And the women of the northeastern part of the state, through which the new highway runs, are entitled to much credit, too, for, while their husbands, fathers, brothers and sweethearts labored at digging and plowing and grading, these women cooked meals that put new heart in the muscle weary workers and made this most notable accomplishment possible.

As a result of the labors of these Michigan people there now is an unbroken line of graveled highway for over 250 miles from Bay City to Mackinaw City, where two days before there was mile after mile of corduroy road, sand holes and swamp lands.

Mayors of cities and towns, state officials, millionaire lumbermen and mill men slaved in the hot sun, hewing with picks and axes at corduroy road slabs, throwing stones, shoveling sand and gravel, leading plow horses or performing other of the innumerable tasks.

WANTS CONVICTS ON ROADS.

New Prison Head Will Seek Thus to Employ Nearly a Thousand.

Judge John B. Riley, the new superintendent of prisons in New York state, announced that he would apply to the prison commission for power to employ prisoners upon state highway construction. Mr. Riley thinks that nearly a thousand men could be used each year to advantage in road construction.

The new superintendent plans to send out only those prisoners whose terms are about to expire. This policy, he thinks, will not only lessen the number of escapes, but will build up the men long confined in cells, so that when they are finally released they will be in physical condition and able immediately to take up manual labor.

The plan of employing convicts was tried by Joseph F. Scott when superintendent, and in his annual report it was strongly urged as a means of bettering the condition of the men.

Improving Famous Road.

For two years parts of the old National road, the natural thoroughfare from Washington and Baltimore to Wheeling and the west, have been in such bad condition through western Maryland that its usefulness as a through automobile route has been greatly impaired. The originally good surface has been worn off for miles, exposing large stones, of which its foundation was principally made. In some cases bowlders were washed down by the mountain streams, and several stretches were injured by the hauling of pine timber from the district north of Hancock and Flintstone. As a result a great deal of the through travel east and west has been going by Bedford, Ligonier, Greensburg and Pittsburgh, a longer and more hilly route than that over the National road direct to Wheeling and beyond. Lately, however, the state highway commission, encouraged and aided by the Automobile Club of Maryland, has taken an active interest in restoring the road to its old time importance.

AUDITORIUM.

"The Whip," the big Drury Lane melodrama coming to the Auditorium for a limited engagement starting Saturday, August 30, is an exciting play of love and adventure that grips the auditor from start to finish. The stage at the Auditorium is at this early date being got in readiness to meet the requirements of this thriller which has been imported intact from London. That the staging of this production is of an unusual and exacting character is apparent from the fact that thirteen complete stage settings are required for as many scenes, a dozen huge treadmills and five electric driven panorama are employed for the race scene, while real tracks, locomotives and rolling stock are essential for the sensational collision. The latter will undoubtedly be the most remarkable stage picture ever presented in Chicago, and is described as the climax of sensational realism. Two trains are shown running at full speed in plain sight of the audience. The rear car is detached from the first train and comes to a standstill at the entrance to a tunnel directly in the path of the following express. The latter crashes into the car and is shattered into a mighty wreck, lit up by lurid flames and shrouded in a mist of steam from the burst boiler of the overturned locomotive. "The Whip" is produced by Messrs. Brady, Comstock and Gest.

PRINCESS.

It seems to be a delusion among American playwrights that a farce cannot be a success unless it is derived from a German or French source. Perhaps nine out of ten plays of that nature have been bodily lifted or adapted from the foreign stage. It remained for Philip Bartholomae to prove the fallacy of that theory. In his first effort, "Over Night," he took a typical American theme, handled it in a typically American way and met with instant success. Following the same plan he wrote "Little Miss Brown," which opens the dramatic season at the Princess Theater, Chicago, August 24th. All the scenes in this play are laid in a hotel, giving opportunity for a series of character drawings unusual in light comedy. The story concerns little Miss Brown, who forgot the day of the week and reached the city a stranger and a day sooner than she was expected. Somebody stole her pocketbook at the station and, since it was night and she had no money and no baggage, the hotels would not let her in. On a tip from the telephone operator she lets herself be mistaken for a married woman whose husband has had apartments reserved at the hotel. Two hours and a half of solid laughter are necessary to unravel the tangle and make everyone happy. A pretty romance underlies all the story.

Various Thermometers in Use.

English-speaking peoples use a thermometer invented by Fahrenheit, a German; many Germans and Scandinavians use one invented by Reaumur, a Frenchman; while the French and most of the other Europeans of the continent use the centigrade thermometer invented by a Swede.

Irish Bull in Germany.

Much amusement has been caused by an official notice, published in the Hanover Anzeiger, saying an order has been made that "the last carriage shall not be attached to railway trains," as it is "always subject to unpleasant shocks and oscillation."

Tasmania's Great Reservoir.

The island of Tasmania is located south of Australia. Its area is a little over 28,000 miles and it has a population of 191,000. In the middle of the island at an altitude of 3,400 feet is the Great Lake, a storage reservoir provided by nature.

Reminders of Limerick Siege.

Near a battle scene during the siege of Limerick, in 1691, workmen while excavating discovered a quantity of human remains recently. A bullet hole was observed in one skull, and on examination a bullet was found embedded in the bone.

May Add to Arable Land.

The toxic tendencies of alkaline waters have been corrected with nitric acid experimentally by an Australian chemist, which leads to the belief that vast areas of unproductive land may be safely irrigated in that manner.

Built That Way.

Rankin—"Every time I get up to try to make a speech I can feel my knees knocking together." Fyle—"Naturally. If your legs bent outward, as mine do, instead of bending inward, you wouldn't have any of that trouble."

Sucrose in Many Fleshy Roots.

Sucrose is found in the fleshy roots, such as the beet, carrot, turnip and sweet potato, but thus far it is only from the beet that it has been obtained in quantities commercially profitable. The beet root today yields by far the greater part of the world's sugar supply.

Unchanged.

"That's just like Jim," said the widow, wearily, after a flapping curtain had knocked over the urn in which all that was mortal of her cremated husband had been placed and spread its contents on the floor. "Always dropping his ashes everywhere!"—Harper's Weekly.