Government Bureau Holds Out Hope of Success.

RECORD OF TESTS GIVEN

Electro-Magnetic Waves Made to Travel Through Solid Strata Far Below Surface.

WASHINGTON, D. C., Dec. 2 .-Radio communication between rescuers on the surface and miners entombed in mines following fires and explosions is a hope held out by the United States bureau of mines to

cooperations of a great electrical manufacturing concern, in an experimental mine at Bruceton, Pan, and, where he had conferred with Tammany Leader Murphy. Had, where he had conferred with Hadder and Albert Murphy. Had, where he had conferred with Hadder Plant Tammany Leader Murphy. Had, where he had conferred with Hadder Plant Tammany Leader Murphy. Had, where he had conferred with Hadder Plant Tammany Leader Murphy. Had, where he had conferred with Hadder Plant Tammany Leader Murphy. Had, where he had conferred with Hadder Plant Tammany Leader Murphy. Had, where he had conferred with Hadder Plant Tammany Leader Murphy. Had the h

the disaster, at the very time when it is most urgently needed. On this account the mining industry is interested in any kind of telephone system that can be counted upon in of Poisoned Grain. an emergency. Many requests have been received by the bureau of mines to devise means of utilizing ass methods for this purpose.

Waves Penetrate Earth. mine, and second, both sending and receiving messages underground through the strata. It was found that with a receiving instrument set at a point 100 feet underground signals sent from station KIKA of the Westinghouse Electric & Manufacturing company at East Pittsburg, 18 miles away, could be heard distinctly. About 50 feet from the receiving station used in the mine in this text was a six-inch bore hold extending from the surface, lined with iron pipe and conface, lined with iron pipe and con-taining electric light wires which extended therefrom through the mine. The presence of these wires, according to the experimenters, evidently assisted greatly in the recep-tion of the signals, for when the receiving set was carried to another point in the mine removed from the wires and tracks the signals were barely audible through 50 feet of cover. The fact that signals were detected at ell, however, even though faintly, was declared suffi-

though faintly, was declared suffi-cient evidence of transmission through ground to encourage fur-ther experimenting.

In sending waves underground a transmitter was used in such a manner as to send out continuous waves of 200 to 300 meter lengths. On account of the limited time at disposal no attempt was made to modify the apparatus in such man-ner as to produce waves of greater er as to produce waves of greater

Vertical Waves Give Best Results.

In all experiments the vertical antennae were found to give better results. The horizontal antennae gave practically no reception. A loop of a single turn was used with fair results. All these experiments were tried with a wave length of 200 to 500 meters, except the reception from KDKA, which was 356 meters. The strata at the experimental mine ile almost horizontal. The direction of strata it was said, may have some influence on the transmission of radio waves, but the present experiments gave no conclusive evidence on this point. No doubt the degree of wetness of the strata influences the transmission of radio waves, it was reported. The Vertical Waves Give Best Results. strata influences the transmission of radio waves, it was reported. The mine used is a comparatively dry mine, but the everburden is damp, and a small stream of water is continuously flowing from the mine. This overburden consists chiefly of soil and soft shale. The underground workings of the mine follow a horizontal five-foot vein of bituminous coal, and the transmission and reception inside the mine fellowed the course of this vein.

lowed the course of this vein.

Details of the experiments are explained in Serial 2407, which may be obtained from the bureau of mines at Washington.

JEWELS, LIQUOR CARRIED Two Men Bound Over to Grand

Jury on Dry Law Violations. Jewels and liquor were the stock

Jewells and liquor were the stock in trade in a little store at 60 North Sixth street conducted by Joe Masurosky, according to evidence adduced at a hearing before United States Commissioner Frazer yesterday, and which resulted in Masurosky and J. J. Anderson being bound over to the grand jury on charges of violating the prohibition law.

Federal prohibition agents on November 23 succeeded in allaying the suspiction of the proprietor and

gained admission to a back room, where Anderson was found with a bottle of moonshine, sold at 50 cents the drink. The sleuths entered the place on three separate occasions on that day and on the occasion succeeded in purchasing drinks. When they returned later with a search warrant Anderson poured one bottle of liquor down a sink and smashed the other on the floor. One of the raiders mopped up the liquid with his handkerchief and succeeded in salvaging enough to be used as evidence. Tests showed that the liquor was only 45 process.

dence. Tests snowed that the was only 45 proof.
William Jett, who was arrested in the place at the time of the raid, was released when evidence showed he had no connection with the resort.

LOOKIT TH' NEW MOSES

MAYOR HYLAN PROPHET OF THIRD PARTY.

Tammany Man, Back From West, Says People Are Sick and Tired of Standpatism.

New York World. New York World.

New York World.

Mayor Hylan, with Corporation to be held here lessen the horrors and losses of mine disasters. Preliminary tests conducted by the bureau, with the cooperation- of a great electrical manufacturing concern, in an experimental mine at Bruceton, Pa, already have resulted in a degree of success.

While these experiments have so the formation of the American farm bureau federation to be held here bureau, with the cooperation- of a great electrical manufacturing concern, in an experimental mine at Bruceton, Pa, already have resulted in a degree of success.

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Mrs. Hylan, Mr. and Mrs. John F.

Sinnott, the mayor's daughter and formation of the American farm bureau federation to be held here Among prominet speakers to appear on the programme are Bernard M. Baruch, former Governor Frank evening from French Lick Springs, lind, where he had conferred with Tammany Leader Murphy. He looked to be in splendid health and conferred with the south of the south of the south of the

of Poisoned Grain.

OLYMPIA, Wash, Dec. 2—(Special.)—More than 40,000 pounds of poisoned grain has been spread in the Yakima, Wenatchee and Okano-The preliminary experiments consisted, first, in receiving signals from without the mine by means of a receiver located inside the mine, and second, both sending and receiving means. Wenatchee and Okano-gan districts during the last three weeks in the campaign against the orchard mouse, Leo K. Couch, in charge of rodent control in the Washington district, announced yes-receiving measures.

A class of 56 candidates was initiated into Multnomah camp, No. 77, of the Woodmen of the World Friday night at the regular meeting in their hall at East Sixth and Alder streets. The degree was conferred by the regular officers of the camp and the degree team, with Earl Smith, captain, and E. A. Clark, consul commander, in charge. Durconsol commander, in charge. Dur-ing the social hour following the initiation ceremony J. E. Dunne, who has just returned from an ex-tended trip through the east, gave an interesting account of his an inte

Bridge Tolls \$7251.56.

PASCO. Wash, Dec. 2.—(Special.)
—Tolls emounting to \$3467.91 were
collected for the month of Novem-ber at the Pasco-Kennewick bridge.
This sum together with \$3783.85 col-lected for 24 days' use during the onth of October brings the total eccepts since the bridge has been operation up to \$7251.56. Low day for November was November 20 with \$77.95 and high day November 29 with \$230.45.

MANAGER **PORTLAND**

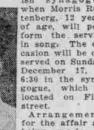
By a very strong Old Line Life Company writing non-participating business on Standard and Sub-Standard Basis. Full line of upto-date policies with Double Indemnity and Total Disability features. Full co-operation by home office to men in field. Company will pay salary and commission. Applicant must be a personal producer and one who can attract and hold men.

Give past history and production, personal and agency,

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TOPIOE

United States to obtain national legislation on rural credits, and the same desire on the part of leaders in Congress in enacting into a law a rural credits bill that will meet the need of agriculture, according to C. O. Moser of the Texas farm bureau, and member of the council. Virtually one-sixth of all the agricultural commodities of the United States now are sold co-operatively.



The desirability of substituting the wireless system of communication for the present telephone system in use in mines is evident in use in mines is evident in the will be some time and elegation by breaking wire connections, can put the entire system out of order.

The mine telephone has been perfected to such an extent that it is giving satisfaction in most mines where the wiring is well insulated, the bureau of mines an entent that it is giving satisfaction in most mines where the wiring is well insulated, the bureau of mines announcement continues. Very often the telephone cannot be depended upon on account of falls of rock, grounding due to where the wiring is of rock, grounding due to where the wiring is of rock, grounding due to where the wiring is of rock, grounding due to where the wire the whole of a disaster it frequently happens that the mine telephone system is put out of or a disaster it frequently happens that the mine telephone system is put out of or a disaster it frequently happens that the mine telephone system is put out of or a disaster it frequently happens that the mine telephone system is put out of or the decile to commit themselves one mission by the agency that causs the disaster, at the very time when it is most urgently needed. On this account the mining industry is need to find the delegation will conduct sessions to be devoted to developing and encouration in the fed and its will be adied to developing and encouration in the fed and its will be odied to developing and encouration in the fed and its will be odied to developing and encouration in the fed and its will be odied to developing and encouration in the fed and its will be odied to developing and encouration in the fed and its will be odied to developing and encouration in the fed and in

ORIGIN OF POLYNESIANS IS TRACED BY GENEOLOGIST.

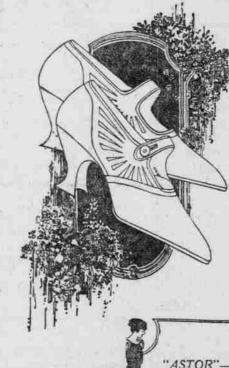
bureau, and member of the council. Virtually one-sixth of all the agricultural commodities of the United States now are sold co-operatively, he said, and the success or failured from the United States now are sold co-operatively. He said, and the success or failured from the United States now are sold co-operatively. He said, and the success or failured from the United States now are sold co-operatively. He said, and the success or failured from the United States now are sold co-operatively. He said, and the success or failured from the United States now are sold co-operative are decreased from the United States now are sold co-operatively. He said, and the success or failured from the Interest not the such organizations of the national concern. There are not one approximately 159 such organizations and the national concern. There are not provided the national concern. There are not provided the success of a billion deliars.

BIG MEN TO GIVE TALKS

The conference are nearly beauting 152 for many people. This is the con

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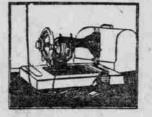
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SANDY BLVD. BUSINESS LOT,

50, 100x100 FEET, sewer, side-walks in and paid, lots all cleared, nice houses on each side, only one bile, to ear, near 39th and Glad-stone ave. Cush only. Call at main

\$1600, \$16 DOWN, \$16 MONTH, 134x 1450, \$16 DOWN, \$16 MONTH, 134x No0 It., just outside city limits, oak and sah shade trees, tract nearly all cleared, rich allt gatden land, no rocks or gravel, the north line of this tract is a running stream; low county tax, no building restrictions, ideal place to start a little home, graded street, sidewalks to Sandy blvd, and car line, high and grade school, within easily walking distance; \$16 total monthly payment. Call at branch office No. 2.

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MT. TABOR (west slope), 50x100 ft. 58th st., near E. Salmon, all im-

\$500 DOWN-ROSE CITY PARK, W bile, to Sandy bivd. I rms, hard-wood floors, large fireplace, built-in buffer. Dutch kitchen, breakfast nook, no mortgage to assume, straight payments, only \$45 mo; possession at once. Call at branch office No. I.

ROSE CITY PARK HOUSES, Some nighty good bargains in homes ranging in prices from \$5000 to \$8500, on terms of about one-fourth to one-haif cash. Call at branch office No. 1.

\$4725, ROSE CITY CAR, 44th street, 1 block south of Sandy blvd. Pive rooms and therping porch, reception hall, flying and dining room, hardwood flooth firepixes, built-in blockcases, hardword. This place is effered at a very the pixe it must be sold by January I. Cali at Branch office, No. 1.

5 ACRES \$1250, BOCKWOOD ROAD, south of Buse Line, near the school, about one-third cleared, balance second growth fir, a dandy level piece of property, easy terms, only \$250 cash, balance \$20 per month, interest at 6 per cent. Call at main office.

3000, \$150 DOWN, 5-room bunga-low, Mt. Tabor, a nice restricted residence district. This place needs retinting, painting and gen-eral fixing up, but it is a snap. No mortgage assume. Only \$35 monthly, interest included. Call at main office.

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