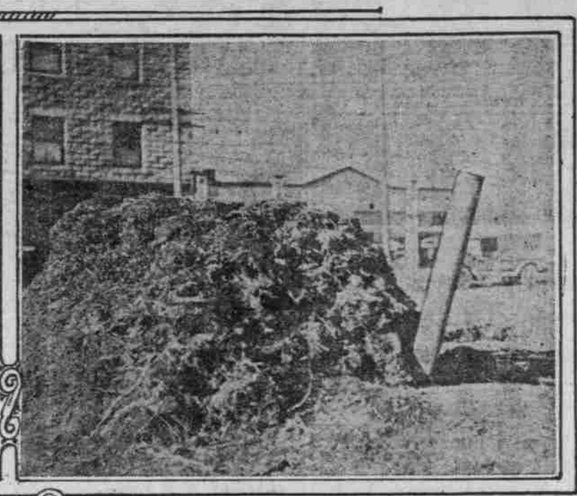
NEW STUMP-BURNER PROMISES TO SIMPLIFY AND INCREASE LAND-CLEARING OPERATIONS AND ADD TO TILLABLE AREA

Demonstrations Are Given on Vacant Lots Adjoining Bank of Kenton Where Number of Fir Stumps Are Removed by Process—Samuel F. Zyssett, Inventor, Experiments for Nine Years, Using Sheet Iron Which Melted Quickly Under Intense Heat Developed—Hole Is Burned in 27 Hours.

S. F. Zysset Inventor, Installing Furnace



This Stump Is Burned Through And Will Now Consume Itself

Furnace-Applied In First Burning Operation

Hood-Applied After Hole Is Burned Through Stump

First Stage Of Burning Process

INCREASED land clearing operations and adding large areas of stump land to the tillable acreage are the probable results of five years of testing demonstrations carried on by the Oregon Agricultural college under supervision and direction of Professor H. D. Scudder.

In the last week demonstrations of the new stump burner have been conducted on vacant lots adjoining the Bank of Kenton and a number of large fir stumps have been removed by the process. Hundreds saw the demonstration, which began Monday January 9, under direction of Samuel F. Zysset, inventor and patentee of the device.

The apparatus used consists of a furnace resembling a stove with one end entirely open. The open end is placed near a stump and fire kindled from bark gets draft through a small opening in the furnace front. When the fire is well started a two-inch iron pipe is placed in position to feed air to the flames. Sods are then placed over and around the furnace, the result being a natural blast furnace.

Hole Burned in 27 Hours.

In a period of 27 hours the demonstration showed a hole is burned through the stump and another hood is placed over the opening where the flame finds an outlet and sods are banked over this. This makes the stump practically an air-tight stove. About 40 hours more are required to burn an average large stump. Gradually the stump drops into the crater, more sod is thrown on and the roots are consumed.

Stumps in various stages of the process, from the time fire was first applied to the point where only the crater remained with fire still penetrating the roots, were inspected and studied by members of various city and state organizations and by forest service officials.

Expressions by men experienced in land clearing methods were favorable. One man remarked that the only reason the method had not been used before is that it is so simple no one had thought to apply it.

Mr. Zysset told a group of business men and forest service officials how he began 15 years ago to develop the idea. He had broken a double-tree. The new one he made needed a hole for the clevis. He had only a small bit to bore the required hole. It occurred to him that he might enlarge this by applying a hot iron rod, and his idea saved him a trip to town. That, he says, was the basic principle, the nucleus from which his invention grew.

He found that he could burn a hole through oak timbers, and applied the idea to stump burning.

Inventor Experiments 9 Years.

How for nine years he experimented, using sheet iron, which melted quickly under the intense heat developed; how he came to use the draft pipe idea; had castings made, changed patterns for the furnace and hood; his discovery how to regulate the blaze inside the furnace, the air supply, the diameter of the feed pipe, the distance the flame would travel from the end of the pipe, what system of banking sods around the stumps gave best results—these, and a hundred other simple details easy to apply, were worked out year after year, until in 1915 he secured his patent rights.

Then Mr. Zysset took his idea to the state agricultural college for investigation and test.

First public demonstration of the system was given in Clackamas county, Thursday, December 22, that being the first official showing made by the college investigators. Pulling, blasting and burning of stumps were shown.

800 Burned With One Battery.

Broadly, the use of pullers of moderate size is indicated on stumps up to 18 inches diameter; powder on stumps from 18 to 30 inches; burning on those of greater dimensions. All are effective, but the cost of equipment and powder have prevented extensive operations, except on very rich land or on that so situated as to be especially valuable.

It is stated, by Mr. Zysset that based on tabulated results of college investigations, a battery of four burners and eight hoods in the charge of one man will remove two stumps a day, average.

"The bigger they are the better we like them," said Mr. Zysset to The Oregonian representative.

"We have burned out 800 stumps with one battery used by the college people, and the castings are still in good condition for further use.

"There is no expense other than the original cost of the furnace and hood, which we call a unit, and the labor required.

"We take our fuel for starting the fires from the stump itself, with a little dry light wood. No other fuel is needed. After the blaze is well started the stump is its own supply.

"As burning progresses the stump settles into its crater until consumed, sods banked around the stump fall to the center and leveling seldom is required to any extent.

Laterals Entirely Burned Out.

"Where lateral roots are exposed above ground we find that by covering with soil they are burned out entirely. Heat generated under the burning stump dries out the laterals, unless standing in water, and nearly always the root system is destroyed 20 to 35 feet from the stump. This latter is merely the old charpitting principle, and takes sometimes four to six weeks before the roots are all consumed."

Demonstrations will be given in Washington county beginning January 20 and in Columbia county in February. Another is being carried on in Linn county and one is projected in Lane county. In each case county agents will work in conjunction with the agricultural college.

Recent discussion has dealt with the problem of economic methods of bringing cut-over lands into productive utilization. This is considered by many as one of the important things to be accomplished in Oregon. Urban population has grown more rapidly than rural. More producers on lands yet to be cleared will aid development in all lines, commercial and industrial.

Chess and Checkers

E. H. BRYANT, Editor.
Phone Tabor 6213.

Contributions solicited. Headquarters of Portland Chess and Checker club, Worcester building, Third and Oak streets, room 216. Mail contributions to 143 East Thirty-fifth street.

PROBLEM NO. 1154.

By Dr. W. R. I. Dalton, Seattle, Wash.

The season's gift of originality and practicability. Every detail is just what it should be to satisfy the most exacting demands, to arouse the enthusiasm of The Oregonian solvers. The more time you give to them the less chance there will be of dissatisfaction later on. We predict that there will be similarity of ideas in regard to them among chess circles. The magic spell of these prize problems will add much to the lure of the royal game which by leaps and bounds is becoming more popular every day as an intellectual pastime; they are bringing unadulterated joy to hundreds, and making their lives more cheerful.

BLACK, THIRTEEN PIECES.

WHITE NINE PIECES.

White mates in three moves.

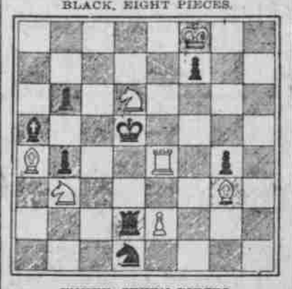
White king on KH7, queen on KK14, rook on QR5, bishops on KK1 and K2, knight on QR8, pawns on K5, KR2, QR4. Black king on QB5, queen on Q6, rooks and QR6 and QR2, bishops on QKt and QKt2, knights on KK2 and QB, pawns on KB2, K5, QK15, QK16, QK17.

PROBLEM NO. 1155.

By Godfrey Heathcote.

Selected from Lasker's Chess magazine. If at first you do not succeed, don't fan the air and become excited, and swear that it cannot be done. A protracted effort will only add to the pleasure of the solver. The authors name disposes of all doubt in regard to its quality.

BLACK, EIGHT PIECES.



WHITE, SEVEN PIECES.

White mates in three moves.

White king on KB8, rook on K4, bishops on KK13 and QR4, knights on Q6 and QKt3, pawn on K2. Black king on Q4, rook on Q7, bishop on QR4, knight on Q8, pawns on KK15, KR2, QKt3, QK15.

PROBLEM NO. 1156.

By Heathcote.

In 1913 this took second prize in the Dutch Chess association.

BLACK, SIX PIECES.

WHITE, EIGHT PIECES.

White mates in three moves.

White king on KR2, queen on QR8, rook on KB6, bishop on KKt7, knights on KKt6 and K5 pawns on KB2, QKt4. Black king on Q8, rook on Q3, bishop on QKt, knights on K5 and KR2, pawn on QB6.

Solutions to these prize problems must be in by February 18, 1922. Remember that in problem No. 1150 the white queen is placed on KR7. Four movers will not be introduced in this contest. It is a source of gratification that so many new solvers are trying for the prize. Every one who solve the problems should send us the result of their efforts. The effort is trivial and adds considerable to the interest of the contest.

Mrs. Van Buskirk, 1235 University street, Eugene, Or. The descriptions to No. 1148 and No. 1149 were simply reversed; the one for 1148 being below 1149, etc. Below the statement of the white pieces in both diagrams it states that white is to mate in two moves. Sorry you overlooked this. I am pleased that you are pleased, and interested in the solution of The Oregonian problems. The diagrams are correct and white is to mate in two moves in each one. As to your suggestion in regard to a key; I regret that I am unable to accommodate you as these are prize problems.

Dr. W. R. I. Dalton, 4510 Second avenue northeast, Seattle, Wash. Have written W. A. Smith, chess editor Brisbane Courier, Queensland, Australia, for issues of paper in which your problems were published.

Ralph Bennett, 20 & A., Corvallis, Or. Replied to yours of the 12th. Glad you are so interested in the prize contest. Hope you win. Nothing wrong about that.

J. F. Weiss, city. Thanks for problem. It is not a difficult four mover. Soon as prize contest is finished will consider it.

D. Looney, Weed, Cal. Black need the kick for white have it their own way in nearly every proposition. Messrs. Weiss and Goddard if black moves K-R3 in problem No. 1141, how are you going to mate in three moves? E. J. Gillette, Rochester, Wash.

Capablanca has answered a challenge addressed to him by A. Aljechin, accepting it in principle, but at the same time advising him that Rubenstein comes first in consideration unless a match between Messrs. Aljechin and Rubenstein projected for January at The Hague should result in a decisive victory for one or the other. Preference would then be given to the winner.

Frank Marshall at Grand Rapids, Mich., encountered 32 in simultaneous play, defeating 27; draws four, and lost one to F. A. Holloway. A. C. B.

GAME NO. 1135.

Queens Pawn Opening.

Daly.	Hernandez.	Daly.	Hernandez.
White.	Black.	White.	Black.
1—P-Q4	Kt-KB3	26—BxKt	RxB
2—P-K3	P-Q3	27—Q-Q6	Q-B3
3—B-B4	QKt-Q2	28—R-Q	K-R2
4—Kt-KB3	P-B3	29—B-B5	R-Q2
5—Kt-B3	Q-B2	30—PKB4	Q-Q
6—P-K4	Kt-Kt3	31—R-KB	P-B4
7—B-Kt3	P-K4	32—R-K6	R-Q6
8—PxP	PxP	33—Q-R	PxP
9—Kt-KKt5	B-KKt5	34—P-B5	B-K
10—P-B3	B-Q2	35—QxP	R-Q7
11—Q-K2	P-KR3	36—P-B6ch	B-Kt3
12—Kt-R3	B-B4	37—B-B5	QxP
13—Kt-B2	BxKtch	38—P-Kt4	RxP
14—PxB	B-Kt2	39—P-Kt4	P-KR4
15—B-K3	R-Q	40—R-Q	PxP
16—Q-Kt3	Kt-B	41—B-Q8	K-Kt
17—O-O	P-Kt3	42—R-K5	Q-B
18—QR-Q	R-Kt	43—QxP	BxB
19—KtxR	Kt-K2	44—RxB	Q-K
20—Kt-B2	O-O	45—R-B	Q-K8ch
21—Kt-Q3	Kt-Q2	46—K-R	Q-K4
22—P-Kt4	P-QB3	47—Q-R3	RxP
23—KtxKP	KtxKt	48—R-Q	Q-K8ch
24—BxKt	Q-B3	49—K-Kt	K-B2
25—B-Q6	R-K	50—P-R5	R-K7

Resigns.

A—If 23...PxB; 24,KtxB, QxQ, 25, KtxBch, K-R, 26,PxQ, etc. Played by H. Daly of Roslindale, Mass., and N. Hernandez of Tampa, Fla., in the final round of the third championship tournament.

Game No. 1146.

Caring.	Maguire.	Caring.	Maguire.
White.	Black.	White.	Black.
1—P-QR3	P-KB4	18—BxKt	B-Q4
2—P-QH4	Kt-KB3	19—Q-B2	Kt-K5
3—Kt-KB3	P-Q3	20—Kt-K	K-R
4—P-Q4	P-QB3	21—B3	Kt-B2
5—QKt-B3	Kt-QR3	22—Kt-Q3	Kt-Kt4
6—P-K3	Kt-B2	23—B-Kt2	Kt-Q3
7—B-K2	B-KB3	24—Kt-B2	Q-B2
8—Q-Q3	P-KKt3	25—R1B	P-KR4
9—0-0	Q-Q2	26—B-Q3	K-R2
10—P-QKt4	B-Kt2	27—R-K2	QR-B
11—B-Kt2	0-0-0	28—R-K	KR-K
12—QR-Q	Kt-Kt5	29—Q-K2	P-K4
13—P-R3	Kt-KB3	30—PxP	BxP
14—P-Q2	P-Q4	31—BxB	RxB
15—Kt-K5	Q-K3	32—Q-Q2	R-K
16—PxP	KKtxP	33—Q-B3	RxP
17—Kt-B3	KtxKt	RxR	R—8

Continue, 35, Q-Q4; Q-K2, 36, P-KR4, P-QR3, 37, Kt-R3, Q-K4, 38, QxQ, P-RxQ, 39, K-B2, K-K2, 40, Kt-B4, B-B2, 41, BxP, P-A, PxR, RxP, Kt-B5, 43, RxRP, R-QKt4, 44, K-Kt3 Kt,RP, 45, RxKt RxP. Drawn.

A—Neat sacrifice by white insuring at least a draw with winning chances overlooked entirely by black.

A. Saunders, Princeton, Or.—$1 received; subscription for Weekly for one year. You are starting out right in the new year. Try for the prize in the January problem contest. Will look over the problem contributed by you soon. Thanks for help and interest manifested.

Frank Maus of Long Beach, Cal., but who is now attending the state chess tournament in San Francisco contributes the following two element problem on the opening day, December 27, 1921. The score stood at the close of the day's contest: Gruer 1, Fink 0; Metzke 0, Lovegrove 1; Halloran 0, Woskoff 1; Bernardo Smith 0, Miotkowski 1; Swanson 0, Clarke 1; Borochow entered on the second day's play. It promises to be one of the most successful and hotly contested tournaments ever held in the state. A selection of players unsurpassed on the coast for skill, enthusiasm and goodfellowship.

Mr. Maus, many Oregonians will thoroughly appreciate your kindness in reporting news from the field with games. Happy New Year!

Solutions have been received from Frank Maus, Roger Miller, H. S. Goddard, C. G. Givens, E. L. White, August Springer, D. Looney, E. H. Decker, Dr. Dalton, J. N. Habson, A. E. Schmidt, J. N. Roak, Joseph F. Weiss, R. F. Stover, Ray LaFever, Mrs. Harriette Ehricks.

Solutions have been received from C. G. Givens, H. S. Goddard, E. L. White, C. G. Campbell, F. Maus, J. O'Brien, Dr. Dalton, A. Springer, F. Weiss, E. J. Gillette, A. Jensen, Raymond Lewis, D. Looney, C. S. Rorer, Roy Stover, Professor C. C. Kanaga, A. E. Schmidt.

Harold Simmons, Pasco, Wash.—Sorry you are bothered with problem No. 1128. R-QKt. If BxB or RxKt or RtxKt or BxB, P-Kt5, mate. If R-B4, PxR, mate.—Editor.

Frank Maus, San Francisco, Cal.—The 15-mover is all to the good, but impossible to diagram; it is satisfactory to you, will publish with a full description, etc. The Christmas Tree is another long analysis, but very interesting as a novelty in chess play. That would be fine attraction published with accompanying solution. Let me hear from you in regard to it.

J. L. Rockwell, 499 East Twenty-seventh street, Portland, contributes splendid analysis of problems No. 1142 to No. 1147. Glad to have you join us again. If BxQ instead of QxQ rook mates.

N. B., solvers: Description correct, but in one instance, white queen on KR7 instead of QR7 in problem No. 1150.

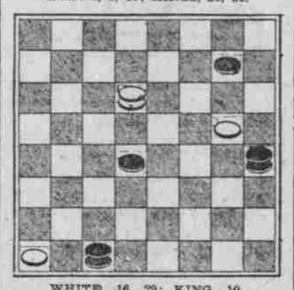
Checkers

PROBLEM NO. 1311.

By T. R. Murphy.

Not very difficult, but very neat as an end-game play. One good way to show your interest in this checker column is to solve the problems in this issue and send in the solutions. Some of them you will have to work as hard as you play or vice versa.

BLACK, 8, 18; KINGS, 20, 30.



WHITE, 16, 29; KING, 10.

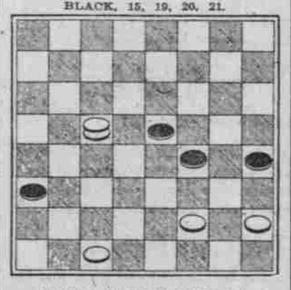
White to move and black to win.

PROBLEM NO. 1312.

By Frank Pollard, Los Angeles, Cal.

Another neat, practical position that has enough pep in it to make it interesting. It sparkles with originality. Many of the amateurs should profit by the analysis of these little gems. In actual play many times these seemingly easy wins would be overlooked.

BLACK, 15, 19, 20, 21.



WHITE, 27, 28, 30; KING, 14.

White to play and win.

PROBLEM NO. 1313.

By J. P. Reed.

Black, 3, 7, 8, 10, 11, 12, 14, 20. White, 12, 16, 21, 22, 23, 24, 27, 32. White to move and win.

PROBLEM NO. 1314.

We are in some doubt as to the author's name, but believe this was contributed by Leo Sams. Black, 5; king, 2. White, 27; king, 10. White to play and win. Only two apiece—huh! I'll show you! Yea? Send us the showing. We want it to publish.

SOLUTIONS.

Problem No. 1307—Black, 8, 10, 15; kings, 6, 13, 24. White, 20, 22, 23, 30; kings, 3, 7. Black to win: 24-19 the key or star move; 23-16, 8-11, 16-7, 12-8, 5-14, 10-26, 30-23, 6-2, 3-8(A, 2-4, 20-16, 4-8, Black wins.

Problem No. 1308.—Black, 3, 4, 17, 21, 28; kings, 18, 26, 31. White, 14, 15, 20, 24, 27; kings, 2, 19, 32. White to win: 15-11, 18-9, 2-7, 3-10, 11-8, 4-11, 20-16, 11-20, 27-23, 20-27, 10-24, 26-19, 24-22. W. W.—Harry Gibbs.

Problem No. 1310—Black, 15, 17, 24; king, 31. White, kings, 6, 14, 21, 23. Black to draw: 24-27, 23-32, 15-18, 14-22, 31-27, 21-14, B. D. Mr. Gibbs and several of the solvers have written very highly of these and even some have expressed their opinion that they have not been excelled in The Oregonian. All the result of help from some experts. Send us some more.

PROBLEM NO. 1309.

By J. E. O'Brien, Duckabush, Wash., Web Camp.

Thank you, Mr. O'Brien. We thoroughly appreciate your help. Some of the solvers will fall down on this, for it is quite a complicated arrangement. Get the key starter and you will enjoy the ending: Black, 1, 2, 4, 9, 12, 25, 27; kings, 26, 28. White, 5, 7, 11, 15, 18, 19, 22, 23, 24. White to move and win.

We are in receipt of a good problem which will appear in our next issue from J. E. O'Brien.

Problem No. 1290 was a tricky one—J. E. O'Brien, Paulsbo, via Holly & Vinland, R. F. D., Wash., Web Camp. Mr. O'Brien is one of the very best solvers on our list. Some original compositions by him will soon be published. The boys of the camp are deriving many hours of pleasure from the checker column. Write that their disappointment is not to be measured, cannot be estimated when they are left out.

A. Ecklund, a merchant of Pendleton, Or., 737 Main street, writes that he would consider it a favor if the author or any one would play by correspondence the ending or solution to problem appearing in The Oregonian recently: Black, 8, 11, 12, 14. White, 19, 20, 25, 31. White to play and win. Kindly referred to J. J. Butterfield, Centralia, Wash., by the editor.

Solutions have been received from Harry Gibbs, Ira Dennis, Isadore Greenbaum, A. Hart, J. Graham, P. Stettenburg, J. Jack, Bert Berry, Frank Pollard, A. H. Saunders, Leo Sams, W. L. Bryant, H. J. O'Brien, D. Hathaway, H. J. Brown, James Young, G. H. Wollam, Hood River, Or. Mr. Wollam is a new solver to join the list. Good, and your analysis of the problems are fine. When contributing problems for publication, do name the author if possible that proper credit may be given.

Leo Sams, Oregon City, Or.—Solution of problem contributed at hand. Will publish soon.

J. E. O'Brien, Web Camp, Wash.—Your solutions are correct to both I. J. Vair's problems. Your solutions to the chess problems, please compare with the solutions given and correct all errors. This is very beneficial to all solvers to find wherein they can themselves defeat the key given. Mr. O'Brien writes that he doubts if there is a win for white in problem No. 1284, for king does not have to go 6-10, but moves to 6-9 and hugs the double corner. Thanks for diagramed problem, but you must forward the solution to the same for publication.

Mrs. Mary Kennett, Hover, Wash., asks where she can obtain the rules for playing checkers. Lee's Golde is a small book, but as good for your purpose as any we know. Any prominent book company. Ninth edition the best.

No. 1218 is a dandy. Yes, and your solution is another dandy. Come again—J. C. Egleston, Salem.

J. W. Peacock, Grand Ronde, Or., asks if eight men can be placed on the board so that no two of them will be in a row. This is an old chestnut that we are pleased to refer to the readers.

GAME NO. 1121.

This game was played in Chehalis, Wash. Contributed by J. J. Butterfield, Centralia, Wash. Smith, black; J. J. Butterfield, white.

11-15	29-25	11-20	31-27	27-31
29-19	7-11(A	19-16	1-10	17-22
8-11	24-20	12-28	2- 6	3- 7
22-17	11-15	21-17	10-15	19-15
10-14	28-24	14-30	6-10	20-24
25-22	8-11	23- 5	15-19	32-27
4- 8	26-23	30-26	10-17	28-32
17-13	2- 7	27- 2	19-24	27-20
15-18	30-26	2- 9	27-23	31-27
22-15	5- 9	13- 6	24-27	15-11
11-18	20-16(B	10-14	23-19	W. W.

A—This move loses.
B—The stroke.

GAME NO. 1122.

Cross.

By	J. McFarland,	Glasgow,	Scotland.
West	Lothian	Courier.	
11-15	24-20	10-17	14- 7	11-15
23-18	8-10	21-14	3-10	8-11
8-11	32-27	2- 7	18-14	30-25
24-20	9-14	19-15	10-17	2- 6
4- 8	30-26	9-13	21-14	25-21
23-19	5- 9	25-21(A	11-15	6-10
10-14	26-22	13-17(B	14-10	15-19
19-16	18-23	15-10	6-11	11-15
14-23	27-18	17-22	10- 7	19-23
26-19	14-23	10- 6	26-30	10-14
7-14	22-18	23-26(I	7- 2	21-25
22-17	1- 5	6- 2	15-18	15-19
14-18	17-14	7-10	3- 8	W. W

A—Robertson's cross, var. 113 at 12th move; 15-10 is played and black draws. I submit this to win. 7-10, 14-7, 3-10, 18-14, 10-17, 21-14, 11-15, 6-2, 32-26, 2-6, 8-11, 14-10, 26-30, 10-7, 30-25, 7-3, 15-19, 3-8, 13-15, 8-11, W. W.

Var. 2—23-18(3, 31-22, 12-16, 14-10, 7-23, 29-25, 11-18, 20-4, 23-27, 22-15, W. W.

Var. 3—23-27, 31-24, 12-16(B, 29-25, 13-17(4, 14-9, 5-23, 21-14, 11-18, 26-2, W. W.

B—If 13-17, 15-10, 5-9, 14-5, 7-22, 21-14, White wins.

Var. 4—16-19, 15-10, 19-23, 10-6, 23-26, 6-2, 8-12, 18-15, 11-18, 2-11, W. W.

GAME NO. 1123.

Old Fourteenth.

11-15	15-22	8-11	7-14	28-32
23-19	28-19	27-23	13- 9	14-10
8-11	5- 9	11-15	15-19	32-28
22-17	30-26	32-28(A	28-16	9- 6
12-16	9-14	23-18	19-23	28-24
17-13	26-22	28-19	31-26	6- 2
11-15	7-11	2- 7	14-18	B)24-20
26-23	22-15	22-17	20-16	C)16-12
4- 8	11-18	10-15	9-14	29-16
23-14	25-22	19-10	21-17	2- 7
9-18	18-25	6-15	24-28	18-23
24-20	23-22	17-10	17-14	B. W.

This was offered as an improvement on some play that was published by Mr. Hefter of Chicago.

B—Sustains the black win.

C—If 16-11, 20-24 and black wins.

D. Z. Hathaway, Nampa, Idaho—Was analysis of 1310 satisfactory?

Solutions have been received from Harry Gibbs, A. Saunders, Isadore Greenbaum, A. Hart, C. Bender, W. J. Butterfield, George McDonald, L. Sams, J. C. Egleston, H. J. Brown, D. Z. Hathaway, Frank Pollard, W. L. Bryant, I. V. Blaine, Ira Dennis, P. Stottenburg, J. O'Brien, Bert Berry, James Young, W. Schaff.

CHINOOK WIND DESCRIBED

All West Breezes at Rufus, Or., Said to Be Moist.

RUFUS, Or., Jan. 19.—(To the Editor.)—In your answer to a question from Hillsboro in regard to chinook winds east of the Cascades you say "the winds east of the mountains are not moist, but dry." In that you are mistaken. Our chinook, and all west winds, here are moist, "damp" winds. Airmen who fly over wooded mountains in summer tell us the air is both damp and cold over them. In harvest here when we have west winds one can make a double band all day and bind sheaves, but with a hot east or north wind the straw gets so dry and brittle it is impossible to work. Again, in threshing with west wind the header wagons will run two or three days without scooping shattered grain from the floor of the header bed, but if a hot east wind comes we are compelled to scoop up grain, chaff, head broken off at neck of stem, once or twice a day, and the concave under the cylinder has only one row of teeth at bottom, all in front are blanks; but if the wind is from the west we must have concave full of teeth, no blanks, especially if it is club wheat. The chinook winds come high and seem to settle on the earth from a great altitude.

Thus the residents at Portland after a snow storm can tell when a thaw or chinook is coming by watching the timber at the head of the Clackamas river and base of Mount Hood. The snow will leave the timber on the highest peaks first, the woods showing green, when lower down on the level or floor of the valley all timber is still white with snow.

I have watched this for more than 50 years, having come to the valley in January, 1871, and moved here 22 years ago. We say "the wind blows." It does not, never did nor can, because it moves in and by suction from in front. There is no force or propelling power behind it to push it along. Before it can come in there must be a hot wave in the interior hot enough to heat the air and absorb its moisture. The heated air rises like a balloon filled with hot air, thus creating a pocket, or as near a vacuum as nature's laws will allow. Then the cool air is sucked in to fill the empty pocket. All this is the work of nature's laws and forces which are God's laws, for he rules this sphere through nature's laws and forces, by, in and through the solar and planetary system.

The orbit of the earth's circle is 190,000,000 miles, and Mercury and Venus are within our circle around the sun and help control the forces of nature here. Our planetary system caused a drouth in England and Europe last year. Astrologers tells us the same influence from the planetary systems will prevail in Oceania this coming year.

The evening sea breeze comes high also, as well as the chinook, getting here, 30 miles east of The Dalles, about 4 P. M., the same time I used to notice it in Linn county.

S. N. MILLARD.

The answer concerned the chinook wind, not the westerly breezes of summer or autumn. That these winds lose most of their moisture is indicated by the heavy rainfall of the district west of the Cascades and the comparative dryness of the eastern Oregon climate.

Uruguay Buys U. S. Autos.

Out of a total of 13,000 automobiles in Uruguay, 60 per cent are of American make.

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This remarkable tonic is the inspiration and joy of the weak and debilitated. It brings back the sunshine of existence to those of lost vitality. It opens up wonderful visions of the future to the down-cast, weary-laden souls depressed in spirit and body. It creates the strength and the courage to fight winning battles in those who have lost heart, given up exhausted under the strain and weight of their daily burdens. It kindles anew the vital spark of life in the slumbrous body of the languishing, causing it to burst forth at last in a radiant glow of perfect health.

"LYKO" is, indeed, of great restorative power; in fact, Nature's first aid in nearly all sub-normal conditions. A general tonic in the broadest sense, it rebuilds the entire system because of its effective and beneficial action upon all of the principal organs of the body. It increases the appetite, promotes digestion and proper assimilation, strengthens the nerves, tones the heart, improves the function of the liver, regulates the bowels and tends to relieve suppressed conditions of the kidneys.

If you are thin-blooded, pale and weak, physically and nervously exhausted, generally run-down, devoid of animation, or lacking in endurance and staying qualities and mentally depressed in consequence, let "LYKO" recreate your vital force and bring back to you that buoyancy, energy and cheerfulness of former days. Try it today and see how much better you feel tomorrow. Your druggist has "LYKO." Get a bottle today.

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Rheumatism, lumbago, neuritis, backache, stiff neck, sore muscles, strains, sprains, aching joints. When you are suffering so you can hardly get around just try Red Pepper Rub.

Nothing has such concentrated, penetrating heat as red peppers, and when heat penetrates right down into pain and congestion, relief comes at once.

Just as soon as you apply Red Pepper Rub you feel the tingling heat. In three minutes the sore spot is warmed through and through and the torture is gone.

Rowles Red Pepper Rub, made from red peppers, costs little at any drug store. Get a jar at once. Be sure to get the genuine, with the name Rowles on every package.—Adv.

FIERY, ITCHY ECZEMA HEALED RIGHT UP BY APPLYING SULPHUR

Any breaking out of the skin, even fiery, itching eczema, can be quickly overcome by applying a little Mentho-Sulphur, says a noted skin specialist. Because of its germ destroying properties, this sulphur preparation instantly brings ease from skin irritation, soothes and heals the eczema right up and leaves the skin clear and smooth.

It seldom fails to relieve the torment and disfigurement. Sufferers from skin trouble should get a little jar of Mentho-Sulphur from any good druggist and use it like a cold cream. —Adv.

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Now Used By Millions to Help Increase Weight and Energy, Clear the Skin, Aid Digestion and Correct Constipation

Easy and Economical to Take—Results Quick

Everywhere people are talking about their astonishing improvement in health and appearance since they started taking MASTIN'S YEAST VITAMON TABLETS with every meal. These supply in concentrated form not only the precious yeast vitamines, but *all three* of the equally important vitamines which Science says you must have to be strong, well and properly developed.

By increasing the nourishing power of what you eat, MASTIN'S VITAMON TABLETS help supply just what your body needs to feed the shrunken tissues, strengthen internal organs, clear the skin and renew shattered nerve force. Under their influence, many embarrassing skin eruptions seem to vanish as if by magic, leaving the skin and complexion fresh, clear and glowing with ruddy health.

MASTIN'S VITAMON TABLETS do not upset the stomach or cause that bloated feeling; but on the contrary are a great aid in correcting indigestion and constipation. By acting in a natural way as a general conditioner of the whole system they usually help to put on firm flesh and increase energy in a remarkably short space of time.

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If you are thin, undeveloped, lacking in energy and ambition and your face and skin disfigured with unsightly skin eruptions or boils, you should find it well worth while to make this simple test and watch the surprising change in your physical condition and appearance: First weigh and measure yourself. Next take MASTIN'S VITAMON—two tablets with every meal. Then weigh and measure yourself again each week and continue taking MASTIN'S VITAMON TABLETS regularly until you are satisfied with your gain in weight, "pep" and energy. It is not only a question of how much better you look and feel, or what your friends say and think—the scales and tape measure will tell their own story.

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Be sure to remember the name MASTIN'S VITAMON—the original and genuine yeast vitamine tablet—there is nothing else like it, so do not accept imitations or substitutes. The name MASTIN'S on the yellow and black package is your protection. If you are not entirely satisfied with the results in your own case your money will be promptly refunded. You can get MASTIN'S VITAMON TABLETS at all good druggists, such as the Owl Drug Company.

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