



The Grand Canyon.

Know the Variety Sown.

I have read with interest W. L. Martin's letter in the ADVOCATE of January 27th and the replies to it since. If the farmers of Ontario would sow either one of the varieties of oats mentioned, namely, O. A. C. 72 and Banner, they would not be going very far astray, and would be doing decidedly better than they are now doing.

While conducting an agricultural survey during 1915 on 100 farms in each of four counties in Ontario, it was found that a great many varieties were being grown. In Waterloo County 28 varieties were met with among 77 farmers who claimed to know what variety they were sowing; in Northumberland 18 among 56; and in Carleton 19 among 80. It is an undeniable fact that many of these varieties are far from the most suitable for the farms on which they are sown. Too many farmers hear of some new variety or read the wonderful description of it in a seed catalogue and straightway obtain seed of same without knowing the strength of the straw, percentage of hull, or its general suitability to their local conditions. There seems to be too much of a "millinery" idea of always wanting something different. There seems to me to be little cause for confusion in the minds of intelligent farmers who willfully realize that what is best for Prof. Grisdale, under Ottawa conditions, might possibly not be best for Prof. Zavitz, under Guelph conditions. The fact remains that the two varieties mentioned above are both top-notchers and the farmer is taking less risk by sowing either of them than some new variety boomed by some one who has said new variety for sale. It must also be borne in mind that at Ottawa and Guelph many varieties of cereals are being and have been tried out for years for the benefit of the farmers and those who pass up these varieties of proven value for something else are doing so at risk of considerable loss.

While we are considering this question of varieties, it may be interesting to note the fact that many farmers do not even know the names of the varieties which they are sowing. The following is from the report of the Agricultural Survey, conducted by the Commission of Conservation, which was mentioned above:

	Dundas	Waterloo	Northumberland	Carleton	Total Farms
Percentages of wheat	20	92	39	46	49.2
Percentages sowing name of variety grown	16	70	20	37	35.7
Percentages not knowing name of variety grown	4	22	19	9	13.5
Percentages of oats	97	100	99	98	98.5
Percentages knowing name of variety grown	41	77	56	80	63.5
Percentages not knowing name of variety grown	56	23	43	18	35
Percentages of barley	86	50	25	47	52
Percentages knowing name of variety grown	11	40	9	14	18.5
Percentages not knowing name of variety grown	75	10	16	33	33.5
Percentages of any variety sown	47	11	8	14	20

Those who do not know what they are sowing will find it impossible to procure seed of the leading sort at either Ottawa or Guelph, select carefully each year from the best field or part of field enough seed for the following season and stick to it until something else has been proven better.

F. C. NUNNICK,
Conservation Commissioner.

A Visit to Yellowstone Park.

Editor "The Farmer's Advocate."

No apology to the readers of THE FARMER'S ADVOCATE is needed because the subject of the following sketch is situated not in our country, but in the United States.

The more elderly among us will remember reading in the school books of childhood days of the boiling, spouting springs of Iceland. What feelings of awe and wonder those stories excited! In those days people had to stay more at home and were not satiated with sights. Children's eyes were wonder-wide.

Those intermittent, spouting springs were called geysers. That was the Icelandic name for them, and the word is still applied to all such phenomena. At that time no other geysers were known, and there are only two other fields of geyser action of any account in the world known as yet. One of these is in New Zealand, and the other, and the most extensive of the three, is in Yellowstone Park. Hot Springs are found at Banff, B. C., and in many other parts of the world. These partake of the same characteristics as the geysers, but nowhere else than in the three places mentioned does the force of internal heat acting upon water exhibit such energy. All three regions are volcanic.

Yellowstone Park is situated in the northwestern corner of the State of Wyoming, though it takes in a little strip from Montana on the north and from Montana and Idaho on the west. It is straight south of the eastern part of Alberta. It is almost square and quite large, its area being rather over 3,300 square miles. It lies right in the line of the Rocky Mountains which here are spread wide. The great divide separating the headwaters of the Pacific from the Atlantic crosses the Park at an altitude of 8,500 feet. The major portion of the Park is an elevated plateau of an average altitude

minutes. We hurried to get a good place near. The opening is about six feet long and two feet wide in the centre, narrowing towards either end. It is on the summit of a low, conical mound, about 6 feet high and 150 feet in width. The mound is of rock built up by the geyser from the silica contained in solution in its waters. Immediately around the opening is something like a wall from two to three feet high. Quite a crowd had gathered and 25 or 30 had kodaks ready. Old Faithful steamed away, but that was all. After what seemed a long time, the waters rose to the top and a jet or two boiled over. A little longer and two or three spouts burst up about ten feet. Then the waters sank again, and even the steam seemed to fail considerably. Thus, for a time, until some thought that that was all the eruption there was to be. And then the burst came. With what seemed resistless power the great stream of boiling water and steam mounted straight up, pulsing like a living thing, but always higher and higher, until it reached 150 feet. It poured forth its flood to that height for two or more minutes, when it sank slowly, rather it continued to spout powerfully, but with decreasing energy, until in about four minutes it had withdrawn itself and a strong outpour of steam continued to blow off for a time. That play was over. It is estimated that 3,000 barrels of water are thrown out at each eruption.

There are about 84 prominent geysers in the Park, but if every little spouter and hot spring and steam vent worth noting were added, the number would be 3,000 or more. The geysers are mostly situated in three districts, miles apart, known as Upper, Lower and Norris basins. The largest now active is the "Giant," whose circular opening is 6 feet across and whose waters, when he does take the notion to blow off, are poured forth in mighty volume for an hour, reaching a height of 250 feet. After such an effort, he naturally rests awhile, from eight to twelve days. His date for business and ours for seeing him unfortunately did not coincide. His crater and cone seemed cool and innocent. Then there is the "Constant," which sends up sparkling jets from the centre of a shallow pool. It plays for half a minute to a height of fifteen or twenty feet, then rests half a minute, and so on, all the time. The others vary in size, time between eruptions, height and duration, and no two alike.

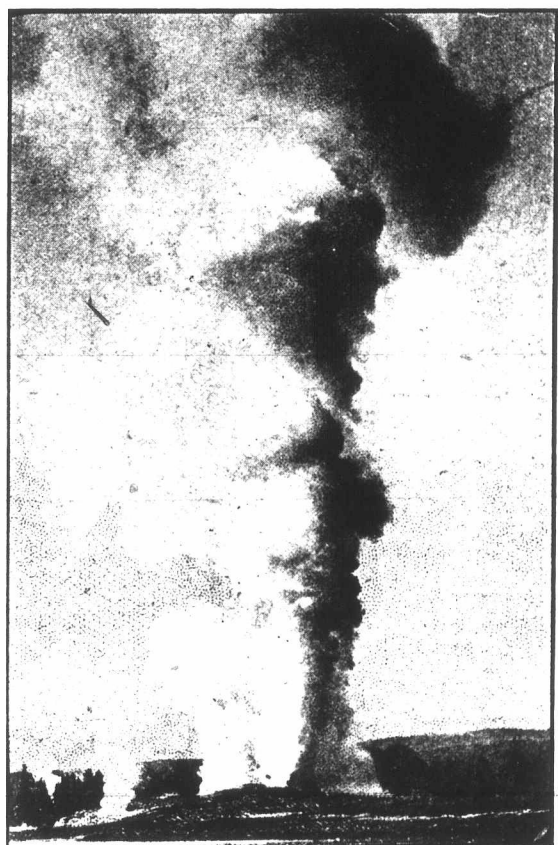
Besides the true geysers there are many openings from which steam alone constantly issues. One of these—"The Black Growler"—roars like the safety valve of a railway engine. On a hill face, which was covered with a dense growth of pine thirteen years ago, there suddenly broke out a great number of steam vents, which are steaming still. The forest was completely killed and the now bare hillside is known as the "Roaring Mountain."

As might be expected, there are many boiling springs and some not so hot. They range in size from tiny bubblers to lakes 300 feet in diameter. Many have most beautiful colorings. Most of them send forth hot water streams, but some do not overflow, simply boil. In contrast with these are the "Paint Pots," basins of boiling, bubbling clay, white or drab colored. Also the "Mud Geyser," a great bowl of thick mud from whose surface large bubbles of steam are constantly breaking, each as it breaks throwing upwards a chunk of mud as big as the fist. Many of these are thrown to the edge of the sunken bowl, where they keep piling up until, getting top-heavy, a mass breaks off and topples in.

In some places the rock seems honeycombed with tiny geyser tubes, which, without intermission shoot up a foot or two in height.

Fire-holes was the expressive name the early explorers of the region gave to the geysers. And the thought of fires underneath is what is borne in upon the mind of the tourist as he picks his way in some of the more shaky spots.

Besides these wonders, there are many other sights in the Park well worth seeing. Yellowstone Lake, fifteen miles across and lying at an altitude of 7,740 feet, is a beautiful sheet of the clearest water. The short-leaved pine forests, dense, fairly tall, prevailing wherever possible, are a sight of themselves. No green timber is allowed to be cut, though millions of feet are going to waste. There are also many beautiful ravines, cascades, waterfalls, rock eminences, but the two special features, in addition to the geysers for which the Park



The Giant Geyser.

of 8,000 feet, surrounded on all four sides by mountain ranges. Geologists tell us that at one time it was a rather depressed plain, but that such an abundant outflow of lava poured forth from two volcanoes as to fill the whole area to a depth of 2,000 feet, banking up the retaining mountains, and that breaking through a lower part in the southwest, this lava flowed for many miles across Idaho, filling up and levelling the great plain known as the Snake River Valley.

Entering the Park from the north, as we did, the "Mammoth Hot Springs" are the first of the special sights. The waters here are highly charged with lime, and, as they boil up from the many springs, spread out, each on the flat terrace which it has built up, depositing lime as they cool. When they go over the edge of the terrace, they run down its perpendicular face leaving it in ridges resembling in form that of ice left on the side of a building where water has trickled down in winter. The terraces vary in size and height according to the volume of the spring which has formed them. The largest we estimated to be about three acres in extent. The colorings of the rock faces where the waters run down, due to algae, are truly wonderful. The same holds good throughout the park wherever hot waters are exposed to the air and are cooling. The colors on the rock below range from pale lemon and salmon tints through deepening shades to the darkest chocolate brown.

"Old Faithful" is the most noted geyser, though not the largest. It has received its name from the regularity of its eruptions. It can be depended on to play every 70 minutes or so. Never more than 85. So it has gone on for forty years at least, summer and winter, day and night. When our party reached the camp there we were told that she was due to spout in 15



A Wild Bear in Yellowstone Park.