

REPORT ON TONOPAH—NOT UNLIKE BOHEMIA.

ANY persons in Oregon will be interested in the latest report of the United States geological survey on the mining district of Tonopah just received. Ore deposits were discovered in the Tonopah district, says the bulletin, in April, 1900, by James L. Butler. In the fall and winter of 1902, Mr. J. E. Spurr of the United States geological survey visited the district and studied it. He repeated his visit the following summer and in the fall of 1903 gave the main economic results of his investigations to the public in the form of a brief preliminary report, which the survey listed as Bulletin No. 219. The final report, which is entitled "Geology of the Tonopah Mining District, Nevada," has recently been published as Professional Paper No. 42 and is now available, free of charge, to all who are interested in the development of this important region.

OF MUCH VALUE.

The geological problem presented in this district could have been solved only by a trained petrographer, since the igneous rocks that carry the vein deposits have been largely covered by practically barren flows of more recent eruptions. The very careful and thorough study of the district which Mr. Spurr has made can hardly fail to be of great practical value to the miner, as well as of scientific interest to the student of ore deposits. The value and interest of the text are enhanced by the addition of 78 illustrations, which include topographic and geologic maps (some of them in colors), diagrams, stereograms, plans of veins and faults, geologic sections and cross sections, and photographic views of characteristic landscape features.

The rocks of the mining district are all of immediate volcanic origin, with the exception of a series of water laid tufts, which represent the accumulations of fine volcanic detritus in a Tertiary age, probably Miocene-Pliocene. The first eruptions of this volcanic epoch, as displayed at Tonopah, were andesites. Two andesites have been distinguished—the younger or earlier andesite and the later andesite, which is slightly more basic than the earlier andesite. Subsequently eruptions of rhyolite and of dacite occurred at intervals for a long time and produced several of the formations mapped, which include tufts and flows.

STRUCTURE IS COMPLICATED.

The structure is so complicated that no general cross sections have been made. Some interesting information on faulting has, however, been obtained, chiefly from mine workings.

The most important mineral veins occur in the early andesite, and do not extend into the overlying rocks.

The mineralization was probably caused by hot ascending waters immediately after the earlier andesite eruption. The primary ores have a gangue of quartz, adularia, and some sericite and carbonates, and contain silver sulphides—such as argentite, polybasite and stephanite—silver selenide, gold in a yet undetermined form, chalcocopyrite, pyrite and some galena and blende. The depth of oxidation is irregular. In the ore of the oxidized zone no important changes in the amount of gold or silver, as compared with the primary ore, have taken place. The ore near the surface is not a truly oxidized ore, however, but is an intimate mixture of original sulphides (and selenides), together with secondary sulphides, chlorides and oxides. Secondary sulphides include argentite and pyrargyrite.

A series of veins of small importance commercially within the Tonopah district was formed after the eruption of one of the members of the rhyolite-dacite series, the Tonopah rhyolite-dacite. These veins may be large, but are usually of low grade or barren. They frequently contain a greater proportion of gold than the earlier andesite veins, and have other distinguishing characteristics.

ARARAT IS ALMOST BARREN.

A series of veins of still less importance was formed after the eruption of one of the later members of the rhyolite-dacite series—a siliceous rhyolite, which makes up some of the hills near Tonopah. One of these, Mount Ararat, a denuded volcanic neck, is traversed by fissure veins that carry very little values.

Part of the earlier andesite is profoundly altered. The maximum effect of the waters which caused these alterations was the formation of the mineral veins along their circulation channels. The discussion of these processes is followed by the detailed study of analyses of typical specimens. The conclusion is drawn that the mineralizing waters were charged with an excess of silica, and probably of potash, together with silver, gold, antimony, arsenic, copper, lead, zinc and carbonic acid

and sulphur, with some chlorine and fluorine, but that they were noticeably deficient in iron.

The alterations of the later andesite by thermal waters is also discussed. By comparison of analyses and by microscopic studies it is concluded that the waters which produced the alteration were highly charged with carbonic acid and sulphureted hydrogen and contained magnesia, iron and lime.

It is interesting to note that Mr. Spurr finds a close resemblance between the Tonopah ore deposits and the deposits of the Comstock lode in Nevada and of the Pachuca district in Mexico. The ores of Silver City and Delamar districts in Idaho are also similar in many respects to those of Tonopah. These deposits all occur in tertiary lavas, chiefly andesitic.

From various reports given out by those competent to study the characteristics of the formation of veins and their filling relative to the Bonemia Mining District we note while reading this report many favorable conditions existing in Bohemia that compare with the most prominent mining districts of the land.

The Klamath Falls Express wishes it understood that Klamath Falls has no intention of annexing itself to California in a commercial sense and bluntly remarks: "A good deal of tommyrot has been published by Coast papers on the alleged desire of Klamath county to secede from Oregon and join her fortunes with California. The people of Klamath county are now as loyal in their allegiance to Oregon as they ever were, and have no idea of changing their allegiance to our neighboring state to the south."

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THE KEY THAT UNLOCKS THE DOOR TO LONG LIVING.

The men of eighty-five and ninety years of age are not the rotund well fed, but thin, spare men who live on a slender diet. Be as careful as he will, however, a man past middle age, will occasionally eat too much or of some article of food not suited to his constitution, and will need a dose of Chamberlain's Stomach and Liver Tablets to cleanse and invigorate his stomach and regulate his liver and bowels. When this is done there is no reason why the average man should not live to old age. For sale by The Modern Pharmacy.

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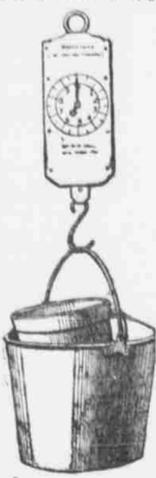
FARM & GARDEN

FINDING THE ROBBERS.

Milk Scales, the Milk Sheet and the Babcock Test Do It.

By B. H. RAWL, South Carolina. Probably the most expensive effort usually made by our farmers is the failure to keep books that will at any time enable them to tell whether they are doing business at a profit or a loss.

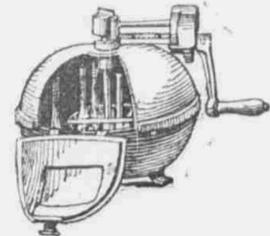
The dairy farmer with but small expense can keep track of his herd so that at the end of each month he can determine not only the profit or loss that he has realized from his herd, but the profit or loss that he has realized on each animal in the herd. Probably most dairymen can at the end of each month estimate the cost of food and labor for the month and in this way tell whether they are making or losing money. But that is no reason why there should not be a constant lookout for leaks, because one unprofitable cow in the herd had far better be sold at beef prices than kept in the herd to reproduce her kind and continually reduce the profits of the dairy.



MILK SCALES.

By the use of the milk scales, the milk sheet and the Babcock test the dairymen can cut out every unprofitable animal from the herd with but little trouble and expense and at the same time determine at the end of each month what his total profits are. The first cut shows milk scales, which will cost from \$3 to \$4, and should be suspended in a convenient place near where the milk is received from the pails. On the dial of the scales is a hand, or indicator, that can be adjusted by a thumb screw. Though the capacity of scales of this kind usually ranges from thirty to sixty pounds, the face shows only ten pounds, and each pound is subdivided into tenths. The indicator should be adjusted so that it will stand at 0 mark when the empty pail is hanging on the scales.

Where several milk pails are used it will be necessary for them all to weigh the same, so as to use the same scales. This can be done by using all pails of the same size and make and by running a little solder on the bottom of each, which can be scraped down until they all weigh exactly the same. As the pail that contains the milk from each cow is carried to the can it should first be hung on the scales, and while hanging there the weight (which is the weight of the milk, not including the pail) should be recorded on the milk sheet, which is tacked on the wall in



BABCOCK MACHINE.

arm's reach from the scales. The pail is then emptied into the can and the milk is ready to begin the next cow. A hand tester, or Babcock machine, with complete outfit for testing both milk and cream, can be purchased from any creamery supply company for \$9 or \$10.

Late Fall Plowing.

Late in the fall, when the weeds have matured, there is probably no great advantage in turning them under. In fact, there may be an advantage in leaving the stubble unplowed during the winter, since the stubble and weeds will catch the snow and thus increase the supply of moisture in the soil. But with a wet spring this factor may work to disadvantage.

As a rule, fall plowed land gets into workable condition earlier than spring plowed land and may be planted earlier in the spring; also it is usually possible to plow the land late in the fall, when it is in better condition for plowing than it may be early in the spring. With the land always in good condition for plowing early in spring, I would often prefer to leave the grain stubble (ground unplowed in the fall, plowing as early in the spring as possible, following the plow with the harrow or perhaps with the subsoilage packer in order to compact the soil and prepare a firm seed bed.—A. M. Tonipylka, Klamath Farmer.

Profits in Feeding Ear Corn.

The results of a recent western experiment in fattening steers are so striking as to make it appear that the grinding of corn for feeding choice two-year-old steers during the winter season is not warranted. The profits of feeding ear corn were fully twice as large, as those secured in feeding cornmeal or corn and cob meal.

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The story of the torture of Rev. O. D. Moore, pastor of the Baptist church of Harpersville, N. Y., will interest you. He says: "I suffered agonies, because of a persistent cough, resulting from the grip. I had to sleep sitting up in bed. I tried many remedies, without relief until I took Dr. King's New Discovery for Consumption, coughs and colds, which entirely cured my cough and saved me from consumption. A grand cure for diseased conditions of throat and lungs. At Benson's Pharmacy. Price 50c and \$1.00 guaranteed. Trial bottle free.

Only 25c in addition on your subscription secures the Farm and Country Journal for a year. A journal the size of the Ladies Home Journal and an excellent paper. It has been greatly enlarged and improved recently.

GRIP QUICKLY KNOCKED OUT.

"Some weeks ago during the severe winter weather both my wife and myself contracted severe colds which speedily developed into the worst kind of grippe with all its miserable symptoms," says Mr. J. S. Eggleston of Maple Landing, Iowa. "Knees and joints aching, muscles sore, head stopped up, eyes and nose running, with alternate spells of chill and fever. We began using Chamberlain's Cough Remedy, adding the same with a dose of Chamberlain's Stomach and Liver Tablets and by its liberal use soon completely knocked out the grip." These tablets promote a healthy action of the bowels, liver and kidneys which is always beneficial when the system is congested by a cold or attack of the grip. For sale by The Modern Pharmacy.

Are you doing anything to help your society win the beautiful silk flag? The time is short, it is a rare opportunity.

REMARKABLE CURE.

"I was much afflicted with sciatica," writes Ed C. Nud, Iowaville, Sedgewick Co., Kan., going about on crutches and suffering a deal of pain. I was induced to try Ballard's Snow Liniment which relieved me. I used three 50c bottles. It is the greatest liniment I ever used; have recommended it to a number of other persons; all express themselves as being benefited by it. I now walk without crutches, able to perform a great deal of light labor on the farm." 25c, 50c and \$1. at Modern Pharmacy.

CAUGHING SPELL CAUSED DEATH.

"HARRY Duckwell, aged 25 years, choked to death early yesterday morning at his home, in the presence of his wife and child. He contracted a slight cold a few days ago and paid but little attention to it. Yesterday morning he was seized with a fit of coughing which continued for some time. His wife sent for physician but before could arrive another coughing spell came on and Duckwell died from suffocation.—St. Louis Globe Democrat, Dec. 1, 1901."

Ballard's Horehound syrup would have saved him, 25c and \$1.

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8:15 8:30	Cerro Gordo	8:05 8:30
8:30 8:45	Bacon	8:15 8:45
8:45 9:00	Dorena	8:25 9:00
9:00 9:15	Red Hook	8:35 9:15
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9:30 9:45	Stewart	8:55 9:45
9:45 10:00	May	9:05 10:00
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