

common stock, blown about by the winds of heaven. Now if we use well that which is at our own disposal, we get more from the common stock, for we make our plants more vigorous and far reaching in their efforts to take care of themselves. This is one of the many ways in which Divine Providence rewards the diligent husbandman. He, for instance, scrapes up a load of manure, after his less diligent neighbors think he had got all. He puts it on his corn-field; he not only has a return for what he puts on but his applying it enables his young plants to gather as much more from the soil and the passing breezes.

There is another fact worthy of notice. It has been proved by the most accurate experiments that seeds, during their germination, and up to the time when the first leaves shoot forth, absorb oxygen and give off carbonic acid, directly the reverse of what takes place subsequently. Now why is this? Probably that the young plant many have plenty of carbon in solution about its roots, and may receive through those organs temporarily that which it is destined to receive from the air through its leaves as soon as they shall have been formed.

It seems very much like a special provision for the plant, while in transition from the soil below to the atmosphere above. When the plant is fairly above ground, and has put forth its first leaves, it then draws its carbon, which makes not less than half of its solid matter, principally from the air, taking it in through its leaves; while it derives nearly all the other substances of which it is composed from the soil, taking them in through its roots.

Seeds then may be regarded as packages done up for the purpose of perpetuating the species to which they belong. Each package contains one or more embryo plants, so developed as to appear, under the microscope, almost precisely like the parent plant. Together with the embryo, and generally packed closely around it, is enough, and in most cases, especially if the seed be perfect, much more than enough, of food to nourish the embryo plant, till such time as its roots can take nourishment from the soil and its leaves from the air.

The embryo lies dormant till the circumstances required to arouse it to action are supplied. In a chestnut, for instance, there is a chestnut tree, not more perhaps than a thousandth of an inch in length, yet strongly resembling the full grown tree it all its parts. This becomes no larger till warmth, moisture, air and a partial exclusion of light are supplied. When these are furnished, it begins to enlarge itself, taking its food, first from within its own shell and then from the earth and air.

Its enlargement, while feeding on the food specially laid in for it, is called the germination of the seed; its enlargement from that time onward, the growth of the plant. On this latter we shall have something to say in a future number, which may not be only interesting to the young, but useful in its application to practical agriculture.

N.

AN IMPROVED MODE OF EXTRACTING METAL FROM THEIR ORES. BY JOHN FORREST, OF DEARS PLACE, SOMERS TOWN.—In carrying out this object, the ore is reduced to small pieces, and immersed for a short time in a hot alkaline bath, in order that it may absorb within its pores or fissures a portion of the alkaline solution. The broken pieces of ore, when saturated with the alkaline solution, are removed from the bath, and subjected to the action of a white heat in a muffle retort, or other suitably constructed furnace. While under this heat the alkali will become fused, and, forming a flux, it will greatly facilitate the fusion of the metallic matter contained in the ore, and the separation of the precious metals from their combinations.

Another and most important part which this flux plays in the operation is to cause the small particles of gold or silver to agglomerate in large beads on the surface of the broken pieces of ore, and thus to prevent the loss of the precious metals by sublimation.

The ore having been subjected to a white heat sufficiently long to reduce the gold to a pure metallic state (which will in general take place in about fifteen minutes, more or less, according to the quantity of ore under treatment), is discharged from the muffle or furnace into cold water, whereby the ore is rendered very fragile, capable of being readily crushed and reduced to powder. The precious metals may then be separated by any of the ordinary washing or amalgamating processes.

The composition of the alkaline bath may vary, but the following is found cheap and efficient:—(1), American potash; two pounds dissolved in water sufficient to cover the broken ore to be operated upon; or in lieu thereof, (2), common soda, six pounds dissolved in the like quantity of water before indicated; or, lastly, (3), a mixture of one pound of American potash with three pounds of common soda dissolved in water, as above indicated.

When operating upon gold or silver bearing ores which contain in large quantity either iron, copper, or arsenic, the process is somewhat modified; that is, instead of immersing the ore in a hot alkaline bath, the broken ore is placed in the furnace, and a dry flux is strewn over or mixed with it. The temperature of the furnace is then raised to a white heat, and the precious metal is extracted in a pure state from the ore.

By continuing this heat the pure metal (if the ore under operation is very rich) may be run into a mass, thus rendering the crushing, washing or amalgamating process unnecessary. When the fusing of ceration is arrested at the stage at which the ore is discharged into water, the gold or silver will be found in the form of beads of various sizes studding the surface of the ore, which is covered with a glaze, that insures the adhesion of the gold or silver beads to the ore, and which glaze prevents (as above mentioned) the sublimation of the precious metals. The dry flux

employed (the quantity of ore under operation being, say, half a ton) is a mixture of nitrate of potash one pound, carbonate or borate of soda one pound, and common soda eight pounds.

The patentee claims, "The glazing of gold and silver bearing ores as herein described, for the purpose of preventing the loss of the gold and silver by sublimation, when exposed to furnace heat."

TERMS.—We promised in a former number to adhere, as far as possible, to the use of terms which are universally understood; and occasionally to explain scientific terms in a little vocabulary for that purpose. In pursuance of that plan we give the following:—

Sulphate of Lime; Gypsum, Plaster of Paris; a chemical compound of 40 parts of sulphuric acid (oil of vitriol) to 28 parts of lime and 18 parts of water. The experiment of putting plaster with green manure for the corn crop has succeeded admirably in many trials.

Sulphate of Ammonia; a chemical compound of sulphuric acid and ammonia, very soluble in water, and favorable to the growth of plants. It is obtained from the water of gas works.

Carbonate of Lime; a compound of carbonic acid and lime, 22 parts of the acid to 28 parts of lime. Marble, common line stone and a portion of marls, and a small portion of all soils, are carbonate of lime. Carbonic acid is the gas which rises from fermenting beer, cider or wine; also from soda water, and from a bit of chalk or limestone when you drop vinegar upon it.

It is injurious, if taken into the lungs—destroys life if breathed in large quantities, as in the bottoms of dry wells—but is wholesome when taken into the stomach, as in soda water. It rises from fermenting manure heaps, also from rich soils; water readily absorbs it, and brings it down in the form of rain. It constitutes a large portion of all plants.

Carbonate of Ammonia; a compound of carbonic acid and ammonia. Ammonia is composed of 14 parts of Nitrogen and 3 of Hydrogen. It rises from fermenting or decaying substances, and combines with carbonic acid, which springs from the same sources, forming with it carbonate of ammonia, a volatile gas, that is, one which flies away in the air.

What is meant by fixing the ammonia is this:—Carbonate of ammonia is volatile, that is it flies away in the air and is lost from fertilizers which contain it. By putting in plaster (or sulphate of lime) if the manure be in a moist state, the volatile carbonate of ammonia is changed to the stable sulphate; and in this form it remains for the future use of plants. Hence the great utility of applying plaster to all manures and keeping them in a moist condition.—[Plough, Loom and Anvil.

Finishing Classes for Ladies.

MRS. ED. E. SUTHERLAND, having studied under the first masters in England, will receive adult pupils for Lessons on the Piano, \$10 per quarter. Drawing in pencil or crayons, \$5 per quarter. Ornamental needlework taught, including English and French embroidery, point lace, applique, knitting, netting and crochet, a course of 12 lessons, \$3. A Juvenile Class in History, Geography, Composition, Reading, Writing, Arithmetic, Needlework and Crochet, \$5 per quarter. Cuthbert's Cottages, 13th Ward.—7-3

MEDICAL NOTICE.

J. L. DUNYAN, Physician and Surgeon; residence north west corner 14th Ward, G. S. L. City.

Dr. Dunyan will attend to the practice of his profession in this city and country, at all hours of the day or night. His practical experience as a physician, and reputation as such among this people in former days is well known and understood. His treatment embraces every principle that his experience has proved safe and effectual. He anticipates by strict attention to business to receive the patronage and confidence of his brethren.

On the receipt of letters (post paid) containing a full description of disease, age and sex, Dr. D. will send advice and prescriptions.

Persons afflicted with ulcers, cancers, fever sores, scrofula, salt rheum, tetter, fits, palsy, rheumatism, affections of the kidneys and liver, gravel, the dolerous, Saint Vitus' dance, consumption, dyspepsia, general female debility and sterility and derangement would do better to board in the city for a short time, where they can be treated with electricity and such other means as would be necessary to effect a cure.

All kinds of produce, orders on Tithing office and labor on Public Works, received for fees.

References:—Edward Hunter, Wilford Woodruff, Jos. Young, Anthony Evans, W. S. Godbe, John Young, Jesse W. Fox, John Nebeker, Wm. Clayton, Philemon Merrill. 8-6m

BOUNTY LAND.

FOR the information of persons (or their legal representatives) who may have served the government of the United States, in any of the wars in which she may have been engaged since 1790, I deem it politic to publish so much of the law passed March 2d, 1855, as points out who are entitled.

I am still purchasing valid applications for Land Warrants, or Land Warrants after issued, or will obtain the Warrants on commission.

The following persons are entitled according to the above law:

Commissioned and non-commissioned officers, musicians and privates, whether of regulars, volunteers, rangers, or militia, who were regularly mustered into the service of the United States, and every officer, commissioned or non-commissioned, seaman, ordinary seamen, marine, clerk, and landman in the navy, in any of the wars in which this country has been engaged since 1790, and each of the survivors of the militia, or volunteers, or state troops of any State or Territory, called into military service, and regularly mustered therein, and whose services shall have been paid by the United States."

Also wagon-masters and teamsters, employed in time of war, in the transportation of military stores and supplies.

Also the widows, or orphans of any of the aforesaid. Also officers and soldiers of the revolutionary war, or their widows or minor children.

Also those who served as volunteers at the invasion of Plattsburg, in September 1814; also at the battle of Kings Mountain, in the revolutionary war, and the battle of Nickajack against the confederated savages of the south."

Also chaplains who served with the army in the several wars of the country."

Also, militia-men, and those who served as volunteers at the attack on Lewiston, in Delaware, by the British fleet, in the war of 1812-15."

NOTE.—The foregoing act gives to each legal applicant one hundred and sixty acres of land, hence, those who may have received a forty or eighty acre warrant, are entitled to receive an additional warrant for sufficient land to make in the whole, one hundred and sixty acres.

7-4

W. H. HOOPER.

BUSINESS NOTICES.

NATHAN DAVIS,
SEALER of Weights and Measures,
Public Machine Shop, Great Salt Lake City.
50-3m

TAILORING ESTABLISHMENT.
ENTRANCE, Deseret Store.—GAR-
MEN Cut and Made to order by
N. H. FEET.
51tr

SPEED THE PLOW!
ONE HUNDRED HODGE'S celebrated
Steel Plows on hand and for sale by
W. H. HOOPER.
52-3m

WAGONS EXCHANGED.
HEAVY AND LIGHT WAGONS exchanged for Stock on early application to
GILBERT & GERRISH.
51tr

COMBS! COMBS! COMBS!!
THE COMB FACTORY is in operation
four doors south of Hooper's store, where a good
article of fine and coarse Combs for family use are made.
Wheat, corn, flour, butter, or eggs, taken for payment.
8-3 JAMES SADLER.

NOTICE.
JOHN CARLILE wishes to inform the public that he has commenced **WAGON and CARRIAGE** work, and intends to accommodate customers at the shortest notice and the lowest terms. Shop, one block west of the Temple block.
7-3

Reformation in the Canyon.
THIS is to notify all persons hauling out of South Mill Creek Canyon, not to forget the Toll, and to settle up old debts, or they will find "NO ADMITTANCE."
6-3m E. B. FULLER, Collector.

SHEEP, CATTLE & HORSES
WILL be taken by us on Bingham Creek south to herd or raise on shares, at the usual rates, length of time immaterial with us. We shall prepare to feed our stock when necessary during the winter.
(7tr) BLAIR & BROTHER.

W. BALLAN,
WATCH-MAKER, respectfully informs the inhabitants of Great Salt Lake City and vicinity, that he intends carrying on his business in the house formerly occupied by A. L. Hale, North Temple st., 17th ward, and will warrant all work done by him to give satisfaction, as he understands his business in all its branches. Jewelry neatly repaired; charges very moderate.
43-tr

NAILS! NAILS! NAILS!!
D. SABIN has Machinery in operation for making all kinds of Nails to order. He will exchange Nails for Wheat, Corn, Potatoes and other Produce. Come on with it—now is the accepted time!
WANTED!—Tire and Band Iron, for which he will pay in Nails or work in his shop.
Encourage Home Manufacture!
44tr

NOTICE.
A. DOW, Copper, Tin Smith, and Plumber, will make Lift Pumps to draw from 50 to 60 feet, and Portable Garden Force Pumps to throw water 30 feet; also all kinds of Block Tin work, as soon as his Tools and Machines arrive from the Devil's Gate.
N.B.—All kinds of China and Queen's Ware neatly cleaned, &c., &c.
Emigration Street, 12th Ward.
52-3m

ON HAND AT
J. C. LITTLE'S Furniture and Car-riage Depot, 13th Ward:—Rocking, dining and children's chairs, tables, lounges, bedsteads, &c. Carriages manufactured and repaired. We are also prepared to paint carriages and other ornamental painting at short notice and for reasonable prices.
Also for sale an omnibus or band carriage, one spring carriage and a spring buggy, will take stock in exchange.
Lumber wanted.
3-3m

GRINDING, GRINDING.
THE undersigned would respectfully announce to the inhabitants of Tooele and the adjoining counties, that persons wishing Grinding done can be accommodated on short notice, all seasons of the year (as the mill springs never freeze) at E. T. Benson & Co.'s New Grist Mill, situated at Richville, 24 miles west from G. S. L. City, which is warranted to make as fine flour and as good a turn out as any mill in the Territory.
45-6m E. T. BENSON & CO.

CHARLES H. BASSETT,
AT Levi Stewart's Store, is my authorized Agent to settle my Land Claims of 1852 and 1853.

CAPT. W. H. HOOPER
Is authorized to settle all other Land Claims. Please call, gents, and settle, and save yourselves and us trouble.
2-3m S. M. BLAIR.

Brand Sheets! Brand Sheets!
NOTICE is hereby given that the Brand Sheets, now neatly bound, can be had by calling at the President's Office, price \$1 cash or wheat at cash price taken in payment. Persons having cattle estrayed, or those purchasing, will find it to their advantage to have the Brand Sheets by them for reference.
H. B. CLAWSON,
Recorder of Brands.
49tr

PHONO REPORTING!
PHONOGRAPHIC CLASS is now forming, and will commence on Thursday evening April 9, at seven o'clock, in the Seventy-first Council Hall, and will be continued two or three evenings a week for thirty evenings, or until the whole theory of the system of Phonetic Shorthand is exhibited.
Persons wishing to become members of the class are requested to give in their names without delay, as no one unacquainted with the rudiments of the science will be admitted after the second lesson has been given.
Gentlemen who have learned the first style of Phonography can become members on the eighth evening, and those who have acquired a knowledge of the second style should be present to receive the 15th lesson.
Terms: \$5 in advance.
4-6 J. V. LONG, Reporter.

Cows, Sheep and Herding.
I AM now keeping a herd at Santaquin (or Summit creek) and prepared to take cows and sheep on shares, or any kind of stock to herd, both summer and winter, and to make myself responsible for all losses sustained by neglect or mismanagement. I will give one half the butter, cheese and increase from cows; and one half the wool and two thirds the increase from sheep, and will deliver without expense the butter, cheese and wool as it becomes due. Our range for stock, both for summer and winter, is unsurpassed in the valleys of these mountains. Those in or near G. S. L. City having stock to let or to be herded can inquire of or leave their stock with D. T. Le Baron, Mrs. A. W. Babbitt's residence, G. S. L. City; and any one desiring to trade sheep for good work oxen can by him be accommodated.
6-4 B. F. JOHNSON.

LOST, STRAYED, &c.

STRAYED,
FROM Great Salt Lake City, about two months since, a Bay MARE, 6 years old, branded with a fish hook on the left shoulder.
Whoever finds and delivers the above animal to me shall be liberally rewarded. 8-2 JOHN SPROUSE.

STRAYED,
AT GARDNER'S MILL from the subscriber, on Dec. 17, one dark bay HORSE—no brands; and one sorrel HORSE, white face, belly and legs—branded J on right hip; both heavily shod; 8 or 9 years old. Any information concerning their whereabouts will be thankfully received by
CHARLES HOLLEY.
43tr

STRAYED,
A **SORREL PONY**, thick heavy set, branded on the left hip with a Spanish brand, on the left shoulder small N, a streak of white in his face. Also, a cream colored Mare PONY, with dark mane and tail. Any person finding those animals and will bring them to the residence of William Nowell, 17th Ward, G. S. L. City, will be amply rewarded for their trouble.
5-3m

STOLEN OR STRAYED:
ON the 10th inst., a small Bay MARE, star in her face, very spirited, branded on the hoof, BEEKSTEAD; on the near hip, J. G. Other brands not remembered.
Also some time ago, one large dark Bay HORSE, 3 feet white and strip in the face, also white or glass eyes. These animals are both well known on the west side of Jordan. Whoever will bring them to me shall be well rewarded.
8-2 SAMUEL MULLINER.

STRAYED,
DURING Conference, from Little Cottonwood, near the State Road, on the 6th of April, 1857, Two OXEN, one a brindle ox with high horns, branded W on right shoulder, barely visible, and the other a red ox, with white face and red ring round the eyes and small handsome horns, also branded W on right shoulder; he is a small animal, considerably less than the brindle one. Any person finding the above, who will inform the subscriber of their whereabouts, or will deliver them to him shall be handsomely rewarded for all trouble.
GEORGE MASON,
Springville city, Utah co.
8-3

ESTRAVS.
I HAVE in my possession the following:—
One red four year old STEER, no marks or brands visible.
One red and white four year old STEER, branded S D on the right hip.
One STEER, pale red, three years old, no marks or brands visible.
One black STEER, brockle face, three years old, crop off the left ear, and under bit in the right.
One red three year old STEER, blue back, white face; no brands or marks.
One black and white four year old COW, branded on the left hip, crop off the right ear, and a swallow fork in the left.
One three year old brindle HEIFER, branded on the left hip, brockle face, half crop in right ear, and hole in the same.
One red, line backed COW, seven year old, half crop off the right ear, and crop and slit in the left.
One red three or four year old COW, crop off the right ear, under bit in the left.
One red COW, four or five years old, with some white spots on her, branded on the left hip, underbit in the right ear.
One two year old red HEIFER; no marks or brands visible.
JOHN THOMPSON,
Pound-keeper, Ogden City.
8-2

MORMON BATTALION!
SOLDIERS—or their legal heirs who have not received the travel pay and subsistence due them from the U. S. Government can obtain the same by making application through
51-3m W. H. HOOPER.

ADMINISTRATORS' NOTICE.
THE Undersigned having been appointed by the Judge of probate for Weber county, administrators of the estate of Daniel Birch deceased, hereby notify all persons knowing themselves indebted to said estate to come forward without delay for settlement; and all persons having claims against said estate will please file them with James Brown, administrator, on or before the first day of June, A.D. 1857.
45-4m JAMES BROWN, { Administrators.
JAMES BIRCH, }

ADMINISTRATOR'S NOTICE.
HAVING BEEN APPOINTED ADMINISTRATOR of the Estate of Thomas Tennan deceased, by the Judge of the Probate Court for Great Salt Lake county, the undersigned hereby requests all persons knowing themselves indebted to said estate, to come forward without delay and cancel the same, and those having demands against said estate will please file them with the Judge of the aforesaid Court, properly authenticated, as soon as circumstances will permit and within the time specified by law.
44tr DANIEL SPENCER, Administrator.

DISSOLUTION.
PARTNERSHIP heretofore existing between Levi Stewart, William J. Stewart, Louis P. Drexler and Wm. Sloan, under the name of Levi Stewart & Co. is this day dissolved by mutual consent. All persons holding due bills against us, or knowing themselves indebted to us, also to Levi Stewart and Brother, are requested to call and settle immediately and save costs.
LEVI STEWART will continue the business at the old stand, where he hopes to merit a continuance of patronage from his old customers.
WANTED.—Mules, wheat, and oats. 51tr

ADMINISTRATORS NOTICE!
THE undersigned having been appointed by the Judge of Probate for Great Salt Lake county Administrators of the Estate of A. W. Babbitt, deceased, hereby notify all persons knowing themselves indebted to said estate to come forward without delay for settlement; and all persons having claims against said estate will please file them with the Hon. Elias Smith, Probate Judge, on or before the first day of June, A.D., 1857.
JULIA ANN BABBITT,
W. H. HOOPER,
BENJ. F. JOHNSON,
Administrators.
Great Salt Lake City, Dec. 29, 1856. 42-tr

DISSOLUTION OF COPARTNERSHIP.
PARTNERSHIP heretofore existing between Wm. H. Hooper and Thos. S. Williams, merchants of G. S. L. City, doing business under the name and style of Hooper & Williams, is this day dissolved by mutual consent. Wm. H. Hooper having purchased the entire interest of Thos. S. Williams is alone authorized to receive and receipt for the debts due the late firm. All debts of the firm to be paid by him.
All persons knowing themselves indebted to the late firm are hereby respectfully and earnestly solicited to call without delay and pay or adjust their accounts. Mules, oxen, cows or young stock will be taken in payment, but it is a matter of importance that all debts owing should be paid this spring.
G. S. L. City, Feb. 24, 1857-51-3m W. H. HOOPER.