AGRICULTURAL PAPERS.

A SERIES PREPARED ESPECIALLY FOR THE "RECORD-UNION."

Presenting Instruction Contained in Lectures from the Chair of Agriculture, State University.

[EIGHTEENTH PAPER.]

Although the number of different kinds of soils, all differing more or less in origin, location, composition and fertility, may be said to be legion, yet it has been found necessary to classify them according to their origin and composition, in order that the agriculturist may be able to distinguish with greater or less precision between at least the different classes of soil. This definition and classification has, however, been of the most general kind, as it is practically as impossible to truly denominate every particular soil as it is to define with accuracy the exact differences and the causes of the peculiarities of the different soils. Soils are divided, according to their mode of formation, into sedentary and transplanted soils. These last are again divided according to their mechanical composition, mainly into drift, alluvial and colluvial soils. Sedentary soils are those which have remained in their place of formation; i. e., they have not been transported at any previous time by water or any other agency, but instead remain as a covering over or near the rocks by whose disintegration they were formed. As one would suppose, these soils, especially the lately-formed ones, are generally shallow and of a correspondingly transient fertility. Their proximate composition may be ascertained by an examination of the rocks from which they were formed. Such an inspection enables

THE EXPERIENCED AGRICULTURIST

To judge quite correctly of their probable productive resources. As compared to the transported soils, the sedentary ones may be said to be not abundant. They are therefore neither as generally understood, nor, owing to their common "weakness" or shallowness, as eagerly sought for by the farmer as the transplanted ones. The name transported soils describes their formation. They are made up of materials which have been transported from a greater or less distance by the action of running or frozen water, and deposited as a surface layer in their present positions. The soils of all our river valleys and most of our fertile plains and prairies have been thus formed. Drift soils are those which are formed by the deposition of the coarser material of the river and by the sediment left by melting glaciers. They, therefore, often consist of many different grades and sizes of mineral matter and rocks. Especially is this so of those formed by glacial depositions. Such soils were formed without any stratification or separation of parts, and consist of particles of soil matter ranging in size from free sand to immense masses of cohering material, interspersed with the proverbially undesirable bowlders. The formation of drift soils by glacial action is at the present time going on in those regions where elevated portions are in the temperature of perpetual snow. In these drift soils there are sometimes different grades of materials, as, for instance, on the lower edges they are made up of finer material which was carried out toward the edges of the mass by the melted water, their successive depositions forming soils of different grades of fineness in the immediate vicinity of the principal soil mass.

ALLUVIAL SOILS

Are those which have been transported by running waters to a sufficient distance, so that the mineral and rocky matter has been rounded by friction and worn down to a state of fine comminution. From the fact that the carrying capacity of running water depends, other things being equal, upon the size and lightness of the matter in suspension, it will be readily seen that we must have numerous grades of even alluvial soils. From this fact, too, arises the stratification or layering of the different grades of material. The heavy and coarse material is deposited soon after leaving the canyons, and forms beds of stone and gravel. These are followed by beds of somewhat finer materials; below which, in turn, the coarser sand and finely divided mineral matter are lodged; while the finely comminuted rock, with the clay, etc., advances a step further into the valleys and forms the fertile river bottoms; so that when the water washes the delta or mouth it generally carries only a relatively small amount of matter in suspension. This is composed of rock powder and other impalpable material which will float in the water as long as it is in motion, and it is only deposited in the basins or settling reservoirs. The alluvial formation has been going on ever since the formation of the earth's crust, and it is as continually and quite perceptibly taking place at the present time. This action goes on wherever running water has access to mineral and rocky matter which is subject to decomposition and disintegration. By the term alluvium, then, is meant the finer materials, and which make up the bulk of the soil of our most fertile valleys, and which are

THE LATER DEPOSITIONS OF THE WATERS.

When we remember that the more finely divided are the rock and mineral matter which make up the soil, the more readily do the natural liquid solvents act upon the nutritive inorganic matter contained in them; the more readily do the roots, light and air penetrate the soils; and the more readily are those physical conditions fulfilled which best promote the chemical formation of plant food, and hence the growth and development of plants, we can at a thought conceive why the river soils are more productive than those on high table lands. But we are only speaking of the mechanical qualities of the soil, and must leave the question of fertility for some other time. Lastly, the colluvial soils are a mixture of drift or alluvial matter with particles of rocks and minerals, the edges of which have not been rounded by friction, and hence could not have been transported to any great distance. Such soils may be said to be made up of sedentary matter, mixed with more or less drift and alluvial sediments. In speaking of soils, the farmer denominates them according to distinctions based upon their obvious or external characters. These distinctions are generally based upon their seeming relative physical composition, and are hence not always scientifically correct, but are nevertheless of much practical benefit, and could not be easily dispensed with. For instance, the farmer in speaking of soils would, according to their appearance and apparent relatively preponderating ingredient, call them gravelly, sandy, clayey, loamy, peaty, etc. These terms, while not conveying with them an exact knowledge of the compositions, would still convey a very distinct impression of the general characters of the respective soils, or at least of their distinctive features.

THE AGRICULTURAL CHEMIST

In his investigations finds it necessary to know the proximate mechanical composition of the soils, and for that reason it has been desirable to make mechanical analysis of soils. Until quite recently these analyses have only been made with difficulty, and with no very great degree of accuracy. It has been found extremely difficult to secure the finer grades of material in their proper places. This was due to a flocculation of the finer particles of soil matter, which was caused by the secondary currents in the separating vessels. But of late agricultural chemists, and especially Professor Hilgard, of our own University, have overcome this difficulty, and mechanical analyses are now made with almost as much satisfaction and accuracy as chemical ones. We have not the space to describe the apparatus used by Professor Hilgard, but can only say that use is made of the hydraulic power of water in separating the different grades of material. By regulating the hydraulic power of the stream as many grades of material as is desired can be secured, and each of a known hydraulic value; that is, each grade carried off by a known rate of ascent of water in the cylinder. When by mechanical analysis the different sizes and relative quantity of each grade of material in the soil is ascertained, we can, by comparison with other soils of a known mechanical composition and fertility, arrive at a quite accurate opinion of the agricultural value of the soil. Soils are, according to their composition, divided into gravelly, sandy, clayey, loamy, etc. But after we have by mchanical analysis determined the class of the soil, we know nothing definite of the general quality of the soil, which can not be correctly judged of unless we take into account all of

THE PHYSICAL CONDITIONS

Surrounding the location of the soil—drainage, subsoil, temperature, moisture, etc. For instance, simple gravel is, as a general thing, almost useless, but there are many gravelly soils which are extremely fertile. These soils contain sufficient fine material to furnish the nutriment required by the crops, while the gravel and coarser matter keep the soil in a loose condition, facilitate drainage and absorb and store the heat of the sun. This gravel, too, if of a mineralogical nature containing material for plant food, is often undergoing slow decomposition, and thereby adding to the nutritive resources of the soil. Next to the chemical composition, the physical character of the soil is of most importance to the farmer. By the term physical character we mean the mechanical arrangement of the particles of the soil, with their relation to each other and to air and water, and the effect produced upon them by the sun's heat. Under the physical properties of the soil we include: 1. Their weight. 2. State of division. 3 Hygroscopic power, i. e., absorptive power for vapor of water. 4. Condensing power. 5. Power of appropriating solid matter from solutions. 6. Capillary power, i. e., permeability to liquids. 7. Changes in volume of drying, etc. 8. Adhesiveness. 9. Relations to heat. (1) The farmer, in speaking of heavy and light soils, has reference rather to the ease with which they are tilled than to the absolute weight of the earth. To him a sandy soil is light, and an adhesive, clayey soil is stiff or heavy. But soils generally bear exactly the reverse relation when we come to speak of their absolute weights. A cubic foot of sandy soil will weigh from one-quarter to three-fifths more, according to the amount of sand in it, than the same amount of clay soil. In general

SANDY AND ROCKY SOILS

Are the heaviest; and peat and mold soils the lightest, with clayey soils a mean between the two extremes. For practical purposes we consider the soil taken to a depth of one foot over an acre in area to weigh from three to four millions of pounds. When the specific gravity of a soil is mentioned the ratio between the weights of like volumes of the soil and water, is meant. (2) The degree of fineness to which the particles of the soil are reduced is of the utmost importance. This may be practically demonstrated by crushing a piece of feldspar or granite to several grades of fineness, and then sowing seed upon the different grades of material. The solid rock would support nothing except perhaps a few lichens; the coarse powdered rock will grow plants a foot or more high; and if seeds be planted in very finely powdered granite or feldspar, cereal grains may be made to mature seeds in it. It is evident, then, that upon the fineness of the soil, other things being equal, depends the amount of available plant food. This is due to the fact that the more finely divided the soil particles are the more surface is exposed, and the more readily are the inorganic ingredients of the soil acted upon by the natural solvents, and the nutritive matter is correspondingly easier secured by the plant roots. The ancient agriculturists used to hold that the plant was nourished by imbibing particles of the soil, which, entering by the pores of the roots, directly fed the plant. They therefore advocated

EXTREME COMMINUTION OF THE SOIL.

Their motto was to plow, and keep plowing as often as the ground could be got over. Their practices were of course followed by improved results and their conclusions were none the less true, even if their methods of arriving at them were false. Another fact in favor of finely divided soils is, that they present much more surface to the roots of plants, and when not too compact, furnish a larger amount of food than a coarser grade of the same quantity of soil would do. Special properties depending on the firmness of the soil will be discussed in the proper place. (3) Upon the hygroscopic moisture of a soil depend both the security of plants from scorching by the sun's heat, and much of the ability of the soil to accumulate nutritive materials from the atmospheric air. The hygroscopic coefficient of a soil is determined by exposing it in an atmosphere saturated with water vapor at a given temperature, and noting the per cent. gained in weight by absorption of the water vapor. As a general thing, the hygroscopic coefficient decreases as the coarseness of the soil particles increase. Sand has a very small hygroscopic power; clay soils have a much greater hygroscopic coefficient; fine carbonate of magnesium a still larger, and humus the greatest of all. It has been proven beyond a doubt that plants do not need a large amount of moisture in the soil in order that they may thrive, providing that the permanent water of the subsoil is reached by the water-roots of the plant. Plants have been grown to successful maturity by inclosing the crown and food-roots in a jar of perfectly dried soil, and with only the water-roots reaching the moisture below, which were immersed in a vessel of water and had access, therefore, to a constant supply of water. When

THE CONDITIONS OF GROWTH

Were changed by watering the soil, with the top root still reaching to the water below, no improved results were obtained. This showed conclusively that all of the water necessary could be furnished by the water roots, and from a considerable depth below the surface. From this we know that plants will grow in a soil which is destitute of perceptible moisture to a depth of some feet, providing only that the roots can penetrate easily down to the permanent water of the subsoil, and that the soil contains enough hygroscopic moisture to prevent the surface roots from being injured by the heat of the sun. Sandy soils, upon which the crops inevitably "burn up," may be reclaimed by admixture with a liberal amount of vegetable matter, which, forming humus in the soil, provides it with sufficient hygroscopic power to absorb enough moisture to prevent the heat of the sun from accumulating in the surface soil. The addition of fine marl and clay will have the same effect, but as their hygroscopic coefficients are less than for humus, the benefits derived will not be so great relatively. We thus see that it is in the power of the farmer to a certain extent to remedy the barrenness of his sand-field, providing that it contains sufficient nutritive matter to furnish plants with the necessary materials for growth. (4) The condensation of gases by the soil and other bodies depends upon the attraction of the particles of the condensing surfaces for the gases. An adhesive power is exerted upon the gases or vapors which overcomes their exhaustive power and causes them to settle on the surface of the condenser. This adhesive or

CONDENSING POWER OF THE SOIL

Is accompanied by chemical changes which essentially change the composition of the condensed gases. We know that putrefying bodies, when covered with earth, soon lose all offensive odors. The same effect is produced by covering with powdered charcoal. Under such physical conditions decomposition gives rise to the same products as would be generated by rapid combustion—water, carbonic acid, nitrogen and ammonia. In other words, the condensed oxygen of the pores of the earth and charcoal combine much more quickly with the putrefying matter than would ordinary atmospheric oxygen. The simple explanation is that odorization takes place so quickly as to prevent the formation of the offensive gases. Most porous bodies possess the oxidizing power, and in degree according as their condensing power is greater or less. There are probably no soils which do not contain some extremely porous ingredients, and hence all soils must be the theater of chemical changes brought about by intense oxidation. The provident dog, in unearthing his buried meat, most probably appreciates its "sweetness." Garments which have been rendered unbearable by too close proximity of the skunk, are likewise sweetened by being buried in the earth for a few days. The earth-closet system could not be tolerated did not the earth neutralize the disagreeable odors of the excrements. When we can trace so many common phenomena to the condensing powers of the earth, we are assured that many changes of like nature are taking place in the porous recesses of the soil, and which must very materially affect its nutritive and fertile powers.

THE QUIET HOUR.

The Tangler's Curious World of Puzzles, Charades, Enigmas, Etc.

THE EVELYN PRIZE.—Some time ago one of our lady contributors offered a prize for a word of five syllables to be spelled with the fewest letters. These have been submitted: Hattie Heath, x, p, d, n, c, (expediency); Jenny Burns, O-ce-an-i-ca; Mollie S., x, p, d, n, c; E. D. Adams, oratorio; H. E. P., De-i-o-pi-a, oratorio and Cin-cin-na-ti-an; Rose, N, N, X, D, R (double entender); Quiz, c, m, 1 (sea anemone); Lizzie B. Stacy, Areopagy; Merle, I-o-la-i-a; Trinity, Ox-y-o-pi-a.

Answers to April 29th.

1336. Puff, Abel, so-so, stew, isle, over, ness (passion flowers);

1337. Bianca, treats, tamtam, reared, lissom, neater.

1338. Eat, ate, tea.

1339. Pye, eye, rye.

1340.
A
ANS
BOATS
CONDOLE
BERRY
SOY
N

New Tangles.

1346. Enigma, by Gus:

I am composed of ten letters, two of which are repeated.
My whole is a method of measurement.
8, 3, 6, is a nickname.
2, 5, 4, is tropical.
1, 2, 5, 8, 3, is the "short" for a picture.
6, 7, 4, 3, 9, is a measure that all nations should adopt.
1, 3, 7, 4, 9, 10, has been termed the music of the soul.
1, 2, 5, 8, 3, 6, 7, 4, 9, 10, is exactly like my whole.

1347. Dropped words, by Myrtle:

My Dear (county in Iowa): A (lake in Canada) time has elapsed since I last wrote to you. I believe not since the (island in Pacific) before last (island in Pacific). However, you will excuse my long silence, I know, when I tell you the reason of it. Sister (river in Siberia) is, as you know, an inveterate traveler, and on her last trip, prevailed on me to accompany her. We hurried along from place to place, not pausing long enough to breathe comfortably, I thought, much less to write nice (island in Pacific) letter, until I could stand it no longer, being rather (county in Tennessee), as you know, consequently, left sister to go on alone, and came home. Have I not been a (island in Gulf of California)? Here I am, in my own (valley in El Dorado county) room, with the closed (county in Wisconsin) shutting out all the cares and troubles of the world. I should be (island in Pacific) in this big house this morning, were it not for the presence of my (one of the Bahamas), for (islands in Pacific). I imagine you consider her rather (island in Pacific) company, do you not? I wish you could (county in Wisconsin) and see me and my surroundings. I have several new articles. I would like to show you, among others, a new (county in Kansas) case, in which is a beautiful (river in Mississippi) ring, a (city in Idaho) necklace, and a (springs in El Dorado county) cross; also, I have lately had given me a very odd new (county in Illinois), which is considered very handsome. During my travels I made some additions to my cabinet; some specimens of (county in Minnesota); a piece of county in Wisconsin) ore; an Indian (lake in British America); two models of Indian (Point in Lower California); a tooth of a (channel in Gulf of California); an Indian (lake in British America); also some other curiosities, which, if my informant is (county in Iowa), are (county in Iowa) more than all the rest; one of these is the (county of Illinois) of Geo (Territory of the United States); one the (city of Ireland) drawn from a bottle of (county in Ohio), which was opened at a state dinner given during the Administration of President (county of Kentucky); another is a (county in Kentucky), which is said to have pierced the (county of North Carolina) of a (city in New York). To my great (cape on Pacific coast), I lost a (county in New Mexico), who belonged originally to (an island on Pacific coast); it was sent by a (island in Irish Sea), who was unknown to her personally, but who, by the artful (cape in Australia) in his letters, so insinuated himself into her (county of Kentucky) that all thought of (an island in Pacific) was forgo ten in the excitement of the secret correspondence. Yet, it seems to me, she must continually have been a (lake in British America) to terror, from (cape in North Carolina) of the discovery which must certainly come. I must stop to kill this (bay of British America) which annoys me so. There, the deed is done. He lies (county in Ohio) and (sea in Asia) on the (county in Virginia) before me, and I pause to wonder whether (lake in Iowa)—if he has one—has winged its flight to (river in Colorado) or to (valley in California)? Who is (county in Virginia) enough to tell? On the (county in Ohio), either immediately after (lake in Minnesota), or just before (county in Ohio), I will bury the poor little thing, in the (county in West Virginia) near by, close by a small (county in Michigan) of the (county in West Virginia), under the sheltering shade of the (town in California), where naught may disturb his peaceful sleep save the sad song of the breeze sighing through the boughs of the (county in Minnesota) and the (county in Missouri). I hear mamma, who has come home while I have been writing this epistle, calling "Dinner," so I must stop, apologizing for my abruptness in closing by the reminder that, as you are aware, mamma never allows us to be tardy at dinner.

Ever your friend, CAPE IN NEW YORK.

1348. Charade by Augusta Blake, dedicated to Trinity:

I think a verb will foremost spell,
A shrub in rear, not parallel.
In whole the vile assassin lies
To take his victim by surprise.

OPENING OUR EYES.—We educate our children, as the saying goes, but they also do much for us in the same way. They open our eyes and "hold a mirror up to nature;" indeed, I have sometimes thought that children have the "giftie gie us," and we see ourselves at least as they see us. A little boy said to his mother the night before Christmas: "Mamma, you and father are invited to my kindergarten Christmas tree; you are to come at 10 o'clock, but I"—this with a delightful air of importance—"I must go as early as 6, to fuss around like women." The mother to whom this was said thought with humiliation that the artlessly spoken sentence actually described her manner of doing things, and it induced a great many thoughts for which she hopes she is better. How much that we do has the appearance and really is worthy of no better title than "fussing around!" How much needless anxiety we give ourselves! There are few women who can move calmly forward about their work, doing the best they can, without fretting and bustling about in a way that disturbs the peace of the household. The average woman—as people are fond of calling all but the exceptionally great—might imitate the average man in this respect with great gain; for there are comparatively few men who do not learn at an early age that they cannot afford to be disturbed by every little unexpected disagreeable occurrence. We see clearly that it is an evidence of weakness in a man, and isn't it just the same thing in us?—[E. W. B., in New York Post.

Liver, Kidney and Bright's Disease.

A medicine that destroys the germ or cause of Bright's Disease, Diabetes, Kidney and Liver Complaints, and has power to root them out of the system, is above all price. Such a medicine is Hop Bitters, and positive proof of this can be found by one trial, or by asking your neighbors, who have been cured by it.

WHEN you are all played out be careful what you eat, but take Kidney-Wort.

OLD.

At six—I well remember when—
I fancied all folks old at ten.

But, when I'd turned my first decade,
Fifteen appeared more truly staid.

But when the fifteenth round I'd run,
I thought none old till twenty one.

Then, oddly, when I'd reached that age,
I held that thirty made folks sage.

But when my thirtieth year was told,
I said: "At twoscore men grow old!"

Yet twoscore came and found me thrifty,
And so I drew the line at fifty.

But when I reached that age I swore
None could be old until threescore.

And here I am at sixty now,
As young as when at six, I trow!

'Tis true my hair is somewhat gray,
And that I use a cane to-day;

'Tis true, these rogues about my knee
Say "Grandpa!" when they speak to me;

But, bless your soul, I'm young as when
I thought all people old at ten!

Perhaps a little wiser grown—
Perhaps some old illusions flown;

But, wond'ring still, while years have rolled,
When is it that a man grows old?

—[Vandyke Brown.

A London medical officer, Dr. Gibbon, is authority for the statement that the Jews of London average twice as long a period of life as the Christians. Pulmonary consumption and scrofula are almost unknown among the Jews of the metropolis. Their children seem to suffer less from disease than do those of the English and Irish Gentiles in neighboring localities.

A new rheometer for measuring currents at different depths has been devised by Scardona. It acts by pulses generated at intervals, according to the speed of the current, in a tube, and affecting a bell. It is claimed to surpass Amsler's rheometer in simplicity as well as in its indications or signaling.

WOMEN that have been pronounced incurable by the best physicians in the country, have been completely cured of female weakness by the use of Lydia E. Pinkham's Vegetable Compound. Send to Mrs. Lydia E. Pinkham, 233 Western Avenue, Lynn, Mass., for pamphlets.

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Advertisements of five lines in this department are inserted for 25 cents for one time; three times for 50 cents or 75 cents per week.

FOR SALE—TWO HEADERS, RUN ONE SEASON; six header wagon beds. Inquire of J. H. FINLAY, Brighton, or J. H. CARROLL, 1016 Second street, Sacramento. m11-tf

TO LET—THREE FURNISHED ROOMS, SUITable for housekeeping for a man and wife. Apply at 1416 Seventh street, between N and O. m11-1w*

TO RENT OR FOR SALE—A PETALUMA HAY Press, in good running order. Truck and Scale with the Press. Inquire at this office. m10-2w*

TO RENT—TWO-STORY FRAME DWELling; 9 rooms; gas and bath; stable for two horses; carriage house, etc. Rent $15. Corner Sixteenth and M. Inquire of W. P. COLEMAN, 325 J street. m4-1m

FOR SALE—THE GROCERY BUSINESS OF M. J. KING, southwest corner Second and L streets. Will be sold cheap, as the owner wishes to retire, on account of ill health. Inquire on the premises. a29 1m

TEXAS LANDS FOR SALE—WE HAVE FOR sale over 300,000 acres of selected Texas lands, for farming and ranch purposes. Prices from $1 to $2 50 per acre. HOLT & WISE, Surveyors and General Land Agents, Abilene, Taylor county, Texas. References: Colonel Caleb Dorsey, Hon. C. P. Berry, M. C., and Christy & Wise, San Francisco. a28-4p3m*

FOR SALE—A COTTAGE HOUSE WITH lot, southwest corner Twenty-sixth and N streets; cottage in fine condition; lot, 80x160. Will be sold cheap and on easy terms. Apply on the premises. a26-tf

FOR SALE—A BARGAIN—A HANDsome, gentle family Mare and elegant side-bar adjustable canopy-top Buggy, with Harness complete; also, fine side-bar open Buggy. Inquire at 1212 Tenth street. a22 tf

SAWMILL FOR SALE—A SAWMILL LOCATED upon the line of the Railroad in Nevada, and upon the Truckee river, is offered for sale, or would be leased to a good practical man upon the most favorable terms. The mill is run by 140-horse water-power, and its capacity is 40,000 feet of lumber in twelve hours. One thousand acres of the finest timber land goes with the property. Apply to A. LEONARD, Sacramento. a17-tf

FARM FOR SALE.

FOR SALE—160 ACRES OF EXCELLENT farming and garden land, situated in Placer county, four miles southeast of Newcastle. There are on the place a commodious, hard-finished house, a fruit-house, a well of excellent water, plenty of timber, 9 acres of orchard, 3 acres of vineyard, all varieties of berries, etc. Title perfect. For particulars inquire of BERRY MITCHELL, Newcastle. m5-1m*

FOR SALE.

REAL ESTATE

OF THE LATE R. T. BROWN, DECEASED.

TWO-STORY FRAME DWELLing, containing 9 large rooms, bath, closets and gas. Lot, 160x160; terraced and seeded to blue grass, with choice shrubbery, etc. Will be sold for low price of $3,000
ALSO—Lot 30x160, Eleventh street, between C and D 300
Lot 80x160, northwest cor. Fifteenth and E 500
Lot 80x160, M street, between Eighteenth and Nineteenth 950
South half of Block, O and P, Thirtieth and Thirty-first streets. Full Block, N and O, Thirtieth and Thirty-first streets.
☞ Any of the above property will be sold on the installment plan. Apply to

SWEETSER & ALSIP
Real Estate and Insurance Agents, No. 1015 Fourth street, Sacramento. m9-1ptf

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—AND—
Restaurant Men,
ATTENTION!

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THE FIRST STORY is finished into an elegant Store, with Plate-Glass Show Window; fine large Dining-Room, Pantry, Kitchen with Range, Hot-Water Boiler, Scullery, Milkroom, Storeroom, etc.

THE SECOND AND THIRD STORIES are so arranged that they can be rented independent of the First Story.

A SPLENDID OPENING for any one wishing to start a First-class Restaurant, with Bakery and Confectionery attached; or any one wishing to Rent as a Family Lodging-house or Hotel. Apply to

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1015 FOURTH STREET, SACRAMENTO. a15-1ptf

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FOR HORSES AND CATTLE CAN BE had on the Rancho Guan Grant, north of the American River from Folsom. There is an abundance of good water, and premises are inclosed with new board fence. Terms reasonable. Apply to JOHN T. CARDWELL, Folsom, Sacramento county, Cal. a4-tf

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THE RENO ICE COMPANY, WHOSE PRINCIpal place of business is Sacramento City, at No. 819 K street, have

5,000 TONS OF ICE

Stored in their houses in the mountains. It is of the very best quality, made from the waters of the Truckee river. Being anxious to sell the same, they offer extra inducements to consumers, as the following prices will show:
Ice by the Carload ..... $7 per ton
Ice by the Ton, delivered ..... $9 per ton
Ice by the Hundred Pounds ..... 50 cents per 100 lbs
Ice Less than 100 lbs. Three-quarters of a Cent per lb
Will guarantee the above prices to continue. Orders left at the above place will be promptly attended to. Reno Ice Company.
a16-3p1m W. H. McINNIS, Agent.

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m3-4p1m

GENERAL NOTICES.

Murray & Lanman's Florida Water is probably the simplest and purest perfume ever made, being absolutely nothing more than the delicious fragrance of rare flowers, preserved and made permanent, and it is doubtless to this purity of composition that its immense popularity is in a great measure to be ascribed. m13 1t

Ichi Ban, San Francisco, doubled in size, is the largest Japanese sale exhibition in the world. SHATTUCK & FLETCHER export their printing inks to Japan, receive Japanese goods in return, and this is why Ichi Ban survives on low prices. Logical, isn't it? Wholesale and retail. Goods for every branch of retail country trade. m4-tf

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For Fine Cakes, Ice Cream, etc., the BEST AND CHEAPEST MEALS, go to HENRY FISHER, No. 508 J st., bet. Fifth and Sixth. m23-1m

If you want Furnished or Unfurnished Rooms, go to the best house in the city, Clunie Building, Eighth and K streets; kept first class in every respect. MRS. GRICE, Proprietress. m15-tf

Dr. La Mar's Seminal Pills cure all cases of Seminal Weakness, Loss of Vigor, Nocturnal Emissions, Impotency, Nervous and Physical Debility, and all that class of complaints arising from Excess, Indiscretion or Abuse. The old find in this remedy a fountain of youth, and the young a safeguard and protection. DR. LA MAR'S SEMINAL PILLS restore the sexual organs, debilitated from whatever cause, to their pristine vigor. Price, $2 50 per bottle. Sent C. O. D., by express, to any address, secure from observation. Address all orders to A. McBOYLE & CO., Druggists, Postoffice Box 1952, San Francisco. j13-3p6m

Forty years' experience of an old nurse. MRS. WINSLOW'S SOOTHING SYRUP is the prescription of one of the best female physicians and nurses in the United States, and has been used for forty years with never-failing success by millions of mothers for their children. It relieves the child from pain, cures dysentery and diarrhœa, griping in the bowels, and wind-colic. By giving health to the child, it rests the mother. Price, 25 cents a bottle. o31-1 MWS

Treat Your Teeth

Rather than have them pulled. Let your dentist save all he can. You desire to have trouble, because you have not used SOZODONT. When properly fixed, then rub on the SOZODONT, and keep them all right for time to come. m9-3tTuThS

HOTELS AND RESTAURANTS.

MISSISSIPPI KITCHEN.
OYSTER AND CHOP HOUSE,
Third Street, Between J and K.
NEXT DOOR TO RECORD-UNION office. Open day and night.
A. J. SENATZ, Proprietor.
a19-4p1m

HOTEL LANGHAM,
CORNER FOURTH AND L STREETS, SACRAmento—Strictly first-class, on the European plan.
T. D. Scriver's Carriages will take all passengers free of charge from Depot to Hotel.
a1-4p1m TERRY & CO., Managers.

UNION HOTEL.
SECOND AND K STREETS, SACRAMENTO, Cal. Rooms, 50 cents and $1 per day. Special rates by the month. Billiards, choice liquors and cigars. Hot lunch daily from 11 A. M. till 2 P. M.
a1-4p1m W. O. ("JOE") BOWERS, Proprietor.

STATE HOUSE,
Corner Tenth and K Streets, Sacramento.
H. ELDRED, PROPRIETOR—Board and lodging at the most reasonable rates. Bar and billiard rooms attached. Street cars pass the door every five minutes.
☞ Free omnibus to and from the House. m16-4p1m

GOLDEN EAGLE HOTEL,
CORNER SEVENTH AND K STREETS SACRamento.—First-class in every respect. The Largest, Finest and Best-Ventilated Hotel in the city. RATES—$3, $2 50 and $2 per day, according to room. Free Bus to and from the Hotel.
J. McNASSER (late of Denver), Proprietor.
fe4-4p1m

HELVETIA HOUSE,
FIFTH STREET, BETWEEN J AND K, SACRAmento—Good board and lodging.
X. HOLDENER and J. GEMSCH, Proprietors.
☞ Farmers and Dairymen can always find good milkers and butter-makers at this house. fe16-4p1yr

MRS. G. N. LEVY,
FORMERLY OF 1008 EIGHTH STREET, IN this city, begs leave to inform her Sacramento friends and acquaintances who contemplate visiting San Francisco during the summer season, that she is prepared to accommodate them with the best of table board and lodging, at 1403 Van Ness avenue, between Bush and Pine. a29-2p1mTuThS

ICE!
WITH INCREASED FACILITIES, AND THE encouragement of a generous patronage already bestowed, the Capital Ice and Coal Company, of Sacramento, propose to continue their business at No. 1009 THIRD STREET, in the old, liberal and accommodating way. This HOME COMPANY was mainly instrumental in reducing the cost of ICE in this city from 3 cents per pound to the present low figure. They now offer at wholesale or retail, to families and others, PURE BOCA ICE, 14 to 18 inches thick, SOLID AND CLEAR AS CRYSTAL, at prices level with competing rates. The BOCA ICE is frozen on a small mountain stream fed by springs, and with no Sawmills, Breweries or Slaughter-houses above to charge the water with sawdust or more offensive and unhealthy matter. Daily delivery in quantity desired. Orders and season contracts respectfully solicited.
Capital Ice and Coal Co.
CHAS. SELLINGER, Manager.
OFFICE AND DEPOT:
Third street, bet. J and K, Sacramento
a15-2ptf

FARMERS,
Stop and Think!
DO YOU WISH TO MAKE OR SAVE MONEY You can buy a GRAIN MILL which will grind all your feed, with wind or horse power, for One Hundred and Twenty-five Dollars. It can be operated with man power, and do a reasonable amount of work. It grinds or rolls the barley or corn, crushing it into fine meal, if so desired, or simply crack it. This cannot be done with the stone or roller, for the one grinds but cannot roll, and the other rolls but cannot grind; but my mill does both, either grinding or rolling. The prices range from One Hundred to Three Hundred Dollars. The small size mill will grind any amount from one ton to twenty tons in twenty-four hours, according to the power applied, and the larger will go sixty tons per day. Total weight of small mill, 175 pounds; of large mill, 575 pounds. Address WM. C. STILES, Sacramento, Cal m17-2p1m

STEINWAY & SONS' PIANOS.
A. HEYMAN, SOLE AGENT, 1 street, bet. Sixth and Seventh, opposite Court-house. PIANOS TO LET. Pianos sold on installments. m9-3p1m

Hardware House
—OF—
CHAS. ZEITLER,
NO. 512 J STREET,
South side, bet. Fifth and Sixth, Sacramento.
JUST RECEIVED BY RAIL, FROM THE Eastern Markets: A Fine Line Ladies' and Gents' Pocket Knives, Ladies' Scissors and Shears, Corn, Budding and Pruning Knives; Kitchen, Table and Carving Knives; Mechanics' Tools, House Builders' Hardware, Mosquito Bar Wire Cloth, Rubber Hose, Lawn Mowers, Haying Tools, Grindstones, Novelty and Eureka Clothes Wringers, Manila and Sisal Rope, Twines, and a general assortment of FIRST-CLASS HARDWARE, all of which I will sell at the LOWEST MARKET RATES.
m11-4p1m CHAS. ZEITLER.

D. J. SIMMONS & CO
GENERAL AUCTIONEERS.
All classes Auction Business promptly attended to.
Office, No. 1013 Fourth st., bet. J and K.
fe7-4p6m

Marsters' Self-Feeder,
Awarded FIRST PREMIUM at San Joaquin District Fair.
MARSTERS' SELF-REGULATOR WINDMILL
("TEMPEST")—Awarded Sweepstake Premium at Fair, San Joaquin.
MARSTERS' IMPROVED STACKING DERRICK!
Awarded FIRST PREMIUM at San Joaquin Fair.
MANUFACTURED AND FOR SALE!
ORDERS ADDRESSED TO
E. J. MARSTERS,
a22-4p3m Stockton City.

MISCELLANEOUS.

SPECIAL SALE
OF A CONSIGNMENT OF
ELEGANT
IMPORTED
FRENCH
Mantelets
WHICH WE OFFER AT
Less Than Cost
OF IMPORTATION.
☞ CALL AND SEE THEM! ☜
S. Lihman & Co.
Fifth and J sts., Sacramento.
a11-3ptf

Union Brewery,
Twentieth and O streets,
SACRAMENTO.
THE BUSINESS OF THIS BREWERY HAS increased rapidly during the past year, owing to the FINE QUALITY OF BEER manufactured and the LOW PRICES maintained. New and improved machinery has been purchased, the proprietor does his own brewing, and gives the business the benefit of his personal experience, which enables him to outstrip all competitors. He invites the public to come and sample his Beer, and satisfy themselves that he sells a better article for less money than any Brewery on the coast. "Large sales and small profits" being his motto, together with "CASH ON DELIVERY." Beer delivered in any part of the city at the following prices:
FIFTEEN-GALLON KEG $3
TEN-GALLON KEG 2
FIVE-GALLON KEG 1
m3-3ptf JACOB GEBERT, Proprietor.

CRACKERS & CONFECTIONS!
H. FISHER, NOS. 508 AND 510 J STREET Sacramento, has just taken the Wholesal Agency of the CALIFORNIA CRACKER COMPANY of San Francisco. CRACKERS sold at lowest San Francisco prices, with difference in time and freight in favor of purchasers. Also, FISHER'S CHOICE CONFECTIONS, at lowest market rates. fe22-3p6m

A FAMILY BLESSING!
OROVILLE, Butte County, Cal., March 30, 1882.
HENRY K. FIELD, General Agent, New England Mutual Life Insurance Co.:
DEAR SIR: SAMUEL J. DAVIS, ex-County Treasurer of Butte county, died at this place January 3, 1882, leaving a widow and six small children. He left nothing for their support except the insurance on his life. He was a member of Oroville Lodge, No. 40, A. O. U. W., and his wife received from that Lodge $2,000. He also held a policy for $2,500 in the Company you represent, on which he HAD PAID NO PREMIUM FOR TWO YEARS, and which was BELIEVED TO BE WORTHLESS. However, on making inquiries of you, we found that the policy was on the
Non-forfeitable Plan of the New England Mutual Life Insurance Company,
And although the premiums had not been paid for some time past, yet the policy was good for $2,418 87, which sum Mrs. Davis has already received. This is a correct statement of the facts in this case, and it speaks louder in praise of the Company you represent than any other words we can use. Mrs. Davis has the money; it was paid promptly and with little expense to her, and it all came from a policy that was BELIEVED TO BE WORTHLESS. If coin "talks" it certainly should in this case, for she has it, and it came with the greatest possible dispatch. Very truly yours,
L. A. SIMON, Master Oroville Lodge, No. 40, A. O. U. W.; J. C. GRAY, WM. SCHNEIDER, ARCHIE McNEIL, E. HIGGINS, Past Masters; GEO. B. SPRINGER, Recorder; R. DE LANCIE, Treasurer Butte County; P. O. HUNDLEY, Superior Judge of Butte county.
☞ Before insuring in any other company or joining any co-operative assessment society, carefully examine the practical working of the Massachusetts Law of 1880, and read the policy contract of the New England Mutual Life Insurance Co.
G. O.