

FORESTS AND RAINFALL.

A correspondent of the San Francisco *Bulletin* from the foot-hills of Butte county advances the proposition that in the Sierra, where the original timber has been cleared off, a second growth has sprung up which has more than twice the retaining capacity for moisture of the first growth. From this he deduces that the alarm about the denudation of our mountain forests lands is unfounded. In fact, says the *Bulletin*, he attributes this theory mainly to the influence of the railroad company, which aims to get government rangers to watch its timbered grant lands.

Any one familiar with the methods of the railroad companies will accept the general suggestion that it would be prompt to avail itself of any plan for shifting its burdens upon the government or the public. Possibly there may be something in this idea, although it may look a little far-fetched. Yet it is understood that often it is necessary to scrutinize byways as well as highways to get at railroad schemes. Government rangers might not take it directly upon themselves to protect railroad timber, but indirectly their supervision of adjacent sections would tend to that result.

Aside from this, however, it may be admitted that our correspondent's views are partly right and partly wrong. The result would depend much upon local conditions. No doubt in many portions of northern California, where the rainfall, especially in the mountains, is abundant, a second growth would soon cover the ground after the clearing of the original forest. A like fact may often be observed in the redwood forests along the coast. There, where the annual precipitation is profuse and the climate and soil are naturally damp, the redwood tends to reproduce itself. In other localities the contrary appears. In the Contra Costa range, for instance, where the natural moisture is less, the clearing of the redwoods is not followed to any great extent by the appearance of a second growth.

The same will be found true in a greater or less measure of the forests of the Sierra and of other mountain ranges. Where any tendency to aridity exists it will undoubtedly prove true that the wholesale destruction of forests will not be followed by renewal, but by permanent denudation and climatic changes. It might be safer to destroy the original mountain forests in northern than in southern California. In the ranges of the interior states and territories, where aridity is more pronounced, it would be a most dangerous experiment. In such cases only a judicious thinning of the larger growth should be permitted on any conditions.

Even in moister regions it would be better economy to confine cutting to the larger timber, giving the smaller opportunity to mature. Instead of that the past policy has been to cut indiscriminately for lumber or fuel purposes and complete the destruction by sheep browsing and fire. It is time for a definite and intelligent system of forestry. It may be both preservative and reproductive in scope. In many portions of France forestry now includes not only the preservation of the

natural growth, but replanting on a large scale. In the latter work due attention is given to the species used. Medicinal and aromatic plants are included, and become commercially important. This may be somewhat in advance of present needs on this coast, but it indicates the tendency in countries where necessity has put the problem of forestry more forcibly before the people. We can afford to take lessons from the larger experiences of these European countries. By avoiding their past errors we may also avoid some of their present necessities.

SOME ROYAL BON-VIVANTS.

The czar of all the Russias has a gigantic appetite, or rather the appetite of a giant. He commences the day by breakfasting at seven o'clock with tea, ham, eggs and cold roast beef; at 11 o'clock lunch, consisting of eggs beaten up in broth, mutton chops, cold game, chicken, fish, vegetables, sweets, all washed down with several cups of strong coffee. The czar is very fond of fish, and generally likes to eat the fish he himself has caught, and has it served at every meal. At 2 o'clock he will eat a plain rice pudding. It is needless to say his dinner is splendid and succulent, which does not prevent him taking tea with biscuits and cakes before going to rest, says the *Brandon Banner*.

The queen of Sweden adores the meat pies made in Nice, with olive oil and hard-boiled eggs, and is very fond of the Swedish national dish—salmon preserved in the ground.

His imperial majesty of Germany is very difficult; but, having often been in England in his youth has a decided taste for ham and eggs and muffins, which, on dit, he gets direct from London to eat with his tea in the morning, and prefers English to German cooking. His majesty's favorite drinks are beer and champagne, but it must be said that in this latter he is most abstemious.

Prince Bismarck, like the Czar, is an enormous eater, but eats little in the morning, reserving himself for dinner at 7 o'clock in the evening, when he devours, like an ostrich, meat, fish, vegetables, sweets, fruit, etc.; he also drinks like a fish. *Uno avulso, non descoi alter*.

The Empress of Austria occupies herself personally with her menu, and to be practical she has invented a spit where 100 fowls can be roasted at once. Both she and the emperor eat little, but the table is the best served in Europe; and it is said her majesty makes all the jams for her husband's eating.

Louise Philippe, king of the French, was not a great eater, but his son, the duc d'Aumale, is abstemious itself, even at Chantilly, where Louis XIV's family chef committed suicide.

Prince Jerome Bonaparte was a great gormand, while Napoleon III had the worst table in France, but the best cigars, of which he was very proud. Gambetta made his best speeches after a good dinner. President Carnot has the best table in France, the stomach of an ostrich, and, consequently, must have a clear conscience and good teeth.

The king of the Belgians is a noted

gormand, that being reckoned among his other vices.

The king of the Hellenes likes Danish cooking, Queen Olga likes Russian, and as these do not please everybody, French cookery is added for their guests.

King Humbert of Italy eats but little, contrary to his father il regali-antuoimo, who was a born viveur in every sense of the word; Queen Margherita is the only royal gormand the fair sex can boast of; she is said to have a plate of strawberries served her every day during the year.

SWEET MILK.

[Transcript.]

In the sultry days, when every housekeeper's soul is more or less tried by the tendency of the milk to "turn," the department of agriculture at Washington comes very opportunely to the front with a "bulletin" on milk fermentations. No other article of food, probably, bears so close a relation as does milk to the health of the community, especially when we consider that it forms the principal part of the sustenance of that large fraction of the population—the young children. The importance, therefore, of keeping the supply not only pure, but in good normal condition, will be denied by none. Some of the results of the very careful investigations of the department, though made primarily in the interest of farmers and dairymen, are of universal interest.

Milk, which is composed of eighty-seven per cent. of water and thirteen per cent. of solids, is found to be one of the best of mediums for the propagation of various low forms of plant life known under the general name of bacteria. Many of these forms are so widespread and numerous that it is hopeless to try to keep them out; they may all, however, be kept within limits, while those producing abnormal fermentations in milk may be altogether prevented by proper care. Milk fermentations are of many kinds, the most common one being known as "sour milk;" others, such as bitter milk, slimy fermentation, alkaline fermentation, etc., are not of as frequent occurrence. Souring, once regarded as a characteristic of milk itself, is now generally admitted to be a fermentative process produced by organisms which get in after the milking is done.

One of the singular results of investigation is the fact that the special forms of bacterial activity producing lactic acid (and thereby "sour milk,") become common around dairies, but are not elsewhere in nature. Lister, following up the researches of Pasteur, found that sterilized milk exposed to the air in different places—in his laboratory, in a barn, in the open air, etc.—would ferment after a while, but not sour, and that souring was rare except in milk direct from a dairy. All organisms producing fermentation in milk are of exterior origin—from the air, the milker's hands, the hair or udder of the cow, or the vessels used. This makes plain the prime necessity of cleanliness in all the operations of the dairy; "one should make as careful a toilet," says a dairyman, "for the milking yard as for the supper table." In the support of this the statement is made that if the udder of