

## Horticulture

however, to exhibit little or no relationship to the true fungi, except that, like the latter, they are devoid of chlorophyll." Our readers must bear in mind that chlorophyll is what causes the green color in plants. Neither the fungi nor the bacteria have any green in their color. The manner in which the bacteria multiply is clearly explained by Percival on pages 749 and 750 of his great work as follows: "The method of vegetative reproduction, which is so characteristic of the whole group of bacteria and which has given rise to the name splitting fungi, consists of a simple division of each cell into two similar halves, each of which afterwards grows to an adult state and then repeats the process." Now this all takes place in the sap and in this way the proper nourishment is cut off from the leaves and they turn black. So we may know of the presence of pear blight by the sap and bark being affected. Ultimately a fungus attack may show in the coloring of the twigs but in the earlier stages nothing of the kind will appear. Spraying will not do any good in such bacterial attacks for being carried on in the sap the seat of the disease can not be reached. Nothing can stop pear blight but the cutting off of the affected parts and their destruction by burning. For these reasons pear blight is much more serious than most of the fungus attacks. The wonderful rapidity with which bacteria will multiply increases the danger. Percival says: "Under the most favorable circumstances many bacteria divide once or twice in an hour, so that a single specimen multiplying at the latter rate, for even a day, would give rise to several millions of new individuals." I may say for the encouragement of pear growers that some of our Anjou pear trees have had the same fungus attack that our neighbor thought was pear blight for several years with very little injury.

### NITROGEN IN WATER

Sometime since J. W. Hamilton, of St. Paul, Minn., raised the question whether rain water ought not be more valuable than irrigation water, owing to the fact that valuable fertilizing materials come down in rain and snow. I explained my position in these matters. Mr. Hamilton has sent me some valuable papers prepared by those who operate the Central Experimental Farm near Ottawa, Canada in which it is shown that during twelve months "the amount of nitrogen in rain and snow at Ottawa was 4.323 lbs. per acre." This is slightly in excess of the amount of nitrogen per acre shown at Rothamstead, England, during a period of 13 years. I wish to say that I have in my possession and have had for a number of years, the reports of the observation made at Rothamstead by Dr. Miller. I would say that if any one is interested in this matter he can not do better than to secure a copy of a valuable work entitled "The Soil" by F. H. King. Now let it be distinctly understood that I have no controversy with any one as to the fact that rain and snow bring down to the earth nitrogen in the form of ammonia and nitric acid. But the amounts are small compared with the needs of plants. Prof. King shows this in the book above referred

to. The amount of ammonia in the atmosphere is one part in 28,000,000 parts of air.

It is assumed by Mr. Hamilton that this small amount of available nitrogen would be lost by the water running from the mountains to the irrigation ditches. But there is no proof of this. While flowing water tends to the loss of its heavy particles of matter there is no proof that it loses anything that is lighter than itself. Ammonia is a gas and will flow on for many miles in the water with which it is mixed. It is well known that some men claim that irrigation water is very much richer in fertilizing materials than rain water. Sometimes that is the case and sometimes it is not. Then it must not be forgotten that ammonia of the air comes down in rain or snow and can not feed plants till it passes in the soil and is converted into nitrates by being chemically united with a mineral like sodium, potassium, magnesium or calcium. Plants can not grow at all without nitrogen and yet the nitrogen of the air can not do plants any good till it is changed into nitrates. Almost four-fifths of the air is nitrogen and yet plants will die for lack of it unless it is changed into available form. It would afford me much pleasure to go into this matter of the changing of the free nitrogen of the air into nitrates which are available for plant food, but it is doubtful if such matter would be of much benefit to the average reader of The Ranch.

Let us get away from the idea that water in our streams get rid of all fertilizing matter by flowing down to our farms. Many germs of disease are carried in flowing water to our cities and towns if their water sheds are not protected from contamination. Prof. Piper once told me that in Washington, D. C., where he lives, many people, himself and family, included, would not drink the city water until they had boiled it as it is badly infected with typhoid germs. We have laws in or statute books in many states forbidding cities to allow their sewers to discharge into the rivers till the waters are passed through septic tanks. This is done to kill the germs of fatal disease.

To show how flowing water carries much fertilizing matter let me make a quotation from Prof. King's book entitled "The Soil." On page 19 he says: "Living in the soil, chiefly in the surface 14 inches, are great numbers of microscopic forms, which, feeding upon the dead tissues of plants and animals, evolve large quantities of carbon dioxide, nitric and other acids, which in their turn become corrosive agencies, bearing off in the waters that run to the sea vast quantities in solution. Mr. T. M. Read has estimated that the Mississippi alone carries annually to the sea 150,000,000 tons of dissolved rock material, while other streams bear away proportionately large amounts." Certainly that beats the rain and snow.

### THE FRUIT OUTLOOK

The prospects for the fruit crops is a vital question to both growers and shippers. Upon the whole the prospect is better than it seemed a month ago. This is conceded by the Fruit Grower of St. Joseph Mo., which is one of the reliable papers that comes to our office. As might be expected there are conflicting reports as to the condition of the crops. The Fruit Trade Journal of New York gives both sides

of these conflicting reports. In its issue of July 2, we find a report from Meridian, Conn., June 28, as follows:

"That one-half of the Connecticut crop is ruined by the inroads of the canker worm and the gypsy moth is the opinion expressed by the experts at the Connecticut Experiment Station at New Haven." One man wrote to the Fruit Trade Journal, June 2, saying that the Grand valley, Colorado would ship 3,000 cars of fruit. Another man wrote, July 4, that there would not be over 2,000, cars in all the valley. In the same journal for July appears the following:

St. Louis, July 6.

Commission merchants of this city declare that there will be a great shortage in all kinds of fruit. F. W. Brockman, of 819 North Fourth street said Missouri will not produce more than twenty-five carloads of freestone peaches, and they will be of an inferior quality. He said that St. Louis would get very few peaches from Arkansas, as the crop in that state is very short.

"The best peaches will be on the St. Louis market between now and July 15," said Brockman. "Those who wish to preserve peaches will do well to buy them at that time. Prices are going to be high all season.

"There will be no clingstones to speak of. Cherries and apples are also scarce. We will get some cherries from Michigan, and some from Colorado.

"I have been in communication with fruit men in all parts of the country, and find that there will be a very light crop. The fruit men in this section of the country had bad crops for three seasons. Peaches are selling at \$1.75 to \$2.00 a bushel, and will not be much cheaper."

In some sections the reports are much more encouraging. We will have to say as the Dutchman did, "You pays your money and you takes your choice." We may be sure that there will be no failure nor will the crop be enormous. Discount the man who is an extremist on either side of the question.

## HAVE PLENTY OF RUNNING WATER for the orchard by pumping with RIFE RAMS

Pump water automatically day or night



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## WILGROW GOOD FOR THE LAWN

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THE PERIODICAL FINANCIAL STRINGENCY IS BOUND TO COME. THE MAN ON THE FARM WILL BE IT EVEN MORE SO THAN HE IS NOW. GET YOUR'S WHILE YOU CAN.

We have a 35-acre tract of valley land, mostly cleared and under cultivation, 6 acres of fine berries, splendid soil, running water, 2 miles to postoffice, cannery, creamery and depots, fine roads, 6-room plastered house, with city water, barn and other buildings. A berry patch near this NETTED last year \$420 per acre. What can be done on a piece of land like this in the Puyallup Valley IS NO GUESS WORK. The man who has the BRAINS (farming is a business) can clear up over and above his living, EVERY YEAR \$5,000. Any man who is acquainted with conditions and values in the Valley will price this place at not less than \$16,000. It is offered at \$11,000. Is it a SNAP? Come and see.

**John Mills & Son, Puyallup, Wash.**

## PAYS \$55,183.57 IN SEMI-ANNUAL DIVIDENDS

Company Pays Big Dividends Then  
Carries 10 Per Cent of All  
Receipts to Surplus.

The nineteenth semi-annual report just issued by the Northwestern Mutual Fire Association of Seattle shows payment of semi-annual cash dividends to policy holders of \$55,183.57, and in addition to paying these dividends it added \$18,633.71, or 10 per cent of all receipts, to permanent cash surplus. This now gives the company cash and securities equal to more than five times the amount needed to pay losses to expiration of all policies as based on the company's past nine years' experience, or 50 per cent more proportionate cash resources than the ten largest stock companies in the United States.

### Non-Assessable Policies

The company, although a purely mutual organization of property owners, issues only a non-assessable policy which its large cash resources enables it to safely do. Every new policy holder becomes a part owner of the company and receives his proportionate share of dividends. Its profits to policy holders to date amount to the handsome sum of \$836,969.95.

The extremely large profits of the company are largely the result of a careful system of inspection by which many losses are avoided. This is clearly shown by the official report of the State Insurance Department which shows that the company led all other companies in amount of business done in the State of Washington with a loss ratio of only 33 per cent of its premiums, while the company nearest approaching it in amount of premiums had a 67 per cent loss ratio.

Any person whose property is up to the required standard of the company is permitted to take advantage of the company's service and get the benefit of its dividends which average more than 40 per cent of the premiums paid.

### TOO LATE TO CLASSIFY

FOR SALE—54 ACRES OF LAND IN LEWIS Co.; 1½ miles from Napavine; 30 acres cleared; small house, good orchard, barn 50x60, good well, also spring water; ½ miles from school and railroad; 1 cow, 8 Jersey heifers 18 months old; one 9 months old; 1 horse, 1 buggy, 1 wagon; also all first class farm implements. Price \$4,500; \$3,500 cash, balance on easy terms. Address J. G. Haight, Napavine, Wash., P. O. Box 103.

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80 acres, 20 acres cleared and partly cleared; 5 acres in poultry yards, set to fruit trees, mostly bearing; 7 room house; barn and other buildings. Gasoline engine, all furniture, tableware etc. 500 hens, other stock, bees and general equipment. On good road, ¾ miles from Shelton; near school. Come and see with your own eyes. Spend a few days with me, examining my expense bills and receipts and be convinced that you are getting your money's worth.  
E. G. FRANCIS, SHELTON, WASH.