FOR FARMERS' STOCK BREEDERS AND GARDENERS

Bacterial Blight of Beans

(Experimental Farms Note)

It appears that very few, if any, of all those who grow the garden bean escape from the well known and destructive disease bacterial blight. Under ideal conditions for the spread of the bacteria causing this malady, which are carried in the seed planted, a complete failure of the crop may result. As soon as the seedling appears the diseased areas develop on the first leaves. After this, the disease will spread best at high temperature. Also the spread of bacteria to other leaves, or from plant to plant, occurs by the spattering of rain, and wind, and by men and tools in the cultivation is carried out when the leaves are moist. There fore, this should be done only under dry conditions.

The early symptoms of the disease are easily recognized on the leaves, where the diseased areas at first have a water-soaked appearance, and later only the dry, parchment-like tissue remains, or becomes broken and drops out. The diseased areas on the pods also have the water-soaked appearance, but they do not become dark colored, as is the case with the anthracnose disease of beans. The bacteria pass through the tissue of the pod and become lodged inside the covering of the new seed, where they persist ready to infect the next crop. Thus, the first stage in growing a healthy crop is to plant seeds which do not contain the bacteria causing bean blight. Treatment is not effective.

Annually much infected seed is handled by dealers, with loss and disappointment to those who grow the seed in their gardens. This loss could be reduced to the minimum now possible, if the fields from which the seed originated were inspected and guaranteed by certification. A method which may be used on a small garden plot is to remove early and to burn all seedlings which have disease lesions on the cotyledonary or seed leaves. This method, although limited in the extent to which it can be applied, has given good results in preliminary tests made by the Dominion Laboratory of Plant Pathology, at the University of Alberta, Edmonton.

Beware of the Gentle Bull

A bull that is known to be a cross fellow never does any harm, simply because he never gets the chance, but it is the gentle animal, the one that has a name for docility that gets his chance when he has the "spirit" to take it. That being the case every bull should be handled and managed at all times as though he were known to be dangerous. He is dangerous, whether he has shown symptoms of it or not, and some day may make it sorrowfully manifest.

The wild nature inherited from ancestors still lurks in all domesticated animals, and the bull is the most formidable of all. All other species of animals only show the disposition to fight when badly used or irritated, but the bull will attack without provocation. Forgetting this fact and trusting to the methods of handling the bull in the past, as if he were a harmless exception to the rule, has cost many a bull owner or caretaker his life. Years may pass without anything happening to injure his reputation but all the while he may be waiting his chance.

The proper handling of the bull, from calfhood up, is of as material interest to the owner as the other duties of feeding, etc. The period to inculate obedience is in childhood, and the time to teach him this domestic duty is when he is quite young. He will resent the treatment necessary to his training less at a month old than at any subsequent time. The bull should never be teased, as this will surely develop the fighting instinct, and any liberities on his part should be met with firmness.

Neither should he be petted, as this familiarity might one day be treated by him with contempt. Nor should anyone be allowed to handle the bull, young or old, who is nervous, as he will be quick to notice this weakness, and be ready to take advantage of it. Often an attack comes from this cause, which could have been overcome at its initial stages by a courageous man. The number of casualties every year discloses clearly the wisdom of taking all necessary precautions in the handling of these animals.

Bulls should be rung when only a few months old, and trained to lead with the ring, without harsher treatment.

The first ring will be better if a light one, and then changed for a heavier one later on. If a bull is suspected to being inclined to be vicious his head should always be kept high while leading him. Some bulls, if they get their heads down, will prove dangerous even when well rung. To aid the man in charge, a staff with a heavy steel hook must be provided. It must be dependable and not the ordinary fork handle socket type. They are not safe.

It must always be be remembered that it is on the stability of the staff that the life of the caretaker, or whoever may be aroud, depends. Perhaps the safest hook for fixing to the ring will be one provided with a thumb screw.

The temperment of the bull depends largely on his training. "The boy is father to the man," and in like manner the "calf is father to the sire." The care and handling of the bull is a serious proposition, and the man in charge must always keep in view the fact that he is dealing with the most formidable animal of any in the history of domesticated animals.—Ottawa Farm Journal.

NEWSY NOTES

BY AGRICOLA

GARDEN NOTES

As I write this, it is raining. Already, in the first half of the month, there has fallen more than four times as much rain as fell in the whole of May, 1935. Consequently it has not been favorable weather for working up the garden, though the spring flowers seem to enjoy it. The scarlet and yellow Duc van Thol tulip—the earliest to appear,—make a brave patch of color, unfolding whenever they get a glimpse of the sun. Most of the daffodils are still in the bud stage yet, for this is a cold windy spot; only the short-stemmed "Golden Spur" is in full bloom. The English cowslips are thrusting up their yellow heads; the stem elongating right to the seeding stage. They are a simple flower, but" I just love them" for their fragrance, which reminds me of the Auriculas in the old home garden. Both had the same perfume, the Primula Auricula being the more fragrant; but while the Auricula, by virtue of its superior flowers, dwelt in the front garden, the more plebeian cowslip was relegated to the vegetable garden where it flourished exceedingly and bordered all the paths. Sometimes the folk took a fancy to make cowslip wine of the blossoms (a peck of flowers to every gallon); this when well made, was the most delicate of all the home-made wines.

A lady reader has just sent me a nice packet of Gladiolus corms, and I take this opportunity of thanking her. It is pleasant to know that one's efforts in the cause of gardening are appreciated.

Plant breeders are still at work on this popular plant; they are still trying to produce a "true blue" Gladiolus. I have several which are catalogued as blue, but which have too much of the violet or purple to suit my "artistic eye." Then it appears we are likely to see, in the near future, a double Gladiolus, possibly of kinds and colors which are already named. Whether a double Gladiolus is an acquisi ion time alone will tell; in the case of the Lily (Lilium) family, double varieties of nearly all species have been produced—and discarded. They were all clumsy monstrosities, and it is doubtful if any, if we except the double Tiger-lily, can now be found in florist's lists.

It is only a question of time now, till a race of scented Gladioli are within the reach of everybody's purse, for the European fragrant wild Gladiolus (G tristis) has been crossed with such varieties as Prince of Wales, and Mrs. Frank Pendleton. Tristis itself is really a winter-growing species and therefore only suitable for the "greenhouse" (conservatory) there; but the intercrossing has put the bloom into the right season. It may well be imagined that it is harder to breed "scent" into a plant, than it is to produce a specified color, yet it has been done successfully in the case of the Paeony and the Nasturtium.

Acclimatization, says the dictionary, is a process of adaptation by which animals and plants are gradually rendered capable of surviving and flourishing in countries remote from their original habitats, or under meteorological conditions different from those which they have usually to endure, and which are at first injurious to them. This process has by some writers been called naturalization, and a few have confused it with domestication. Neither of the latter definitions is correct: a cultivated (domesticated) plant need not be acclimatized in the sense that it needs no protection. The potato, for example, is "domesticated" here, but never becomes a wild plant; without protection our weather conditions would quickly put an end to its "domestication."

Naturalization includes acclimatization—and more. The competition of other organisms, says Darwin, is a far more efficient agent in limiting the distribution of most plants, than the mere agency of climate. We have plenty of "hardy" pants in our gardens but very few indeed "run wild." They can withstand the vagaries of our climate, but once free of our care, they fall victims before the onslaught of the vigorous established vegetation. Even in the garden itself we must increasingly "weed." De Candolle, a French scientist, tells of several botanists at Paris, Geneva, and Montpellier, who sowed the seed of many hundreds of hardy exotic plants, in what appeared to be the most favorable situations in their localities; with the result that in hardly a single case did any one of them become naturalized. Through the kindness of a gentleman who has his own private botanical garden in Wiltshire, England, I have been enabled to try to cut the seeds of many varieties of British wild flowers and perhaps 75 per cent became acclimatized, and the rest did not survive. I have never yet raised the Winter Aconite and the Lesser Celandine—both buttercups: the Ranunculaceae are hard to rear for some reason. The Campanulas, however, catch on at once! But out of all the varieties that I have raised none tends to become naturalized; they are all domesticated.

Out of a packet of laburnum seed, one plant is living, and it survived the winter outdoors, which I am told is unusual in Canada. This grows to be a shrub or small tree, 15-20 feet in height. Its scientific name is cytisus aburnum, but one of its popular titles is "Golden Rain," because it is closely covered with sprays of yellow, pea-like flowers; so closely that the leaves are concealed! Many of the Parks in Newcastle had "hedges" or banks of Laburnum, just grown for their effect in Springtime.

The Narcissus, no doubt, received its name from Narcissus, who in Greek mythology was the son of the river god Cephisus and the nymph Leiriope, distinguished for his beauty. The seer Tiresias told his mother that he would have a long life, provided he never looked upon his own features. His rejection of the love of the nymph Echo drew upon him the vengeance of the gods. Having fallen in love with his own reflection in the waters of a spring, he pined away (or killed himself) and the flower that bears his name sprang up on the spot where he died . . . Narcissus, representing the early spring flower which for a brief space beholds itself mirrored in the waters and then fades, is one of the many youths whose premature death is recorded in Greek mythology. The flower itself was regarded as a symbol of such death." That quotation is from Bulletin No. 95—New Series, which may be obtained free of charge from the Dominion Dept. of Agriculture. Its title is "Some Flowering Bulbs" and it deals with Tulips, Narcissus, Hyacinths and other Spring-flowering bulbs as grown in Canada. All flower-lovers should have this pamphlet.

When the depression was at its worst, the town of Temiskaming, Que., was hard hit—like many other places. The municipality had to provide relief for very many of its citizens, and with commendable enterprise it set them to work to beautify the town. An article in "The Flower Grower" of Calcium, New York, somewhere in the year 1932, told of Flemiskaming's progress, and extolled the "Rock Garden" which the unemployed were constructing along the sides of one of the entrances to the town. Now, a modest little ad. in "The Canadian Horticulturist" informs the Dominion that the Town of Temiskaming, Que., has surplus plants from the Municipal Rockery for sale. "A few gems are also available," at prices which seem pretty reasonable.

One of the bitter fruits of unemployment is the loss of confidence in oneself. Many years ago, during a big slump, the Newcastle Corporation (Council,) to give the workmen something to keep them employed, and restore their morale, fenced off a portion of the "Nun's Moor Park" as allotment gardens. The men had the plots rent free at first, and speedily made good use of them, by producing vegetables which served them all winter, while the more expert had a surplus which found a ready market. Perhaps it woud be more correct to say that the market found them, for the "gardens" were crowded, especially at the week-ends, with customers, mostly women and children. Eventually the men formed a "Committee" which obtained a 21-years lease of the plots, and this permitted the erection of greenhouses (hothouses) and other small buildings useful to the gardener. When I left the City, the committee was arranging the second 21-years lease.

Canadian Garden Service 1936

Interior decorators point out that it is quite possible, indeed it is a common mistake to crowd too much furniture into a living room. Particularly is this true when that room is inclined to be small.

Now the same is true of the garden so it is said. To the casual observer the peculiar thing about it is the fact that while the space devoted to flowers, shrubs and lawn seemed ample in the first years, later on the appearance of a jungle began creeping in.

The explanation, of course is simple. Tender hearted and naturally experimental, the owner has allowed his original perennials, shrubbery and vines to spread, regardless of room. He has added more probably and the greatest fault of all, every little seedling has been encouraged to grow up in the hope that it will turn into some wonderful new flower or a rose that will take the world by storm. But the odds are greatly against such chance finds and in the meantime the garden quickly loses its air of spaciousness.

Room Is Necessary.

Even the finest flower must have ample room to develop into full loveliness and grace and the same is still more true of shrubs and trees. The lawn should not be cramped. No mater how tiny the space at ones disposal, old experienced gardeners insist on a little grassy turf in the foreground. This provides a setting for the shrubs. Along the fences and walls, these people plant all the shrubbery wanted, but they strongly advise against spreading it all over the place. Irregular clump planting rather than straight rows or odd beds here and there are urged.

With perennial flowers, too, the average gardener is advised to be rather hardhearted. These things, especially those like iris, peony, lily-of-the-valley, evening primroses, phlox subulata, dianthas, and such things are inclined to spread out leaving the centre weak and often a snug refuge for weeds. Beginners are urged to keep perennials within bounds and every few years to cut up clumps and replant. In small gardens one is also urged to stick to one or two specimens of each kind adding brand new varieties rather than filling all space with offshoots of the original clumps.

Make Several Sowings

Several sowings of each vegetable are advised. Otherwise all mature at the same time, and then there will be a feast or a famine. After all with such things as radish, spinach, peas, corn or practically anything else for that matter the time they are really worth eating is when they are fresh, that is just mature, and taken right out of the garden. They must be quickly grown and used immediately when they have reached the proper size. These vegetables will deteriorate whether they are left in storage or ripening in the vegetable rows. To avoid this sort of thing the good gardener has his vegetables coming along continuously, a few feet of letuce and baby carrots and beets ready for the table all season.

A Help

A good seed catalogue will prove indispensable. Height of the flowers, times of blooming, whether they are suitable for such special purposes as edging, screening, cutting and fragrance are all mentioned and are vital facts in laying out a satisfactory garden. In the vegetable line the catalogue continues this useful service by listing different varieties under the heading of early, late and medium so that a succession of vegetables is possible right through the season. With unusual sorts, special direction are given in regard to care and preparation for the table.

—Canadian Seed Trade Association—

Treating Potatoes To Control Stem Canker

(Experimental Farms Note)

The potato disease commonly known as "stem canker", "rhizoctonia", "rhizoctonosis", and on the tuber as "black scurf", probably contributes more to reducing the yield than any other malady affecting this crop in Canada. The black scurf on the tubers, as is the case with common scab, makes them unsaleable. An attack on the root stems bearing the tubers reduces their size and deforms their shape, the degree depending on the earliness of the attack, and on the extent of injury.

However, it is the damage to the stem that appears of greatest economic importance. The young sprout as it leaves the set on its way to the surface is more easily attacked then, with greater resulting damage than at any time later. Indeed, the attack on this area appears to occur almost wholly during the sprounting period. This point is very significant, for should the soil be very dry during this time, the plant may escape serious attack, or on the other hand, if the moisture of the soil is adequate, be severely injured. It also emphasizes the danger of the living patches of the "sclerotia" or "scurf" on the planted set. Thus under favorable conditions the parasite quickly grows from these patches of scurf to the sprout, which it may entirely destroy, or delay it to cause "misses", and stunted plants in the field.

From studies of this disease by the Dominion Laboratory of Plant Pathology, Edmonton, co-operating with the University of Alberta, it has become quite clear that scurfy potatoes should be treated before they are planted. Of course there is no point in treating material which is free from scurf, but one must bear in mind that only a slight amount of scurf is just as effective in transferring the disease as a large amount is. In treating, however, one may, if not careful with the time which the tubers are immersed and with the strength of the solution, injure the germination and vitality of the plants, even as much as that caused by the disease. The experiments at the Edmonton Laboratory have shown that the corrosive sublimate method is effective in killing the sclerotia or scurf on the tuber. Four ounces of corrosive sublimate are dissolved in 25 gallons of water and, if the scurf are abundant and large, the soak period is 1 1-2 hours, but half an hour would be quite sufficient if only a slight amount of small scurf is preesnt. In fact it is proper to use the shorter period where advisable.

Weeds and Plants Fight for Life

Plant competition is a natural phenomenon in which plants of the same or unrelated species growing in close proximity develop at the expense of their weaker rivals. This competition is of general occurrence in the plant kingdom both among native species under natural conditions and between crops and weeds in cultivated fields. In a recent issue of "Scientific Agriculture," T. K. Pavlychenko and J. B. Harrington of Saskatchewan University of Saskatoon give some interesting information on the subject, together with results of experiments carried out at the Weed Nursery of the University's experimental farm.

Observations over a period of several years indicate that competition between overlapping root systems takes place long before the tops of the plants begin to shade one another. In short, competition commences under the soil surface when the root systems overlap in their search for water and food, and manifests itself immediately in the retarded development of the top growth, becoming intensified by the top growth competition for light, only after shading of one plant by another has taken place.

Moisture, the predominant limiting factor in plant growth on the open plains of Western Canada, is the most important consideration in weeds versus crop competition in that area. In one of the experiments it was found that the yield of Marquis wheat was 40 per cent lower in plots infested with wild mustard than in plots free from weeds. Plants of barley, wheat, and wild oats, grown alone in areas ten feet square, attained approximately ten times as large a growth in ordinary six-inch drill rows. Plants of hare's ear mustard, common wild mustard, and Russian thistle, when grown alone produced from 100 to 1,000 times the growth they had when grown in ordinary six-inch drill rows.

In a weed-versus-cereal competition study, Hannchen barley competed much more successfully with wild oats and wild mustard than did Marquis wheat. This is due to the fact that Hannchen barley at five days after emergence usually has a large number of seminal roots, and 22 days after emergence it develops also more crown roots than Marquis wheat. Marquis wheat in the same study competed fairly successfully with wild mustard, having a total root system 30 per cent longer than the mustard, but was badly depressed by wild oats the latter having more than four times as large a total root length.

How to Improve Home Grounds

Practically every householder in the country or an urban centre has a desire to have attractive surroundings and nothing will do so much in this way at so small a cost as the planting of trees, shubs, plants and vines. Within the next few weeks is the best time for planting, but such work should be done on some definite plan in order to get the most pleasing results.

Then there is the question of just what to plant. This and a wide range of other questions is answered in the handbook "Beautifying the Home Grounds of Canada" issued by the Horticultural Council of Canada, 114 Victoria Street, Ottawa. The opening chapter is on Landscape Architecture — Arranging and Planting the Home Grounds, written so that the most junior tyro in gardening can readily understand. There are plans to illustrate the arrangement of lawns, gardens and plantings for the average small house with pictures of what engaging results can be obtained. There is also special chapter dealing with Planting the Farm Home Ground.

How to Establish and Maintain a Rock Garden is also fully described and plans are given to indicate how to get the most effective lay out. Every conceivable detail about arranging lawns, gardens and plantings is given in the book, which concludes with a complete list of trees, shrubs, herbaceous perennials and annuals that are suitable for planting in each province prepared by Provincial Horticulturists.

Succession And Companion Plantings

The vegetable gardener is much like the factory manager when it comes to production. He likes to get as much produce out of his available space as possible. To do this he resorts to two doubling up arrangements called succession and companion plantings.

He knows, for instance that radishes take only a few weeks to germinate and mature, thus leaving a whole row or more of space for another crop. In this case, a mixture of radish and parsley seed can be planted at the same time, the parsley being slower, and obliging enough to give the radishes full away for the first few weeks. This is called companion planting, although one is harvested before the other.

Other companions for radishes are cabbage or peas between the rows. In this case two rows are planted in a space for only one, but as the radishes mature quickly and are used up, there will remain only one row, with sufficient room for cabbages or peas. Another suggestion is parsnips or beets between rows of spinach. The spinach is a cool-season, fast grower, and is soon used up.

In the case of succession plantings the gardener waits until a quick growing vegetable is harvested, and then replants with another crop. Here are a few:

Radishes followed by string beans.

Early peas followed by turnips, carrots or beets.

Spinach followed by sweet corn, tomatoes or beans.

Young onions from sets followed by eggplants or peppers.

These companion and succession plantings are interesting for the gardener, especially the fellow with a small amount of space, and he can often grow more vegetables on his little garden than his neighbor will do on twice the space.

There are a few exceptions which should be remembered. Root crops should not follow root crops, and the same is true of the leaf crops. Turnips, carrots or beets should not follow radishes, or Swiss chard follow lettuce.

In practicing succession planting, it is well to see that the soil is in a fine, rich condition, so that the first crops may be harvested as soon as possible. If necessary add a complete plant food to the garden at the rate of 4 pounds for 100 square feet of surface soil.

Fertilizers and How To Use Them

The primary function of commercial fertilizers is to furnish in available form one or more of the three elements of fertility, nitrogen, phosphoric acid, and potash. To predict with a fair degree of precision the amount of these elements necessary to amount of these elements necessary to apply to the soil to produce maximum yields is, states C. H. Robinson, Dominion Chemist, Dominion Experimental Farms, an extremely difficult matter. Factors, such as texture of the soil, available plant food already present in the soil, previous manurial and cropping treatments, soil reaction, climatic conditions, and drainage, may affect the results obtained from application of the added fertilizing constituents.

While it has been customary to give particular attention to the nature of the crop in deciding on the fertilizer, it is being recognized more and more that a knowledge of the amounts of available fertlizing constituents present in the soil is of importance. With such data on hand, the effect of an abnormal deficiency or over-abundance of either nitrogen, phosphoric acid, or potash, may be overcome to a very considerable extent by an adjustment of the ratio between the plant food elements furnished in the fertilizer. For example, the 4-8-10 mixture is considered to be an excellent one for market garden and potato crops, if it is known that the soil is exceptionally well supplied with nitrogen, it is possible that a fertilizer containing less nitrogen would prove more profitable.

Further, an insufficient supply in an available form of elements other than those supplied by the commercial fertilizer may seriously affect crop yields. If the soil is strongly acid and low in lime content, this condition must be corrected for best returns from the application of fertilizers, particularly in the case of legume crops. In certain of the potato growing districts of New Brunswick it has been found that the addition to the fertilizer of a small amount of a magnesium compound, such as ground dolomite or keiserite, overcomes poor crop development thought to be brought about by an insufficient supply of available magnesium in the soil. A certain measure of success in the control of physiological disorders of crops has been obtained by the application of trace elements such as boron and manganese. Particular attention is being given to the use of small dressings of borax as a means of control of brown heart in turnpis and crown rot of sugar beets and mangels.

Fertilizers For Town Garden

The supply of stable manure for the city and town garden is now somewhat difficult to get, consequently subsititues must be used. Pulverized peat, leaf mould or leaves dug into the garden in the fall will supply the humus satisfactory and the plant food may be added in the form of commercial fertilizers.

For most gardens a commercial fertilizer containing about 4 per cent of nitrogen, 10 per cent of available phosphoric acid and 8 per cent of potash soluble in water, applied at the rate of about 5 pounds per 100 square feet of garden will give good results. There are many other fertilizers satisfactory for the purpose in point of analysis such as 5-8-7, 3-10-8, and 4-8-10. Dried and pulverized sheep and poultry manure are also satisfactory when applied liberally (say 10 lb. per 100 square feet) for the plant food content of these is comparatively low i.e., 2 per cent of nitrogen, 1 per cent of available phosphoric acid and 2 per cent of potash.

Leaf mould, compost or any form of soil even though of dark colour, should not be regarded as fertilizer but as humus suppliers to which the plant foods, nitrogen, phosphoric acid and potash, should be added for best results. This should be borne in mind when vendors offer loads of such materials as fertilizers in the towns and cities. Frequently compost or loamy earth is sold to unsuspecting householders with the claim that it is fertilizer. Humus is not fertilizer and neither is the best of garden earth, even though dark in colour. Cases of fraud of this kind are frequently dealt with under the Fertilizers Act.

A Vigorous Worrier

"From what you tell me you appear to lead a very sedentary life, and yet you're not flabby. You look, in fact, pretty fit."

"It's the exercise I get tossing about at nights thinking about my business."

SOME INSECTS OF P. E. ISLAND (3)

Order Hymenoptera. This Order comprises the "true" bees, the solitary and the social wasps, the ants, the gall-flies, chalcis-flies and Ichneumons; and the sub-order containing the horn-tails and saw-flies. The student will observe that it is headed by the "brainiest" insects known to mankind. The following list is again very incomplete, as no attempt was made at a systematic collection.

(A) Bees and Wasps:

Honey Bee, Apis mellifera, L. Introduced commercially.

"Bumble Bees," Bombus spp.

Burrowing-Bees, Halictus spp. Small bees, with feeble sting: plentiful.

Mud-dauber Wasp Sceliphron cementarium, Drury. Frequent and well-known. One of the "Thread-waisted" wasps.

Black Hornet, Vespa maculata L. Largest of the wasps: maculations white.

"Diabolic" Wasp, Vespa diabolica, Savss. Common.

Norway Wasp, Vespa norvegicordes, Sladen.

Common wasp, Vespa communis, Savss. Also a more extensively yellow form, named by Saussure Vespa c. flavida. This form is called by some authors V. pennsylvanica.

Consobrine Wasp, Vespa consobrina sauss. White markings but smaller than V. maculata.

Acadian Wasp, a new species named by Sladen, Vespa acadica. Some of its markings are reddish. The last six are real wasps, with regulation stingers!

Solitary Digger Bee, Melisodes illa a—? Determined at the Royal Museum.

Burrowing Bee, Andraena canadensis, Dalla Torre. Determined as above.

Crabronid Wasp, Solenius interruptus, Le Peletier.

Walsh's Wasp, Odynerus walshianus, Sauss. One of the solitary wasps.

(B) Ants:

The Carpenter Ant, Camponotus herculaneus pennsylvanicus, De Greer. This is the large black ant, which attacks trees and logs, forming a network of galleries.

The Garden Ant, Lasius niger, var. americanus, Emery and the Silky Ant, Formica fusca, var. subsericea, Say, are troublesome in gardens, forming burrows and craters into which they take aphids to feed on the roots of plants and excrete "honey-dew"—of which ants are very fond. There are possibly numbers of species of ants not yet recorded here.

The remainder of the Order will be given next week.