anther, and the pistil, are the only essential organs of the flower, and are sometimes the only parts present. In the flower of grasses the coverings of these essential structures are mere scales. Usually the stamens and pistil coexist in the same flower; but sometimes they are separated, one kind of flower bearing only stamens, and another only pistils. We see an example of this in maize, in some strawberries, in the hop, and other well-known plants. In some instances the two kinds of flowers are found on the same plant, and in others they grow on separate plants. In the latter case it is neccessary that both kinds of plants grow near each other, or the seeds, even though the fruit may ripen, will prove infertile. Insects, hovering from plant to plant, and carrying with them the pollen of the pertilizing flowers to the stigma of the seed-bearing flowers, become the unconscious agents in impregnating the latter and rendering their seeds productive. In artificial cultivation, man sometimes controls this reproductive process in plants, and by applying the pollen of one variety to the stigma of another, obtains from the seed thus fertilized a cross or hybrid, partaking in a mixed degree of the qualities of both parents. This is called hybridization, and has been turned, both in flower and fruit culture, to very useful account. Important results have also been gained, and may yet be still further extended by its application to the cultivation of field products, and new and hardy varieties of grain may thus be obtained. Of course there is a limit to the extent to which this crossing of varieties and species can be carried Mules, even in the vegetable kingdom, are apt to become infertile, a provision made by nature for the obvious purpose of preventing the confusion, and indeed the extinction of specific characters among plants as well as animals.

As soon as the ovule has been fertilized, the function of the flower ceases; the fertilizing agents and the floral coverings commonly perish, and the resources of the plant are concentrated in maturing the fruit, that is, in preparing the seed for its independent life. At the time of flowering the vegetation of the plant is in fullest vigour; the subsequent processes are exhausting, and the plant either dies or needs a season of rest. We should draw from this consideration one practical lesson at least, in the case of grasses, clovers, and other crops which are employed as fodder. If we wish to secure these in their very best condition, when they are most fully charged with nutritive juices, we should select for cutting, the time when they are in flower, before the blooms have begun to fade, and the seed-maturing processes, which exhaust the sap of the plant so materially, have commenced.

The endless varieties presented by the perfect fruit throughout the vegetable world, from the minute and almost naked seed, to the gigantic bread fruit, the manner in which the seed is shed, the numberless and curious contrivances for distributing and dispersing these germs of new life, the rich wealth of food thus stored up for the future plant, and ministering at the same time in nature's bountiful profusion to the wants of a higher order of beings, these and a hundred other topics must be passed by without comment, except to indicate the extent and interesting character of the boundless field of enquiry which this department of knowledge opens up to the student of nature. Nor can we allow ourselves in this place to expatiate on the wonderful beauty in form and hue of these perfect germs of the field; but we may, before concluding, just allude to a prosaic view of the subject which may suggest a new idea to some of our readers. Admitting that the lovely colours and shapes of flowers served no other purpose than mere ornament, we should not think the end attained a trivial one, or that the profusion of beauty scattered over the earth was any waste of creative power. But, we believe, there is another and a more directly practical object secured—that these very shapes and hues serve an important purpose in the economy of vegetation. We know that the agency of the sun's rays in many chemical and organic processes is a compound agency, that the different coloured rays possess different properties, and it is natural to infer that the multiform and many-hued cups and chalices into which God's hand has moulded the flowers may be exactly adapted to separate by their peculiar tints, and concentrate by their reflecting surfaces, the special rays of light and heat which the fertilizing process needs in each plant,—that the curve of the corolla, and the blue or the gold of the petals, may be essential elements of a tiny yet perfect laboratory, where light and life are working out their marvellous operations, no less than the artistic finish of a beautiful creation designed to delight the beholder and satisfy the Maker's sense of what is fair and good. This view of the subject may induce the utilitarian to regard with more complacency the beautiful flowers of the earth, while it will detract nothing from the enjoyment of the poet or artist, and like every fresh contemplation of the theme, will invest with a new interest the lesson of the great Teacher, who best knew of what he was speaking when he uttered the injunction to "consider the lilies of the field how they grow."

Profitable Farming.

To the Editor of THE CANADA FARMER:

SIR,—I have read with pleasure two articles in your issues of November and December last, on improving land by sowing turnips, and rotting them where grown. This method has been tried in England. Nesbit, in his lectures, states that some farmers had a gain of thirty shillings an acre, by rotting this crop, over the profit from feeding to sheep. But might not the same thing be done as well, and cheaper, after a somewhat different method? There is much labour in raising an acre of turnips, wages are high, and turnip-hoers scarce. The same work that would cost 10d. in England, will cost a dollar in Canada. After the roots are raised, the operations of pulling, topping, and tailing, storing them in cellars, and lastly, cutting and carrying them to the cattle, are labourious; and after all, nearly nine-tenths of the bulk are water. It is understood by sheep-feeders that 2,240 lbs. Swedish turnips make 14 lbs. of mutton. Then it is said that vegetable manure raises a crop with only half the nitrogen in it that many other manures will give. (See Johnstone's Lectures.) I have raised turnips here for about forty years, and began feeding about 100 lbs. daily, but have gradually reduced the feed to 30 lbs. daily. I believe my fields are in better condition now than they were when I first began with them. The farm was wild, broken with gullies, and swampy, when I began to chop on it. With your permission I will tell how it is now farmed. It is in eleven fields, two of these (22 acres) are in permanent pasture, the other nine fields, averaging 18 acres each, are used thus:—First field in oats, second divided as follows: two acres of potatoes, four of turnips, three of corn, sown thick for soiling, (after the corn is taken off I get a small crop of turnips,) and nine acres of peas or corn. The third field is in barley, or wheat, or both the fourth in clover, the fifth clover, the sixth clover, the seventh and eighth pasture, and the ninth, clover, finishes the rotation. Most of this land is drained with tiles or wood, some portions of it with stones, in parallel drains at twenty-seven feet apart. The wood is sawn hemlock or cedar, the cost being about the same as that of tiles, say, 1s 10d. the rod.

Such is my general plan. The details are as follows. To begin with the eighteen acres of oats. This field is ploughed in the fall, sown early with two-and-a-half bushels of oats, harrowed diagonally twice, with a heavy harrow, then dressed with two bushels of ashes, 75 lbs. of salt, one peck of water lime, 50 lbs. of burnt bones, and 40lbs. of sulphate of ammonia. The total cost of top-dressing is £1 2s. 0d. Afterwards harrow twice lengthwise with a common harrow. Fifty or a hundred pounds of sulphate of ammonia may be used. Under this treatment 100 or more bushels of oats may be raised to the acre. I expect seventy bushels. It is *presumed there is plenty of lime in the land. If I fal*low, when stumping or draining. I lay on 70 bushels of quick-lime on each acre. After that it wants 80 lbs. yearly. I keep the lime clear of yard dung and ammonia. The land should be well ploughed and subsoiled.

The second field is chiefly a hoed crop. Two acres are planted with potatoes. This portion of the land should be ploughed in the fall, twice grubbed and harrowed in the spring, then drilled. Sow the following dressing:—8 bushels of ashes, 1 barrel superphosphate of lime, 100 lbs. of salt, 100 lbs. of plaster, 50 lbs. of burnt bones, and half a bushel of water-lime. Take a round light log and drive spikes in it, and draw it twice along the drill to mix the dressing with the earth. Plant the potatoes in the proportion of about 15 bushels to the acre; cover with the double mould plough. Before they are through the ground, I harrow with light harrows, then sow 50 lbs of sulphate of ammonia, and 100 lbs. of plaster, and afterwards scuffle. They will not want much hoeing. Scuffle again and set up slightly. Two hundred or two hundred and fifty bushels will probably be the return. Four acres are devoted to *turnips, which should be wrought in the same way,* only the manure is spread before the drills are made. The same manure and dressing are used as for potatoes. The crop with me is not below 800 bushels, nor over 1000 bushels per acre, and at 3d. the bushel leaves but little balance. *Of the remaining land,* nine acres are in peas. The land is ploughed and harrowed, and two bushels of peas are sown to the acre. The ploughing is four or five inches deep, with a gang plough. Top-dress with 48 lbs. of burnt bones, 200 lbs. of salt, and 300 lbs of plaster. Harrow lightly and roll lightly. The crop may be from 30 to 50 bushels to the acre, 36 bushels being about the average. The rest of this field, amounting to three acres, is planted with corn, sown thick for soiling. This is wrought in the same manner, and dressed as for potatoes. The corn grows very thick, and eight or nine feet high. The crop is worth at least $10 an acre. My cows are fed twice daily, as much as they will eat. *It is cut into lengths of five-eighths* of an inch. Some turnips are given after the corn is cut.

The third crop is barley or wheat, ploughed in the fall, grubbed in the spring once or twice, and harrowed. Two bushels of barley are *sown to the acre,* put down with the gang plough or drill, top-dressed with two bushels ashes, 150 pounds salt, forty-eight pounds burnt bones, and one peck of water-lime. Harrow once, roll, and sow grass seeds, consisting of nine pounds red clover, three or four pounds Alsike Clover, five or six quarts of Timothy. Harrow lightly, mix 150 pounds of plaster with fifty pounds sulphate of ammonia, and sow it on the barley when two or three inches high. Cut before it is dead ripe. *The crop is about fifty bushels or more* per acre. The cost of plaster and sulphate of ammonia is about 16s 6d. In the fall let no beast feed on the young clover. Dress it with sixteen good loads of yard dung, and sow on the dung, after it is spread, 150 pounds plaster. The yard dung will be worth 3s 6d per load, *besides spreading and carrying* to the field. In spring sow two bushels ashes, forty-eight pounds of bones, 100 pounds salt, fifty pounds plaster, the cost, in all, being 13s 6d. There will be four tons (8000lb) of hay or more, as the fourth crop. After the second cutting do not let the after grass be eaten down. *I cut as soon as the grass is in bloom,* before seed is formed—last year I began on the 17th June. The cutting, curing, and drawing to the barn costs about 5s per ton.

The fifth crop is hay, top-dressed in spring with four bushels of ashes, eighty-four pounds, or more, burnt bones, 150 pounds salt, *300 pounds plaster,* forty pounds sulphate of ammonia; 160 pounds sulphate ammonia would be better. The total cost will