been cleared at all. In your march forward into the woods forget not that the enemy comes in behind; and forget not that it is less honorable to make the conquest of new territory than it is to hold and defend that which has been already won.

It is not alone the loss of the soil and necessarily increased expense of cultivation that field weeds involve. One thing is certain, that no better means can be devised for the encouragement of insects. In regard to the turnip fly, for example, it is well known that it feeds only upon plants belonging to the same natural order as the turnip. In early spring and summer time weeds belonging to this order are often abundant and form suitable pasturage, where the turnip flies congregate and increase to an amazing extent, so that when the young turnip crop appears they at once migrate to its more delicate leaf and blast the hopes of the farmer. Just before leaving Scotland this summer a remarkable instance occurred to me, illustrating what I have said. Two fields, in the same district, and both of clayey soil, were cropped with the same kind of turnips of apparently the same age. One field was isolated by corn fields and potatoes, and I could not detect in it a single fly. The other field was also isolated, but was in a perfect swarm. The reason was explained when I found in one corner of the field an extensive rubbish heap covered with wild mustard, which had been growing since the previous autumn, and thus had formed a winter's provision for the fly.

Another great evil resulting from the abundance of weeds is this, that their seeds become mixed with the grain, and thus we have a dirty sample. This deteriorates from the market value of the grain. At Toronto I saw a very ingenious machine designed for the purpose of cleaning dirty grain of this kind, and I must say it did its work well; but it would indicate a far more hopeful appreciation of the value of clean grain if we were to begin at the beginning, and not allow the weeds to ripen in our corn fields at all.

There is one branch of rural economy, so closely connected with agriculture, that it may without impropriety be noticed on an occasion of this kind. We know that the effect of colonization and civilization in all parts of the world has been to denude fertile land of its native forests. Throughout middle and southern Europe we only find here and there the remnants of the original arboreous vegetation. "Clearing" is in fact necessary to permit the industrial operations of man. But the clearance of forests is not an unmixed good. On the contrary, we find that a train of evils sometimes follows it, which all the exertions of man cannot repair. While there is a want of precise information as to the physical effects of the removal of forests, we have sufficient information to show that such operations should not be carried out indiscriminately, and trusted entirely to private interest, but should be regulated for the general good, and with a view to the permanent interests of a country. The researches of my friend, Professor Cleghorn, at Madras, have shown how injurious have been the neglect of needful precautions in the felling of timber in many parts of our Indian Empire. Humboldt tells us that "by felling trees which cover the tops and sides of mountains, men in every climate prepare at once two calamities for future generations—the want of fuel and the scarcity of water. Plants exhale fluid from their leaves, in the first place for their own benefit. But various important secondary effects follow from this process. One of these is maintaining a suitable portion of humidity in the air. Not only do they attract and condense the moisture suspended in the air and borne by the winds over the earth's surface, which, falling from their leaves, keeps the ground below moist and cool; but they can, by means of their roots, pump it up from a very considerable depth, and, raising it into the atmosphere, diffuse it over the face of the country. Trees, by the transpiration from their leaves, surround themselves with an atmosphere constantly cold and moist. They also shelter the soil from the direct action of the sun, and thus prevent evaporation of the water furnished by rains." Thus do the forests contribute to the copiousness of streams, and preserve during the hot season a certain amount of moisture in the atmosphere. But it is not on such grounds alone that I would argue the conservation of forests in Canada. Let us look to the position of other countries at the present time where timber is scarce, and contemplate the advantages that Canada enjoys at this moment in its glorious old woods, the source of half its riches. Let us reflect on the means that have gradually rendered other countries so poor in this respect, while we are so rich. And while we enjoy the riches, let us see that they are secured also for our successors; that in rendering Canada an agricultural country, we do not forget to provide for the permanent maintenance of those vast supplies of timber which are found so valuable in all the arts of life, and so necessary for the very existence of a people so ill provided with fossil fuel.

In various European states, and in Britain, great efforts are being made to improve