

they will seldom drop seeds outside of such places, so that they nearly always have something to climb.

#### VI. SEEDS THAT ATTRACT AND ARE SPREAD BY BIRDS.

Who has not noticed the brilliantly colored berries on many a shrub and tree? And who has not watched the birds eating them? But ask the average person why the fruit is brightly colored, and probably not one in twenty will give the correct answer. Yet, as with the 'burs,' the reason is at once apparent. Fruits of this nature are brightly colored to attract birds, and for no other reason. This is also why so many berries remain on the trees in winter time. The birds eat the fruit; but the seeds are so constructed that many of them are not damaged, and they are eventually dropped where they have a chance of growing, in most cases far removed from their parents and brethren. In this way the species is spread. This of course does not apply so much to cultivated fruits, which have been altered and improved by man. Strawberries, raspberries, cherries, mountain ash, and practically all the other small berries that are brightly colored, can be used as examples of this method of seed distribution. Seeds are also carried by sticking to the muddy feet of birds and animals.

Many plants retain their seeds until the winter time, which are then drifted along with the snow, in some cases several miles. Small mammals and birds also carry many seeds to store them up as food for winter use. Large numbers of these are lost and if the situation is favourable they grow.

Many seeds are only partly developed for certain methods of migration, and in some cases a few plants will be found to bear two distinct forms of seeds. An example of this occurs in Russian pig-weed (*Axyris amarantoides*), some of the seeds of which are winged while others are not.

A number of aquatic plants and plants growing near water, have seeds well adapted to water migration, the seeds or seed capsule floating, and in still water are often drifted long distances by the wind, or when in running water are carried along with the current. A number of other seeds not specially adapted for this purpose are also accidentally carried by running water, especially when there are floods.

Many details and variations will be found by the Nature student to supplement the above methods of migration among seeds, the study of which should be a stimulus both to observation and deduction—the faculties that Nature Study specially aims at developing.