

Surely if there is anything that our young country needs to be protected from, is it not from everything that makes for misunderstanding and discord between nations, or between provinces without a nation? When our schools are polluted, the rivers are poisoned at the springs. From narrow provincialism and jingoism may Providence protect us.

### NATURE STUDY—No. II.

By G. U. HAY.

In glancing over a landscape in any part of the habitable globe, the restful green color of plants is everywhere met with. Take a closer view of a pasture, meadow, or the trees. It is seen that the green color comes from myriads of separate leaves. To the careless eye these leaves seem only to cover the sward, or to be swaying idly in the breeze. To the intelligent observer they are doing work. Every warm summer day water is drawn up to them from the moist ground. Through many little mouths or pores, chiefly on the under sides of the leaves, most of this water is drained off (transpired) as vapor into the air. These little mouths (stomata), so small that our eyes could not see them were they many times sharper, take in from the surrounding air an unseen gas (carbon dioxide). The sunlight and the little particles of leaf green (chlorophyll), everywhere distributed about the plant where the green color is seen, are working upon the carbon dioxide and the water containing substances dissolved in it, and by a wonderful chemical change the plant food starch is formed. This turned into sugar or other soluble substances and dissolved in the ever useful water is carried through passages in the branches, stem and root to be used in building up the growing parts of the plant, or to be stored up for future use.

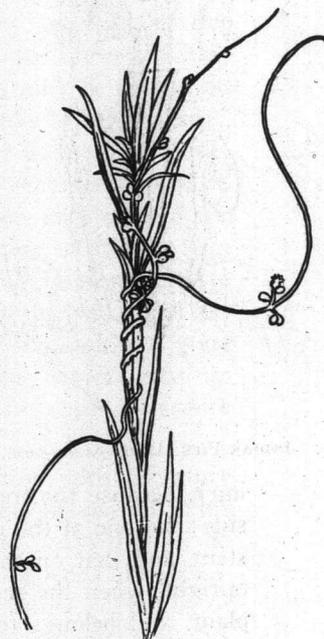
Do we get a little insight into this great mystery of plant life? Do we realize that the world's food supply is being made in those busy waving leaves? Can we name a single food substance used by man or the lower animals that is not made directly or indirectly in these waving leaves? Let us not complain if the sun is "too hot," and let us look with a new and grateful interest on the vistas of interminable green fields and woods, and thank Him, thoughtfully, for the "daily bread" that comes in His own mysterious way.

For this month's nature lesson let us take a few curious plants that are not *green*, and inquire into

their life-history and habits. The dodder (see illustration) is of a golden-yellow color, twining about the stems of asters, golden-rods and other plants found in meadows or along the pebbly shores of streams in late August and September. Notice in the drawing how closely it has twined about the aster and has extended its long thread-like branches to seek for other support. It is a working plant; but do not trust it; its color is not green—the livery of all honest, industrious plants who are turning the materials of earth and air into the food, and, incidentally, the wealth of the world.

Let us trace its life-history with the hope that the boys and girls who read this may perhaps plant the seeds and trace it for themselves.

Last fall a seed which fell from a ripe dodder plant slept comfortably all winter beneath its coverlet of meadow grass. It was in no hurry to wake up in the spring, for the mother-plant had given each of her numerous offspring but a small bit of food to start it on the way in life. This must be husbanded. So the little seed waited. By and by when the warm sun of early summer pierced the mat of grass it awoke, stretched itself, and sent out a slender



DODDER (*Cuscuta Gronovii*).

thread which lay prone on the ground, waiting. A young aster which had started to grow earlier gave promise of a "lift," and around this the threadlike stem coiled in spirals, plunged its sharp suckers into the tender bark of the aster and began to feed on the juices stolen from its "host." With support and food assured, it next cut loose from the ground and lives in idleness and luxury through the summer. It is a *parasite*, that is, a plant which fixes itself upon and gets its food from another plant. They are the tramps and loafers of the vegetable kingdom. But they are not satisfied with an occasional meal. Their hosts, willing or unwilling, must toil and sweat through the whole summer to provide for themselves and their guests.

I have called it a working plant. But its work is for itself: to climb up in the world, to produce little prongs with which to pierce its way to the juices of its host, to array itself in flaunting colors,