

whose function is to draw nitrogen from the air.

The Italian farmer had an infallible and picturesque almanac flaming across the sky. He knew well the constellations and the planets, and the first magnitude stars, and his times and seasons were measured by these heavenly beacons. The signs of the Zodiac, the twelve constellations through which moves the sun, determined mainly the period of farming operations, sowing and reaping. "Sow barley or flax when *Libra* makes the hours of day and night equal." "Sow millet when the *Bull* rises and the *Dog-star* sets." Virgil's astronomical directions are very numerous. "Sow wheat when the *Pleiades* set." "Sow vetches and kidney-beans and lentils when *Bootes* sets." That word "sets" tells a tale. By the "setting" of a star was meant its going down in the west just before the sun rose in the east. The farmer in summer was always up before the dawn. He knew the stars of the morning, but before the stars of evening had assumed their brilliancy he was sleeping the sleep of the tired. Fall ploughing began when *Arcturus* rose in September. The fiery *Scorpion*, the *Kids*, the *Dragon*, all had their intimations for the up-gazing husband man of old.

After the grain is up Virgil recommends that in certain conditions it be fed down to the level of the soil by the cattle to prevent too luxuriant growth.

The important question of rain and moisture for the growing crops is considered. The gigantic scheme of C. P. R. irrigation in Alberta had its primitive example in Europe two thousand years ago. If the summer is not moist, declares the poet, you must

divert the streams and rills over the sown fields. "Gurgling waters allay the thirsty lands, therefore decoy the torrents over the plains."

Weeds there were in abundance in old Italy. Although there was no James Fletcher to write a volume on the Farm Weeds of Italy, Virgil gives us a short catalogue of the most noxious. All of Virgil's list but one I find mentioned in Mr. Fletcher's recent volume, wild succory, the lazy thistle with its horrid spikes, burs, darnel, wild oats, caltrop. Reverent Virgil gives us the cause of the prevalence of weeds: "Jove himself willed that the ways of tillage should not be easy."

The growing crops had other enemies besides weeds. Mildew ate the stalks. Storms levelled the standing grain. Destructive birds ravaged the fields from the day the seed grain went into the soil until the new grain was safely housed.

The poet gives a vivid description of a harvest storm that "sweeps away the joyful corn and the toil of the steers." He gives the farmer various signs of the coming storm: the foreboding flight of cranes, ravens and crows—the snuffing of the heifer, the fluttering of the swallows—the croaking of frogs, the activities of the ant, "carrying her eggs,"—the moon's horns obscured—the sun rising or setting with face dimmed.

Precepts are given for occupations during bad weather. Sharpen your plough-share; stamp marks on your sheep; number your grain-sacks; sharpen stakes for the vines; weave baskets; parch your grain; make snares for birds; drive your flock of sheep into the river.

Instructions for making a threshing