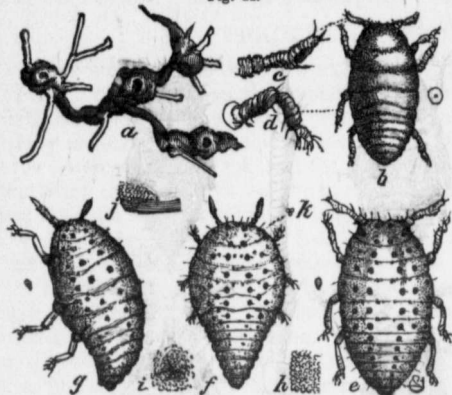


"**TYPE RADICICOLA OR ROOT-INHABITING.**—We have seen that, in all probability, *gallæcola* exists only in the apterous, shagreened, non-tubercled, fecund female form. *Radici-*

Fig. 44.



TYPE RADICICOLA.—*a*, roots of Clinton vine, showing relation of swellings to leaf-galls, and power of resisting decomposition; *b*, larva as it appears when hibernating; *c*, *d*, antenna and leg of same; *e*, *f*, *g*, forms of more mature louse; *h*, granulations of skin; *i*, tubercle; *j*, transverse folds at borders of joints; *k*, simple eyes.

in the spring as many as two hundred and sixty-five eggs in a cluster, and all evidently from one mother, who was yet very plump and still occupied in laying. As a rule, however, they are less numerous. With pregnancy this form becomes quite tumid and more or less pyriform, and is content to remain with scarcely any motion in the more secluded parts of the roots, such as the creases, sutures and depressions, which the knots afford. The skin is distinctly shagreened (Fig. 44, *h*), as in *gallæcola*. The warts, though usually quite visible with a good lens, are at other times more or less obsolete, especially on the abdomen. The eyes, which were quite perfect in the larva, become more simple with each moult, until they consist, as in *gallæcola*, of but triple eyelets (Fig. 44, *k*), and, in the general structure, this form becomes more degraded with maturity, wherein it shows the affinity of the species to the *Coccidae*, the females of which, as they mature, generally lose all trace of the members they possessed when born."

"The second or more oval form (Fig. 44, *e*), is destined to become winged. Its tubercles when once acquired, are always conspicuous; it is more active than the other, and its eyes increase rather than diminish in complexity with age. From the time it is one-third grown the little dusky wing-pads may be discovered, though less conspicuously than in the pupa state, which is soon after assumed. The pupæ (Fig. 45, *e*, *f*) are still more active, and after feeding a short time, they make their way to the light of day, crawl over the ground and over the vines, and finally shed their last skin and assume the winged state. In their last moult the tubercled skin splits on the back, and is soon worked off, the body in the winged insect having neither tubercles nor granulations."

"The winged insects are most abundant in August and September, but may be found as early as the first of July, and until the vines cease growing in the fall. The majority of them are females, with the abdomen large and more or less elongate. From two to five eggs may invariably be found in the abdomen of these, and are easily seen when the insect is held up to the light, or mounted in balsam or glycerine."

"As fall advances the winged individuals become more and more scarce, and as winter sets in only eggs, newly-hatched larvæ, and a few apterous egg-bearing mothers, are seen. These last die and disappear during the winter, which is mostly passed in the larva state, with here and there a few eggs. The larvæ thus hibernating (Fig. 44, *b*) become dingy, with the body and limbs more shagreened and the claws less perfect than when first hatched; and, of thousands examined, all bear the same appearance, and all are furnished with strong

* "It is not to be understood, in making these distinctions, that these differences of form are so constant that they can always be relied on; for the form of the body varies, so that the wingless mother may present the more perfect oval of that destined to become winged."