

toughened by the weather and are not so attractive to the grub. Immediately after this operation, a good handful of the following compost should be applied directly around the root and vine: Take equal parts of salt, quick-lime and hen-manure; place the lime on the floor first, and throw on water enough to thoroughly slack it; immediately spread the salt on top, following with the hen-manure. When the lime is well slacked, mix the whole thoroughly, and in a couple of weeks it will be ready for use, as above. Do not hill up the hops until the latter part of July or first of August, and the yard will not suffer any from grubs, but will remain clean and free from weeds the remainder of the season. When yards are hilled earlier than stated above, the grub sometimes works in them more than in late hilled ones.

To return to the skunks. They seem to have acquired the digging-out process to perfection—far better than the hop grower—as they are able to dig around the hills without the least injury to the vines. In Juneau county, Wisconsin, this little fellow—with an appetite for juicy grubs only equalled in degree by the pungency of his perfume—is the only positive remedy, as he works about the hop-hills or roots, cleaning out the worms in a few nights. One grower says: “I have seen ten acres where not a dozen hills would escape their little noses.”

It is worthy of note that in a majority of cases the growers report the borer as the most injurious insect in the hop yard, not excepting the hop-aphis.

LEAF-MINING ANTHOMYIDÆ.

BY J. A. LINTNER, ALBANY, N. Y.

Among our American species of Anthomyidæ, none have hitherto been known as leaf-miners. Several are depredators on the roots of garden vegetables, as indicated by the specific names of *Anthomyia ceparum*, *A. brassicæ* and *A. raphani* (the onion fly, cabbage fly and radish fly); some occur in excrementa, and one, a few years ago, was discovered as preying upon the eggs of the Rocky Mountain locust. During last year and the preceding a species (*A. betæ*) which had been almost unknown since its publication in 1860, has been seriously damaging the leaves of beets, in England, by mining them in tortuous channels and large blotches,

causing them to shrivel, dry up and die. In two counties alone, 1,624 acres of mangolds were infested (Ormerod). This last summer some *Anthomyia* larvæ were discovered by me in Middleburgh, N. Y., extensively mining the leaves of the garden beet (*Beta vulgaris*). Judging from published descriptions and figures, I believed it to be identical with the European species of the same habits, and that it had been a recent importation thence. Examples of the eggs, larvæ, puparia and flies were sent by me to Mr. R. H. Meade, of Bradford, England, who has been recently making special study of the Anthomians, and particularly of the North American species, as may be seen in a paper in the March number of the last volume (xiii) of the CANADIAN ENTOMOLOGIST, giving the result of his study of the collections in this family, belonging to the Museum of Comparative Zoology at Cambridge, Mass. Mr. Meade finds, among the examples which I sent to him, reared by me from my larval collections at Middleburgh, no less than three distinct species—all differing from *A. beta*—two believed to be undescribed—and one identified as *Chortophila floccosa* Macq. It seems somewhat remarkable that all these should have been obtained from larvæ feeding at the same time, upon a small garden bed of beets, containing about fifty square feet of surface. The description and general history of the new species will probably be given in my forthcoming Annual Report.

NOTES ON ISOSOMA ELYMI, FRENCH.

BY G. H. FRENCH, CARBONDALE, ILL.

In my notes in the March number of the CAN. ENT., the idea is conveyed that this species obtained from the wild Canada rye grass, may prove to be identical with the wingless form obtained by Prof. Riley and myself from wheat stalks, and which Prof. Riley has since named in the American Naturalist, *I. Triticum*. At the same time doubt was expressed as to their identity, because at the time of writing there were still larvæ in the grass straws, while *I. Triticum* pupated in the fall, both in the breeding jars and in the field. Since the article mentioned has appeared, I have