

This method of reaching the surface together with other snow habits of the insect were well illustrated in an enormous outbreak of *Achorutes socialis* Uzel that I observed one day in February, and which may be taken as a good example of snow appearances in general. But here, in order to explain how I came on the insects on this occasion, I must make a slight digression.

*Achorutes socialis* has a strong and distinctive but inconstant smell. I have never seen any reference to it in literature, but Dr. Folsom tells me that he has noticed it both from *A. socialis* and from the closely allied *A. packardii*. It is not easy to describe, but it reminds me most of the smell of that favourite fruit-salad of the small boy: a slice of raw turnip. Sometimes the scent can be caught from half a dozen captives in a vial, at other times a hundred of them give off no appreciable odour whatever. Similarly, during an extensive emergence, sometimes no smell at all can be noticed, and sometimes it is so strong that it is possible to discover an outbreak of the insects by the sense of smell alone. The first time I experienced this I was walking through a hardwood bush one morning in December, and not thinking particularly of springtails, when it suddenly occurred to me that a few moments before I had smelled *Achorutes socialis*. I retraced my steps, and about 50 feet back there they were to one side of my path, coming out of a mossy log in thick, blue-black agglomerations.

It was in the same way that I discovered the insects this day in February. A favourite winter trail of mine at one place goes down the middle of a beaver meadow about half a mile long by 200 yards wide, through which in summer a small, sluggish stream meanders to a sandy bay of the Ottawa River. The meadow is bordered by an open growth of moisture-loving shrubs and trees, such as speckled alders, black and white ashes and soft maples. These occupy a strip a couple of hundred feet wide, and on the drier ground behind, cedars, spruces, hemlocks and pines are mixed with elms and hard maples.

The temperature had been above freezing point for the preceding 24 hours, and three inches of wet snow had fallen in the night, bringing the total depth on the ground up to 18 inches. At noon the thermometer stood at 36° F., the sky was overcast, and the relative humidity was 91 per cent. It was not the kind of day that most people would choose for a snow-shoe tramp for the snow was very wet and the going heavy, but it was ideal snow-flea weather, so I was out bright and early. There was the usual sprinkling of *Isotomas* in the drier woods and *Achorutes* in the damper situations, but I found nothing out of the common until I reached the beaver meadow. Here, while pursuing my accustomed track, as I paused a moment to pick up a specimen, in an instant I caught the familiar smell of *Achorutes socialis*, wind-borne from the south side of the meadow. I followed up the scent and among the ashes and soft maples I found them.

They were coming up to the surface through the spaces in the snow around the trees and shrubs, some climbing the snow wall, and some the trunks and stems. Most of the latter sprang off on to the snow, but a good many remained on the trees, and either gathered in blue patches here and there or went wandering up the trunk, although not to any height, for above 10 feet I could find none. The principal area of emergence was between 50 ft. and 100 ft. wide, and extended all along the south side of the marsh,—a distance of about 800 yards. Over this space there were from 50 to 100 insects to the square foot.