THE SUSCEPTIBILITY OF THE EGGS OF *APHIS POMI* AND *APHIS AVENÆ* TO HYDROCYANIC ACID GAS FORMATION.

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It is of economic interest to note that the fumigation of young apple trees with hydrocyanic acid gas just before or shortly after the buds commence to swell not only controls the San José scale, but it also destroys the eggs of aphides.

In the spring of 1914, we procured from a local nursery seven apple trees well stocked with the eggs of *Aphis pomi* and *Aphis avenæ*. Three of the trees were fumigated for forty-five minutes with hydrocyanic acid gas (1 oz. KCN to 100 cubic feet, 1:1:3 formula), and the others were used as checks. None of the eggs on the fumigated nursery stock hatched, whereas large numbers hatched on the check trees.

This spring the foregoing experiment was duplicated, and the same highly satisfactory results were obtained—100 per cent. of the aphid eggs were destroyed.

In the 1914 experiment the nursery stock was fumigated eight days, and in the 1916 experiment six days before the eggs on the check trees commenced to hatch.

A CHANGE OF SYNONYMY IN *XYLOMIGES* (LEPID.).

BY F. H. WOLLEY DOD.

The species described by Smith as *Xylomiges pallidior* is identical with *simplex* Walk. Harvey's *crucialis*, hitherto misidentified as *simplex*, is distinct. Even after seeing Smith's type and possessing specimens of both forms, it was some years before I was at all sure that the species really existed, as the difference appeared to be merely varietal. But, as time went on and I saw and acquired more material, their distinctness became apparent. Having become satisfied as to the existence of two species, judged by superficial characters alone, I got Mr. Tams to make several mounts of the genitalia of each, including Vancouver Island specimens of both forms. These were found to differ in such a way as to make their separation quite easy. Being at present separated from my specimens and mounts by several thousand miles, I am unable to state concisely just what these differences are, but hope to make it clear some day.

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Smith published a photograph of his type in the Canadian Entomologist, leaving the identity of his species beyond doubt. I also possessed a specimen "Xd. type" with Walker's *simplex*. But as that comparison had been made at a time when I had failed to recognize two species, I was unable to place any reliance on the comparison. I was, however, quite satisfied as to the distinctness of *crucialis* from *pallidior*. Hampson published a figure of *pallidior*, made from another, of the type, sent to him by Smith, which is quite recognizable. His woodcut of *simplex* is not so good, but my notes on Walker's type were such as to lead me to suspect strongly that I had made a mistake and that Smith also had fallen into his oft-repeated error, in that, whilst recognizing two very closely allied species, instead of seeking a re-identification of *simplex*, he had chosen to assume its correctness, and created a synonym. I accordingly sent Sir George Hampson a few specimens of each, stating my suspicions, carefully pointing out the distinctive characters, and requesting him to re-examine Walker's type. His diagnosis was in accordance with my suspicions, and I have since visited the British Museum and corroborated his evidence, which results in the synonymy here cited. I regret being unable, at present, to publish a close comparison of the two species, for reasons given above, but feel safe in emphasizing the following points: *Crucialis* is slightly longer-winged than *simplex*, the discoidal spots are a trifle smaller, and the subterminal line or series of blackish streaks is arranged so as to form two oblique triangular shades. In *simplex* they form a more regular and even series, about parallel with the termen. The two species occur together and are not rare on Vancouver Island. Whilst *crucialis* has usually the clearest white ground colour of the two, both have a dark, almost suffused, grey variation. I have been misled into mistaking the extreme dark variations of either species for one form, the corresponding light variations for the other, and must warn others against falling into this error. It must be admitted that the two species are not easily distinguished unless well known.

The synonymy stands as follows:—

Xylomiges simplex Walk.

" *pallidior* Smith.

Xylomiges crucialis Harr.

" *simplex* Smith et al., nec Walk.