NOTES ON SOME FOREST INSECT AND MITE PESTS.

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The following notes deal with various problems that have come to the notice of the writer in the course of his work during the past two years. These concern chiefly the Beech forest.

**Ochrocydus huttoni:**—

Material collected from living beech (*Nothofagus solandri*) near Oxford revealed the presence of an insect bearing a strong resemblance to the longhorn *Prionoplus Reticularis* (Huhu). The locality from which this material came was visited in January, 1932, and it was found that several apparently sound, healthy trees were being seriously damaged. Affected trees showed large bore holes from which dust and frass were being ejected and forming prominent marks down the sides of the boles. Through the kindness of Mr. Montgomery an affected tree was felled and a portion brought to the School of Forestry where the insects concerned could be examined and studied.

The damage proved to be the work of *Ochrocydus huttoni*, one of the two Prioniinae listed for New Zealand. Although *Ochrocydus* bears a strong resemblance to *Prionoplus*, particularly in the larval and pupal stages, some doubt exists regarding the correctness of placing it in the subfamily *Prioniinae* rather than in the *Cerambycinae*. References to *O. huttoni* in the literature are extremely scanty. Hudson “Manual of N.Z. Insects,” states “Closely allied to the above, (*P. Reticularis*) is *O. huttoni* which may be at once known by its smaller size and plain elytra; it is very much scarcer than *P. reticularis*, but may occasionally be cut out of dead manuka trees in company with its larva.” Although the adult can be readily recognised by those features referred to by Hudson, the larva and pupa are not so well known and little is known about the life-history. *O. huttoni* has been recorded from several places in the North Island, mostly from the western portion of the Island. In the South Island it has been recorded from the Nelson area, Kaikoura, Waipara, and from Oxford in 1932. There seems to be considerable lack of information as to the types of trees attacked apart from beech and manuka.

The *Ochrocydus* larva can be fairly easily distinguished from the Huhu grub by the heavily chitinized brown plates which cover the upper region of the thorax just behind the head, and by the appearance of the terminal segments of the body which are distinctly short, while those of the Huhu, particularly the last two, are comparatively long and
slender and bear distinct lateral ridges. The pupa of *C. huttoni* is slightly smaller than *P. reticularis* and more parallel sided. The thorax of *O. huttoni* is no wider than the hind body whereas the Huhu pupa has the thorax slightly wider than the abdomen which gives it a less parallel sided appearance. The most convenient distinguishing feature however, is the presence on *Ochrocydus* of numbers of stout spines on the upper surface of the abdomen whereas the Huhu pupa has merely a slight covering of very short spines. With the aid of a hand lens these features ought to be sufficient for anyone to distinguish these two insects in their various stages when met with in the bush.

The portion of beech tree brought to the Forestry School in 1932 was heavily infested with larvae. When the log was cut up into small portions it was found to be completely riddled with bore holes and had the appearance of having been attacked over a series of years, probably by more than one generation of beetles. Before pupating the larva constructs a chamber with an opening to the outside, and blocks up the ends of the chamber with quantities of coarse shreds of wood. Large quantities of this shredded wood were taken from bore holes in standing trees at Oxford, and much of it was found in the affected tree brought to the Forestry School. It would appear that this insect may be of much greater economic importance than the Huhu which confines its attention to dead wood or to the dead portions of living trees. Although *O. huttoni* has only been recorded from a few places it may still prove to be much more widely dispersed than at present known and there is every possibility that its larva has been confused with that of the Huhu.

**Eriophyidae (Phytoptidae) or Gall Mites:**

Little, if anything, seems to be known regarding the presence or harmfulness in New Zealand of these extremely small, vermiform, four-legged mites. Many species of Eriophyid mites have been described from Britain. There is the widespread, destructive *Eriophyes ribis* which causes the "Big-Bud" disease of black currant bushes. Other bud-infesting species occur in Hazel, Yew and Birch, while gall-forming species are found on Lime, Alder and Salix spp. Malformations caused by Eriophyid mites to flowers and fruit of Ash, Lime and Hawthorn are fairly common.

While examining material from Beech (*Nothofagus solandri*) from Oxford, in January, 1932, it was noticed that several buds had the appearance of being in an enlarged and unhealthy condition. A microscopic examination
of these large, unopened buds revealed the presence of considerable numbers of Eriophyid mites. On another occasion, September, 1933, while examining material from Beech (*Nothofagus cliffortioides*) collected in the bush on Mt. Misery, Cass, the writer found many leaves showing small light-green nodules on the underside. Each gall appeared to have a small opening on the upper surface of the leaf communicating with the outside. On opening one of these galls it was found to be swarming with Eriophyid mites very similar in appearance to those found in the Beech buds from Oxford. It is, of course, unlikely that the same species was concerned on both occasions as bud dwellers are usually distinct from gall-formers. The activity of the mites in the galls and the presence of an opening to the outside would suggest that the mites were migrating. It is interesting to note that Dr. Miller, “N.Z. Forest Insects,” states: “A very common gall infests the leaves of *Nothofagus apiculata* in New Zealand. This gall, which is wart-like in form and brownish in colour, appears to be formed by a species of mite, but no specimens have been yet found in the galls.” The writer has frequently found brown galls on the leaves, and as these were always empty it is presumed that the mites originally inhabiting them migrated elsewhere. Much remains to be known about Eriophyid mites and their life-histories in New Zealand.

*Cecidomyiidae:*—

Through the courtesy of Mr. Foweraker it was brought to my notice that an insect was damaging the buds of Beech (*Nothofagus cliffortioides*) on Mt. Misery, Cass. Material collected towards the end of August, 1933, revealed that the buds were harbouring pupae of a Cecidomyiid fly. Some of the material under observation was kept in a tin and numbers of adults hatched out leaving a white, delicate, transparent pupa case protruding from the unopened, damaged bud. A visit was paid on 19th October, 1933, to the area from which this material was collected and an inspection revealed that almost every beech tree examined had been affected. Large numbers of buds showed an empty pupa case, and in some instances two empty cases in a single bud. No unhatched pupae were seen on this date. Although individual trees showed evidence of having been heavily infested, there was surprisingly little appearance of the tree being seriously damaged as a result.

This Cecidomyiid fly from beech does not appear to agree with any of the 25 known species in New Zealand.
Maskell, who describes the native species of New Zealand, states that he has not had time to investigate life histories, and also that he believes the number of species in New Zealand probably exceeds a hundred. The species recorded here belongs to the sub-family Cecidominae and is most probably a representative of the genus Diplosis. In Britain, galls formed by Cecidomyiid gnats are common objects on Hawthorn, Yew, Lime, Oak, Beech, various Salix, and Spruce. Simaethis combinatana *:

In the autumn of 1933 the seeds of a Ribbonwood (Hoheria lyallii) at Lincoln were being eaten by the caterpillars of Simaethis combinatana. These caterpillars are rather distinctive in appearance, being light-coloured with a dark brown head and eight black wart-like marks on each body segment arranged in two rows consisting of two and six respectively. The manner of feeding was rather peculiar, the seeds being eaten, one after the other, so that finally a circular tunnel was left at the base of the wings. The Ribbonwood was examined during the winter of 1933 and the writer was surprised to find large numbers of caterpillars in the centres of dead branches. Dead branches containing caterpillars and chrysalids were collected and stored in a glass jar, and moths began to hatch out about the middle of October. The opportunity was taken to collect dead branches from ribbonwood trees growing on the sides of Ribbonwood creek in the Cass district on 21st October, 1933. When these were examined later it was found that they were harbouring numerous pupae and a few larvae of apparently the same species of moth as that attacking the ribbonwood at Lincoln.

It would appear that after feeding on the seeds in the autumn the caterpillars bore into the dead branches of the tree, excavate the pith and remain there during the winter, cutting an exit hole to the outside before pupating. Hudson, "N.Z. Moths and Butterflies," states in reference to S. combinatana, "The larva feeds on young shoots of Erechites prenanthoides, drawing the tops of the plant together and forming silken galleries amongst the leaves. It also feeds on wharangi (Brachyglottis repanda) but when living on this plant it shelters itself under a silken curtain on the upper surface of the large flat leaves, eating the fleshy portions only."

Since there are two generations per year it seems as if the feeding habits and pupation site of the two broods may be very different.

* This identification requires verification.