

*Sirex noctilio* will oviposit in wood with a wide range of moisture content. These, based on the oven-dry weight, have been found as high as 200% and as low as 20%. However, the number of actual insertions of the ovipositor per square foot of bark surface varies somewhat with the moisture content of the wood, and the number of eggs deposited vary in a similar manner. From limited tests at Nelson in March 1957, it would appear that female woodwasps may show preferences for wood with a certain range of moisture present. This preferential moisture content can be determined by the ratio of eggs to oviposition punctures. It would appear that, where the moisture content of wood is high (over 90% of oven-dry weight), the female woodwasp inserts her ovipositor many times without laying eggs. During these insertions the symbiotic fungus is inoculated into the wood, and these inoculations greatly outnumber the number of eggs deposited, the ratio being as high as 12 to 1. In wood with a moisture content between 40 and 75 per cent, the number of eggs laid increases in relation to the number of inoculations of the fungus, the latter always being greater than the former, but the ratio being as low as 5:1 and the optimum moisture content for oviposition being about 60%, based on oven-dry weight. It would appear that few eggs are deposited in wood with 25 per cent moisture content or lower (Table I).

TABLE I

Log No.	Moisture Content % O.D. Wt.	No. Insertions of Ovipositor	No. Actual Punctures per Insertion Point	No. Eggs per Puncture
1A	157	22	1.1	0.11
1B	189	17	1.0	0.06
1C	105	41	1.3	0.12
2A	63	50	1.6	0.20
2B	64	54	1.6	0.15
2C	48	59	1.8	0.20
3A	25	12	1.1	0.00
3B	20	7	1.0	0.00
3C	23	9	1.0	0.00

Ovipositions by *Sirex noctilio* F. in *Pinus radiata* D. Don. related to moisture content of the wood (March 1957 at Nelson).

The number of eggs deposited by a female woodwasp varies according to her size, longevity and those conditions which affect oviposition activity, such as air temperature and moisture content of the wood. Examination of the ovaries of variously-sized *S. noctilio* have shown that the paired ovaries are compact, ball-like structures about 5mm in diameter, the common oviduct of each giving rise at one point to a number of ovarioles (often 8), each of which again divides into about 4. The total number of ovarioles varies between 24 and 36 depending on the size of the insect, the average number being about 32. Sometimes the number of ovarioles differs between one ovary and the other in the same insect.

TABLE II

The Number of Eggs in the Ovaries of a Newly Emerged *Sirex noctilio* F.

Number of Ovarioles	Frequency of Eggs per Ovariole							Total Eggs per Ovary
	1	2	3	4	5	6	7	
Right Ovary 32	—	1	2	5	10	12	2	164
Left Ovary 31	—	—	1	6	10	12	2	163
Total 63		1	3	11	20	24	4	327

Average number of eggs per ovariole = 5.2.