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A CHECKLIST OF THE CONE & SEED INSECTS OF IDAHO



by

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A Checklist of the

Cone and Seed Insects of Idaho

D. L. Kulhavy, J. W. Dale¹ and J. A. Schenk^{2,3}

Cone and seed insect research (C & S), conducted at the University of Idaho since 1957, has been supported by both State and Federal funds administered through the College of Forestry, Wildlife and Range Sciences. From 1957 to 1966 C & S research was supported by SR #55 (Special Research); from 1966 to 1967, by STAR funds (Short Term Applied Research); and from 1968 to the present by McIntire-Stennis funds. A special McIntire-Stennis Project (M.S. #5) was funded in 1966 and 1967.

General objectives of this research were to: (1) inventory the insect species attacking cones and seeds of Idaho conifers; (2) identify, describe and determine the extent of damage caused by both immature and adult insects; and (3) determine ecological life histories and intra- and interspecific relationships of the various cone and seed insects, and the more important entomophagous species.

More specific objectives of particular projects were to: (1) evaluate factors influencing cone and seed losses in relation to establishment and management of seed orchards and seed-production areas; (2)(a) correlate fluctuations of insect populations to fluctuations of cone crops and major

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environmental factors, and (b) obtain a quantitative description of the influence of fluctuations of cone crop to insect populations; (3) relate damage and population levels to the major site factors and develop a rating system by which individual stands can be described and compared on the basis of potential production of undamaged seed; (4) develop direct or indirect methods of control which will cause the least disruption of the ecosystem; and (5) evaluate the effectiveness of the systemic insecticide Meta-Systox-R for the control of cone and seed insects.

This checklist presents an inventory of the cone and seed insect species collected in Idaho from 1957 to 1974 and includes 191 species from 121 genera, 56 families, and 9 orders. Species collected by U. S. Forest Service personnel from Ogden, Utah, are marked by an asterisk (*); cone and seed insects collected from the University of Idaho are not marked.

Insects collected by both groups are marked with a double asterisk (**). Records of the Forest Service collections were published in 1973.⁴

The checklist is divided into two parts; the first part lists the cone and seed insects by host tree species, the life stage of the insect collected (N = nymph, L = larva, P = pupa, A = adult) and the specialist who provided the determination. The second part presents a composite list of all the cone and seed insects along with a code (Table I) for the host tree(s). Major publications, theses and dissertations on C & S research at the University of Idaho are presented in Appendix A.

⁴Parker, D. L., and Maxine W. Minnoch. 1973. A revised list of seed and cone insects collected from native conifers in the Intermountain Region. Branch of Forest Insect and Disease Prevention and Control, U. S. Forest Service, Ogden, Utah. 15 p.



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