wick, 1958) and Olethreutids (McKay, 1959). Larvae of the following species were examined:

Larentiinae. *Asthena pulchraria* Dbldy. (all instars); *Chloroclystis paralodes* Meyr. (all instars); *C. semialbata* (Walk.) (all instars); *Hydriomena callichlora* (Butl.) (all instars); *H. similata* (Walk.) (instars 3–5); *H. deltoidata* (Walk.) (instar 5); *Tatosoma fasciata* Philp. (all instars); *T. tipulata* (Walk.) (instars 3–5); *Venusia undosata* (Feld.) (all instars); *V. charidema* Meyr. (instar 5); *Xanthorrhoe cymozeucta* (Feld.) (instars 3–5); *X. rosearia* (Dbldy.) (all instars); Oenochromatinae: *Samana falcatella* Walk. (instars 3–5); *Dichromodes nigra* (Butl.) (instar 5); *Epirrhanthis alectoraria* (Walk.) (all instars); *E. ustaria* (Walk.) (all instars); *E. veronicae* Prout (all instars). Sterrhinae: *Leptomeris rubraria* Dbldy. Ennominae. *Selidosema aristarcha* Meyr. (all instars); *S. dejectaria* (Walker) (all instars); *S. fenerata* Felder (all instars); *S. fascialata* (instar 5); *S. indistincta* (Butler) (all instars); *S. leucelaea* Meyr. (all instars); *S. modica* Philpott (instars 2–5); *S. monacha* Huds. (instars 2–5); *S. panagrata* (Walker) (all instars); *S. pelurgata* (Walker) (all instars); *S. productata* (Walker) (all instars); *S. prototoxa* Meyrick (instars 2–5); *S. rudiata* (Walker) (all instars); *S. suavis* (Butler) (all instars); *Gargaphia muriferata* Walker (instars 1–3, 5); *Sestra flexata* (Walker) (all instars); *Sestra humeraria* Walker (all instars); *Azelina fortinata* (Walk.) (instars 2–5); *A. gallaria* (instars 3–5); *A. variabilis* (Warr.) (all instars); *Hybernia indocilis* (Walker) (instars 3–5); *Declana atronivea* (Walker) (all instars); *D. egregia* (Felder) (instar 5); *D. feredayi* Butler (instars 1–3, 5); *D. floccosa* Walker (all instars); *D. glacialis* Hudson (all instars); *D. griseata* Hudson (instars 4–5); *D. hermione* Hudson (instars 2–5); *D. junctilinea* (Walker) (all instars); *D. leptomera* (Walker) (all instars); *D. niveata* (Butler) (instars 3–5). All adult determinations were made by the author and most were checked against specimens in Dominion Museum and Entomology Division, Nelson, collections.

Larval and most of the adult material is in the collection of the Forest Biology Survey, Forest Research Institute, Rotorua; some adult material was loaned by Entomology Division, Nelson. Most of the larval material was collected by the Forest Biology Survey, and the writer wishes to thank his colleagues for their assistance in the preparation of this paper.

## External Morphology. I. *Chaetotaxy*

The terminology for abdominal setae is a modification of Hinton's (1946) system; setae of the anal proleg are named according to Singh (1953) and the anal shield setae according to McGuffin (1958b). Singh's notation for the abdominal segments (A1, A2, etc. for first, second abdominal segment, etc.) is adopted for brevity. The terms "primary" and "subprimary" refer to setae which appear in instar I and instar II respectively. Secondary setae are those which appear in instars III–V.

Proprioceptor and tactile setae are present on Lepidopterous larvae in definite patterns (Hinton, 1946) and the Geometridae are no exception to this rule (McGuffin, 1958b). The proprioceptors, responsive to intersegmental movement, are situated on those areas overlapped during segmental contraction. They are not considered in this paper. The tactile setae, responsive to contact with surrounding objects, are situated more in the mid-section of each segment and are longer than the proprioceptors. Using the homologies proposed by Hinton, each typical Ditrysian abdominal segment bears five groups of setae. Dorsally, there are the dorsal (D) setae, $D_1$, $D_2$, both primary. More or less directly ventrad of $D_1$ is the subdorsal group, containing a large $SD_1$ and a small or rudimentary $SD_2$, both primary. The lateral group consists of 2 primary setae $L_1$ and $L_2$, and two subprimary setae $L_3$, $L_4$ (Geometridae) or one subprimary seta $L_3$ (other families). The subventral group consists of two primary setae $SV_1$, $SV_2$ and one subprimary