VARIATION IN GYPSY MOTH, WITH COMPARISONS TO OTHER *LYMANTRIA* SPP.

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ABSTRACT

Specimens of gypsy moth, *Lymantria dispar* (L.) *sensu lato* were displayed in museum trays. Many specimens were quarantine laboratory reared during the 1989 season to provide samples (wing venation, frozen adults, prepupal haemolymph, larval feeding behavior, egg mass hair color, head capsule coloration and larval development) for various studies. Material reared was from HOKkaido, HONshu, and KYUshu, JAPAN; BEIjing, CHINA; Sibenik, YUGOSLAVIA; Queen Annes, MARYLAND (QAMD); and our standard BIRL culture. All (except HON) were individually reared (60 specimens each) in the first rearing using prepared diet. Varying numbers of additional specimens were reared on diet or *Betula* leaves in multiple larval containers. All were examined daily.

Specimens were used first to satisfy the various study needs. Remaining specimens were frozen and subsequently mounted. Reared adults illustrate the intraspecific variation present in L. dispar, sensu lato. Most striking was the HON strain with very dark brown males and females with a dark wash to the general color and unusual large size in both. Maximum male forewing length was 32 mm in HON compared to only 23 mm in QAMD. Maximum female wing length was 43, 41, 38, 32, 32, 29, and NA mm in HON, KYU, HOK, BEI, YUG, BIRL and QAMD respectively (flight impossible in the latter three). Ability for flight was demonstrated in gravid females for HON, HOK and BEI but not in YUG. Morphological comparisons between these two functionally polymorphic forms illustrated the degree of wing reduction in the non-flying forms. HON pupae weighed nearly twice as much as the representative North American forms since maximum female pupal weight was 5.43 g for HON but only 2.47 g in QAMD. Maximum egg production in the three largest HON females was 1550, 1482, and 1375 eggs while the maximum was 1028 eggs per QAMD female. Two black-backed larval mutants appeared in YUG samples. In summary, size (expressed either as forewing length, pupal weight or female egg production), body color, and female flight capability clearly differed among the samples reared. As we will repeat these rearings in 1990, and we intend to incorporate several Russian samples, we expect to see even more evidence of intraspecific variation in gypsy moth.

Specimens of congeneric species, *mathura* Moore, *monacha* L., and *sakaguchi* Matsumaura (all from Japan) and *atemeles* Collenette (Thailand) were displayed to illustrate the similarities of these species to *dispar*. These permitted a comparison of the differences between intraspecific and interspecific variation.