GLANDULAR PUBESCENCE IN VARIOUS MEDICAGO SPECIES

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In a study of the occurrence of glandular pubescence in the various species of Medicago, an attempt was made to determine to what extent this character varies with environmental conditions. It has been observed that glandular pubescence is much more strongly developed in some species than in others. Certain species of Medicago have glandular pubescence on stems, leaves, and pods; others on the pods only; while some have none at all. Of the species studied the following have glandular pubescence strongly developed on the pods at least: *M. soleirolii*, *M. rigidula*, *M. minima*, *M. disciformis*, *M. blancheana*, *M. tunetana*, *M. falcata viscosa*, and *M. gaetula*. Other species having glandular pubescence less well developed or showing only under certain conditions are *M. murex sorentinii*, *M. orbicularis*, *M. lupulina*, and *M. sativa*.

In some species of Medicago it has been noted that very minute glandular hairs may be present on the young green pods and disappear with later development. In other species in which only minute glandular hairs occur early in the season, both young and mature pods have well-developed glandular hairs later during hot, dry, and adverse weather conditions. Thus in plants in which glandular hairs can be noted on the pods early in the season only with a low-power compound microscope, glandular pubescence is quite strongly developed later in hot, dry weather.

Inasmuch as subspecific distinctions have been made in various species of Medicago on the presence or absence of glandular pubescence, the variability of this character is of value in determining the validity of such classification. In these studies *M. lupulina* and *M. orbicularis* have been especially noted. Individual plants have been observed throughout the season with regard to glandular pubescence development.

On April 27, 1915, at Chico, Cal., a plant of *M. orbicularis* was observed as having both young and well-developed pods that were not glandularly pubescent as the term is usually used but had glandular pubescence which could be seen with a low-power compound micro-

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1 Contribution from the Office of Forage-Crop Investigations, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C. Received for publication January 24, 1918.