

# Task 3.3F. Microscopic features of *Opuntia* species based on Scanning Electron Microscopy

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Using standard scanning electron microscopy (SEM) techniques, the morphological differences among several species of *Opuntia* were studied. Slight differences were seen in the retrorse barbs of *Opuntia affinis grandiflora*, as compared to *O. humifusa* and *O. pusilla*. Aperture or quantity of pores and areoles on pollen surfaces were substantially greater in *O.aff. grandiflora* than in *O. humifusa*, *O. pusilla*, or a putative hybrid of the two (Figures 3.3F-1 through 3.3F-3). Minor differences in seed topology also were noticed among species. The arrangement of glochids produced from stem areoles was not readily distinguishable among species. It is anticipated that some of these microcharacteristics will prove useful in delimiting species of *Opuntia*.



Fig. 3.3F-1. *Opuntia pusilla* pollen at 750' magnification.



Fig. 3.3F-2. *Opuntia affinis grandiflora* pollen at 811' magnification.

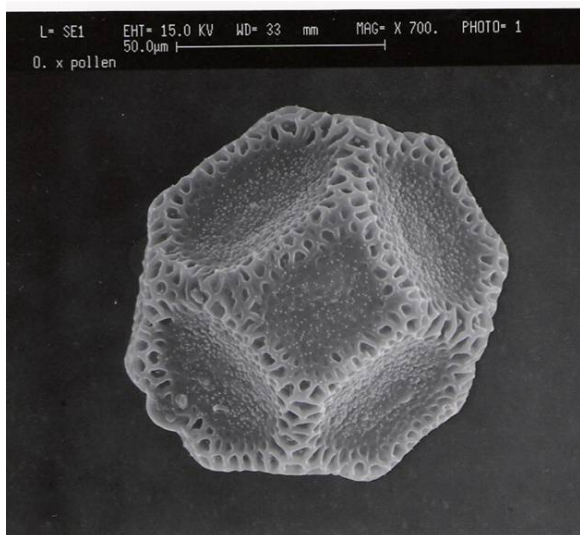


Fig. 3.3F-3. *Opuntia humifusa* ' *O. pusilla* "hybrid" pollen at 700' magnification.