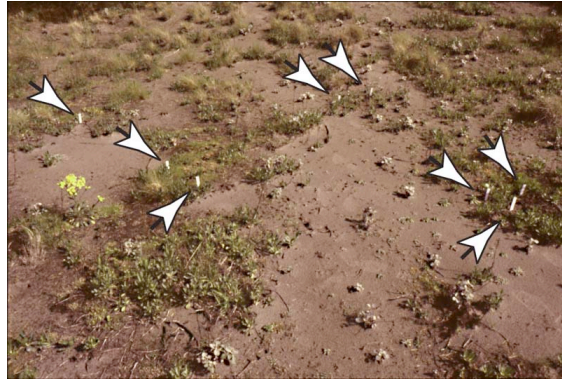




1



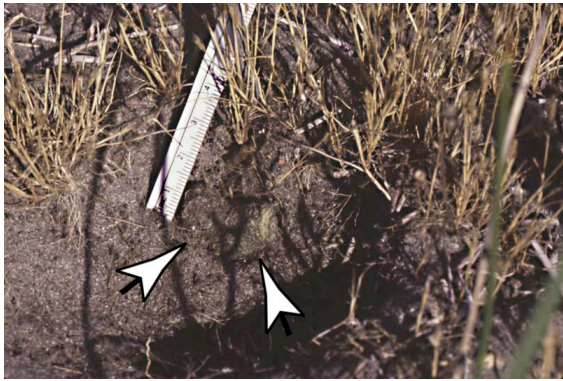
2



3



4



5



6

Figures 1-6. *Osmia integra* nesting habitat and nests.

Figure 1. Nest site in sparse vegetation dominated by *Solidago spathulata* DC.

Figure 2. Approximately 15 square meter area containing 8 nests marked by white plastic stakes (arrows).

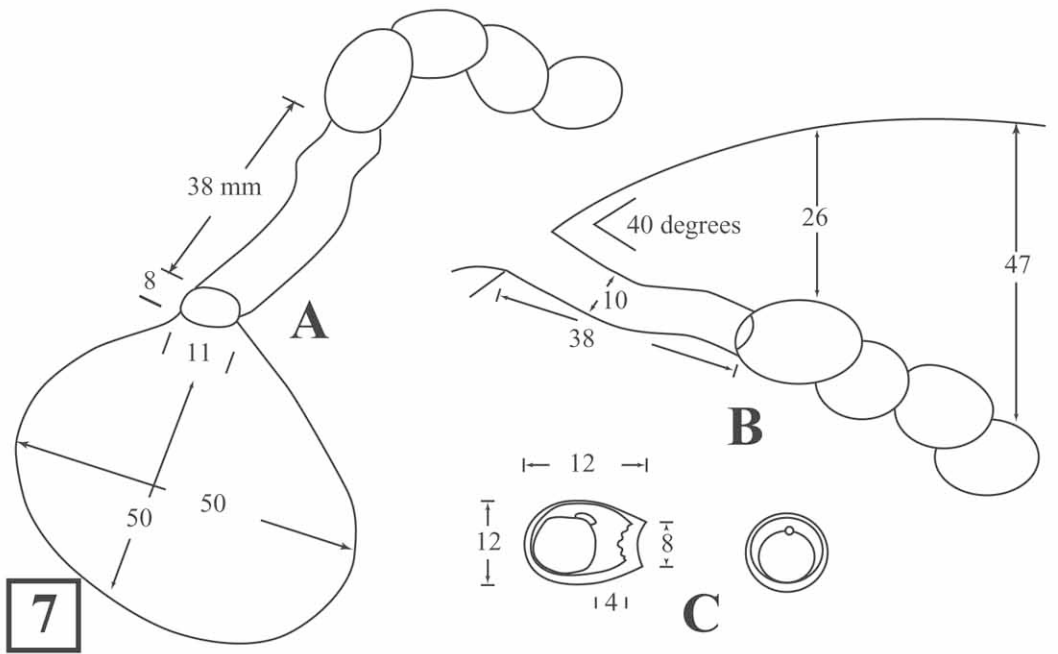
Figure 3. Overview of habitat shown in Figs. 1 and 2.

Figure 4. Overview of study site. Foredunes and Moving Dunes in background. Young Forest left center.

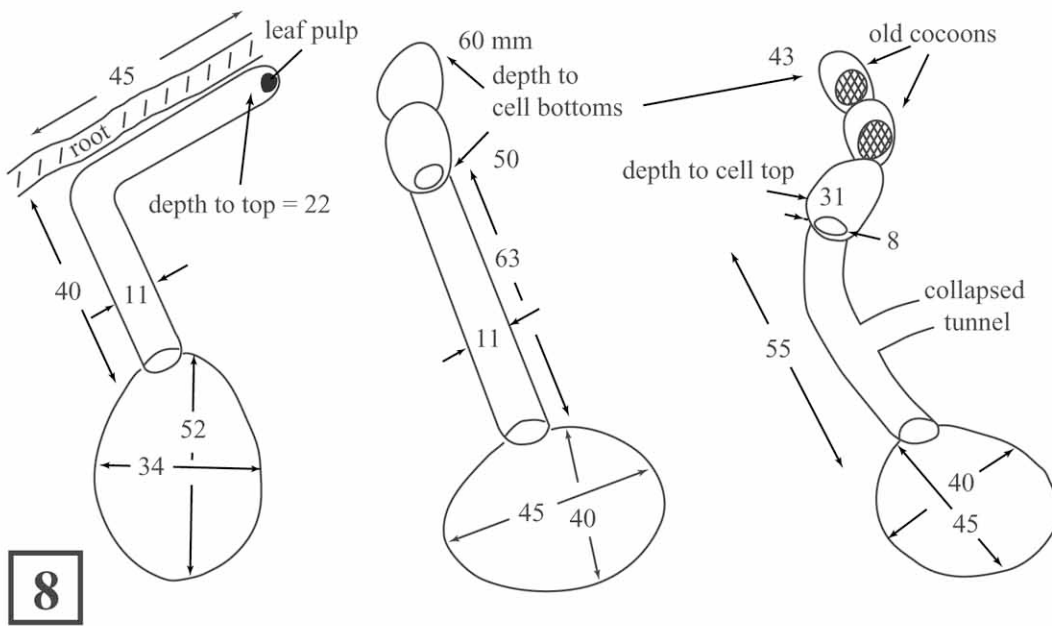
Established dunes with patch of blooming *Lathyrus littoralis* in foreground.

Figure 5. Two brood cells (arrows) exposed in loose sand within root zone of grasses.

Figure 6. Nest Entrance & tumulus.



7

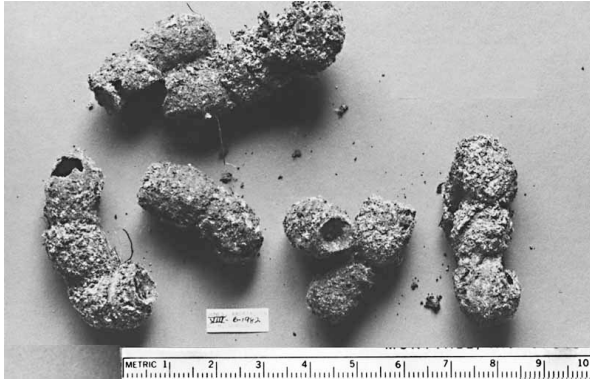


8

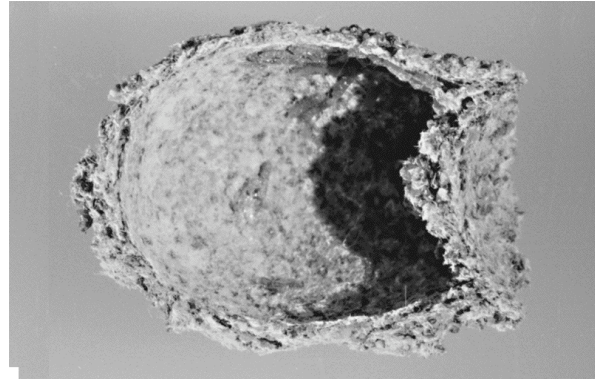
Figures 7-8. *Osmia integra* nest architecture.

Figure 7. Dorsal (A) and side (B) views, with detail of cell construction and egg placement (C).

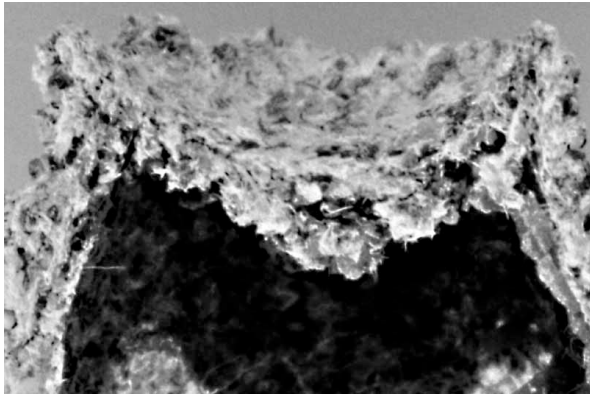
Figure 8. Variation in nests.



9



10



11



12



13



14

Figures 9-14. *Osmia integra* brood cell architecture.

Figure 9. Cell series from six nests, showing the orientation of cell axes with respect to each other, cell caps, and an emergence hole. The single cell above 4 cm mark was propped against another nest to illustrate cap. The four attached cells at top were from a single nest.

Figure 10. Sagittal section of cell with fresh cocoon removed, showing ventral thickening and cap detail.

Figure 11. Sand grains incorporated into a fibrous plant pulp matrix of cell wall and cap. Cell bottom at left.

Figure 12. Pre-defecation larva and fresh cocoon.

Figure 13. Uncompleted cell showing masticated pulp, threshold and oval entrance.

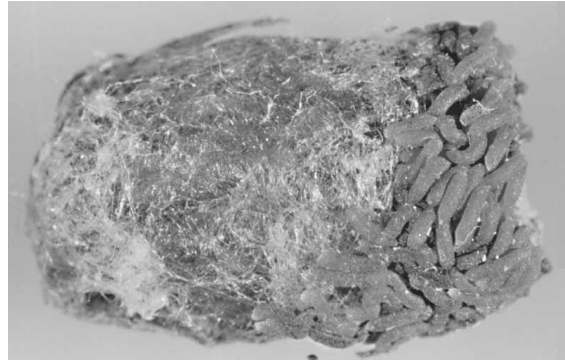
Figure 14. Provision and first instar larva.



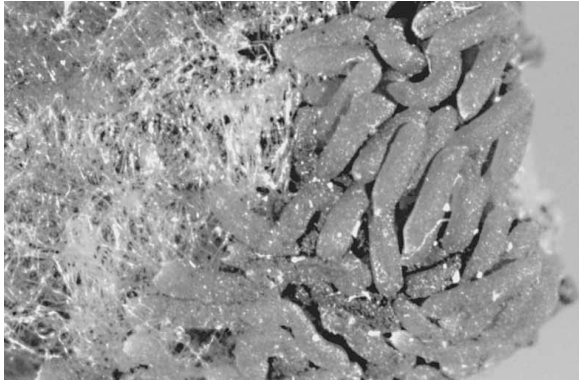
15



16



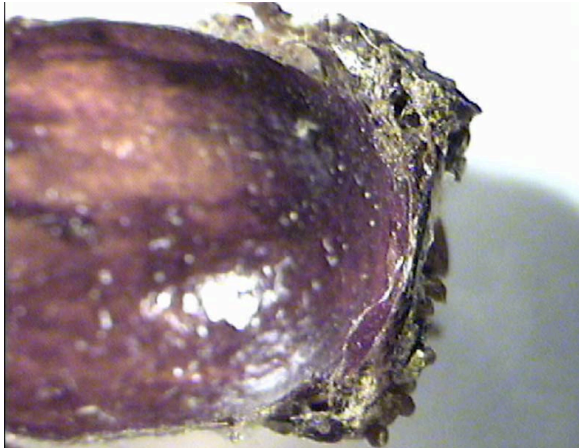
17



18



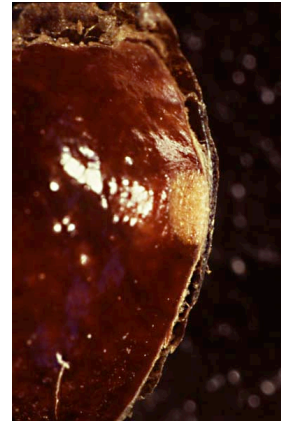
19



20



21



22

Figures 15-22. *Osmia integra* pollen and cocoons.

Figure 15. Pollen from *Lathyrus littoralis* flower.

Figure 16. Pollen from scopa of *Osmia integra* forager.

Figure 17. Fresh cocoon showing outer fibrous layer and fecal pellets at anterior end.

Figure 18. Detail of fecal pellets.

Figure 19. Year-old weathered cocoon with outer fibrous layer missing, exposing a flattened nipple at anterior end.

Figure 20. Longitudinal section through anterior of a fresh cocoon. Anterior nipple is obscured by the outer fiber layer, but is by evident by the delamination of the middle layer and inner layers at bottom.

Figure 21. Longitudinal section through fresh cocoon from which most of the outer fibrous layer has been removed. Note separation of inner and middle layers during sectioning. Nipple is obscured at bottom.

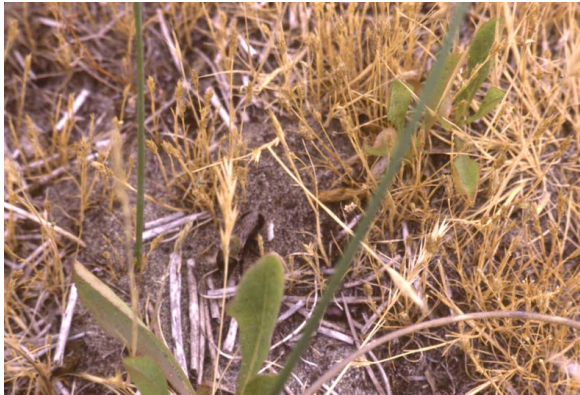
Figure 22. Section through nipple illustrating the delamination of inner and middle layers, fine fibers forming the pore, and glassy surface of inner layer.



23



24



25



26

Figure 23. *Osmia integra* female foraging on *Trifolium wormskioldii*.

Figure 24. Female foraging on *Abronia latifolia*.

Figure 25. Female excavating nest tunnel.

Figure 26. Female gathering leaf pulp from strawberry (*Fragaria chiloensis*).

ADDITIONAL PHOTOGRAPHS NOT IN PUBLISHED ARTICLE



27 A

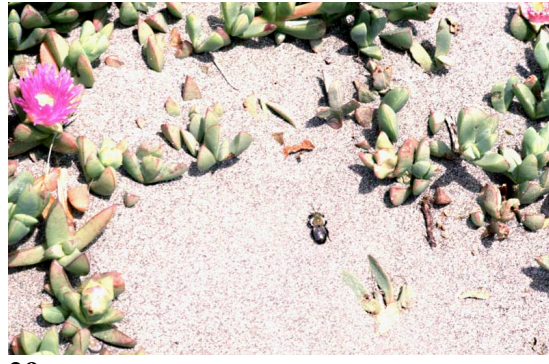


27 B

Figure 27. *Osmia integra* females freshly emerged from cocoons in vitro illustrating variation in hair color on notum and anterior abdominal segments. A. Individual with reddish hairs. B. Individual with blonde hairs.



28



29

Figure 28. Rodent predation of *Osmia integra* brood cell.

Figure 29. Male *Osmia integra* perched on sand near sea fig (*Mesembryanthemum chilense*) being patrolled by the male.