is capable of intraspecific as well as interspecific parasitism. No haustorial connections were found with *Frankenia grandifolia* in the lab or with *Triglochin concinnum, Monanthochloe littoralis* or *Cressa truxillensis* in the field despite association with all four species in the field. The fact that *Helianthus annuus* was also an effective host indicates a lack of host specificity. The possibility exists therefore that salt marsh bird's beak distribution is a function of a strong habitat preference rather than a host preference in *Cordylanthus maritimus* subsp. *maritimus* as is indicated with *Cordylanthus maritimus* (Chuang and Heckard 1971).

There was no observable increase in vigor in the laboratory specimens associated with hosts and therefore the type of benefit to salt marsh bird's beak from these hosts is still uncertain. Chlorophyll is present in salt marsh bird's beak as is often the case in parasites that utilize many small, lateral (often ephemeral) haustoria. These parasites require a certain degree of photosynthetic efficiency to carry them through early development and search for hosts. The presence of chlorophyll may also help to bridge periods without hosts (Kuijt, *The Biology of Parasitic Flowering Plants,* Univ. California Press, 1969).

Parasitism undoubtedly permits salt marsh bird's beak to flourish in the hot, dry conditions of summer when most other annuals have completed their life cycles. This mechanism has likely been of considerable importance in successfully equipping *Cordylanthus maritimus* subsp. *maritimus* for survival in western North America.— JULIE M. VANDERWIER and JUDITH C. NEWMAN, Natural Resources Management Office, Pacific Missile Test Center, Point Mugu, CA 93042. (Received 28 Oct 1983; accepted 12 Jan 1984.)

STORAGE OF *Sisyrinchium* (IRIDACEAE) POLLEN.—An important aspect of biosystematic research is interspecific hybridization. In my study of *Sisyrinchium* sect. *Bermudiana* (Iridaceae), plants were grown under nearly identical conditions but it was impossible to promote simultaneous flowering. It was necessary, then, to store pollen until stigmas became receptive. Deep-freezing has been used successfully for long-term storage of crop pollen (Nath and Anderson, Cryobiology 12:81–83. 1975; Barnabas and Rajke, Ann. Bot. 48:861–864. 1981) and studies in the Orchidaceae and a few other taxa (Meeyot and Kamemoto, Amer. Orchid Soc. Bull. 38:388–393. 1969; Löve and Löve, Plant Chromosomes. 1975) have shown that binucleate pollen can remain viable for several months if stored at 0–8°C with a desiccant. Although *Sisyrinchium* and other members of Iridaceae have binucleate pollen (Brewbaker, Amer. J. Bot. 54:1069–1083. 1967), such viability data were unavailable for this genus.

My objective in this study was to ascertain the length of time *Sisyrinchium* pollen (binucleate) would remain viable, when stored at 5°C.

Dehiscing anthers were dissected from numerous flowers of *Sisyrinchium montanum* E. L. Greene, placed in screw-capped glass vials, and stored at 5°C. Pollen from anthers stored for 2, 10, 15, 30, and 60 days, and from newly dehiscent anthers of *S. montanum,* were placed on sterile media consisting of 2% agar and 15% sucrose (Rodionenko and Burova, Bot. Zhurn. [Moscow and Leningrad] 55:300–302. 1970) and incubated at 25°C for 24 h. The samples were then examined with a light microscope and the number of pollen tubes was recorded. Three trials were made from each storage treatment, and the fresh pollen was used as a control for all treatments.

TABLE 1. VIABILITY OF STORED POLLEN OF *Sisyrinchium* AS ASCERTAINED BY GERMINATION TESTS. *600 grains examined per sample (200/trial).

Number of days in storage at 5°C	Total number of pollen grains germinating*	Mean germination
0	579	96.5% (96–97.5)
2	579	96.5% (95–97.5)
10	581	96.8% (95–99)
15	513	85.5% (84–87.5)
30	440	73.3% (70–76)
60	264	44.0% (38–49)

Pollen remained strongly viable through 10 days; thereafter, germination decreased with continued storage (Table 1). For short-term pollen storage, a desiccant is not necessary.—ANITA F. CHOLEWA, Department of Biological Science, University of Idaho, Moscow 83843. (Received 21 Oct 1983; accepted 14 Feb 1984.)

INFLUENCE OF SLOPE ASPECT ON POSTFIRE REPRODUCTION OF *Encelia farinosa* (ASTERACEAE).—Chaparral shrub species regenerate rapidly after fire by vegetative sprouting from root crowns, or germinating from dormant seed (Hanes, Ecol. Monogr. 41:27–52. 1971; Keeley and Zedler, Amer. Midl. Naturalist 99:142–161. 1978; Howe and Carothers, S. Calif. Acad. Sci. 79:5–13. 1980; Keeley and Keeley, Amer. J. Bot. 68:524–530. 1981). The proportion of sprouts and seedlings produced by the different sprouting species following fire varies (Keeley and Zedler 1978; Keeley and Keeley 1981; Westman et al., *in* Margaris and Mooney, eds., Components of productivity of Mediterranean-climate regions. 1981). Hanes (1971) found that the amount of sprouting following fire varies with slope aspect. The percentage of sprouts was greater on coastal north-facing slopes than on the other coastal exposures due to differences in irradiation and available moisture. Also, the fraction of shrubs derived from seedlings was lowest on the coastal north-facing slopes. Seedlings appear to have an advantage on xeric south-facing slopes when compared with sprouters. Hanes (1971) reported sprouting in 43% of southern California chaparral species but did not observe any for *Encelia farinosa.*

Encelia farinosa, which is very abundant on dry slopes of creosote bush scrub and coastal sage scrub communities of southern California (Munz, A flora of southern California. 1974), regenerates following fire as a sprouter (Westman et al. 1981). Little is known about the fire response of *E. farinosa.* The purpose of this project was to locate an area in which *E. farinosa* occurred and to study the regeneration of this species with respect to slope aspect. It was anticipated that there would be a significant difference in the amount of sprouts and seedlings of *E. farinosa* on different slope exposures following fire, particularly between the mesic north-facing slopes and the more xeric south-facing slopes.

Approximately 15 ha of coastal sage scrub located in the hills south of Loma Linda, California burned in a wildfire on 15 June 1981. Species of the burned plants could be identified from standing dead stems. Nearly all of the *E. farinosa* growing in this