

#2676, July 24, 1970, *Carex crawei* Dewey. Moist mossy calcareous fen, W. edge NW $\frac{1}{4}$ 17-36-IIIW3rd (north of Floral). Reported in Breitung from Oxbow, based on a 1955 collection of mine. Since then Dr. G. F. Ledingham and I have found it here and there in southern Saskatchewan in marl bogs and seepages, but never so far north. As the standard eastern floras give its range west to Alberta in Canada, there must be old Saskatchewan collections not known to Fraser and Russell (1944) buried in eastern herbaria.

#2682, August 3, 1970, *Marsilea mucronata* A. Br. Wet mudflats in *Gratiola* zone of intermittently tilled slough bottom NW $\frac{1}{4}$ 30-32-VIIIW3rd (Donavon). This habitat, although further north, agrees with that in Breitung, which is taken from the report in Fraser and Russell (1944) which summarizes material in the Fraser Herbarium. I had not seen this little fern like a four-leaved clover in a slough bottom before. I had been used to finding it in dry creek beds in areas of shallow or no glacial drift in southernmost Saskatchewan.

#2687 August 16, 1970 *Suckleya suckleyana* (Torr.) Rydb. Dry clay mudflats in field pothole, NW cor. L.S.D. 5 in 10-30-XIVW3rd, Rosetown area. Not reported from so far north in Breitung. The material is the flowering-seedling form mentioned by Harrington (1964) in Colorado, with a pair of large oblong cotyledons and a few rounded foliage leaves, but with flowers and fruit forming amid the leaf-bases.

#2697, October 2, 1970, *Sonchus oleraceus* L. in shady moist waste ground at foot of Broadway bridge. Although Breitung and Fraser & Russell state this to be frequent in gardens, Boivin (1967) omitted Saskatchewan from its distribution in Canada, and in the Fraser Herbarium there is of wild material from Saskatchewan only a 1917 collection of T. N. Willing. So it may justly be taken as rare. The common annual sowthistle is *S. asper* (L.) Hill, with leaves normally merely serrate; from this *S. oleraceus* may be told at a glance by having runcinate-pinnatifid leaves, the terminal division the largest, much as in *Lactuca biennis* or many of the mustards.

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Editor's Note: Those with literary inclinations might be interested to know that John Hudson titled his article "Of *Eragrostis* and Range Extensions" with a chapter heading in mind from Tolkien's *Lord of the Rings* — "Of Herbs and Stewed Rabbits."

GARDENS OF THE SKY

by **Al Grass**, 5666 Rumble Street, Burnaby, B.C.

Each year many thousands of visitors come to Manning Park (located about 140 miles east of Vancouver on the Trans-Canada highway) to see the dazzling display of colour in the alpine meadows. Reds, yellows, and blues splash themselves about with gay abandon to form one of nature's grand

spectacles. Scientist and poet alike can find inspiration in the rocky peaks and rolling meadows where millions of wildflowers make their homes.

Dynamic, that's the high country for every living creature is in a race for time. Snow stays until late June at these heights (6000 feet and over)



Photo by Al Grass

'Gardens of the Sky': Two naturalists hiking in the alpine gardens of Manning Park. Photo shows first "bloom wave."



Photo by Al Grass

The Western Anemone, one of the first plants to bloom in the high country. Together with the Snow Lily it forms the first "bloom wave." The seed heads form a fuzzy ball giving the plant another name — "old man of the mountains."

and returns again in September. Even before the snows have melted and the meltwater rills rush to the valley below, some flowers, such as the Snow Lily (*Erythronium grandiflorum*) and Western Anemone (*Anemone occidentalis*), are poking their heads above the icy carpet to bask in the life-giving sun.

The flowering of the meadows occurs in two stages called bloom waves. The first bloom wave consists of flowers predominantly yellow (Snow Lily) and white (Western Anemone). The second bloom wave incorporates blue (Lupine), red (Indian Paintbrush)

and deeper yellows (Ragworts and Golden Fleabane).

To the alpine adventurer, each turn in the trail, each new rocky ledge, each new spongy bog, brings the thrill of discovering new truths in the never ending drama of nature. Who would not marvel at the delicate pink cups of Alpine Bog Laurel (*Kalmia polifolia*) cradled in a cushion of dew-laden moss or the tiny yellow bells of Mountain Heath (*Phyllodoce glanduliflora*)? What dull soul could fail to be thrilled at the discovery of a sparkling mountain brook whose banks were carpeted with the glorious crimson of Lewis' Monkey Flower?

The Blue Jay Bookshelf

BREEDING BIOLOGY OF CALIFORNIA AND RING-BILLED GULLS: A STUDY OF ECOLOGICAL ADAPTATION TO THE INLAND HABITAT. 1970. By Kees Vermeer. Canadian Wildlife Service Report Series, No. 12. The Queen's Printer, Ottawa. 52 pp. \$1.25.

The Canadian public should be gratified to see each new number in the Canadian Wildlife Service's Report Series. This is an opportunity for the taxpayer to find out more about the work of the Service which he supports, and, especially, to learn more about the wildlife of his country and the facts about it that have been established by the Service's research. The most recent report, No. 12, has the added interest for *Blue Jay* readers of being the work of Kees Vermeer, to whom the Saskatchewan Natural History Society presented its 1970 Cliff Shaw Memorial Award for significant contributions to the *Blue Jay*.

The brief abstract at the beginning of the report indicates the nature of the study and its results (with an accompanying résumé in French to alert French-speaking Canadian readers to the value of the publication). Vermeer's study of the California Gull and the Ring-billed Gull at Miquelon Lake, Alberta in 1964 and 1965 set out

to determine incubation periods, factors affecting choice of nest sites, reproductive success, feeding habits and growth rates, with the objective of learning whether these two species exhibit special adaptations to breeding in the interior. At each point, comparisons were established between these two inland species and the Glaucous-winged Gull, a marine species. After two seasons of investigation, Vermeer concluded that there are few basic differences between inland-breeding gull species and marine forms. The apparent adaptation to breeding in an inland habitat, he observed, is a shortened breeding season, marked by a compressed pre-egg period, a short laying period, and little repeat laying.

Vermeer's study and subsequent report is a straight-forward, informative piece of biological investigation, needing (to my mind) no further justification. However, it is typical of our current pre-occupation with the environmental crisis that the foreword should reiterate the theme: "The most important and useful reason for studying gulls lies in their value as indicators of the health of the habitat. . . . As gulls nest in colonies, changes in breeding populations can be readily detected and related to levels of chemical contamination. Ecological research on colonial birds is therefore valuable