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EXTENSION OF THE RANGE OF *ABIES LASIOCARPA* INTO CALIFORNIA

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Abies lasiocarpa (Hook.) Nutt. has been located in two drainages near Russian Peak in the Salmon Mountains of Siskiyou Co. During the summer of 1968, while making a vegetational reconnaissance of this area, *A. lasiocarpa* was first located in forests surrounding the meadows west of Little Duck Lake (Etna quadrangle, T. 40N. R. 9W. Sec. 19, elev. 6400 ft). Here it forms a forest with *Tsuga mertensiana* (Bong.) Carr., *Pinus monticola* Dougl., and *Abies magnifica* A. Murr. var. *shastensis* Lemmon. The trees are healthy; reproduction is plentiful with some advancing into the wet meadows.

Later a more extensive forest was found along South Sugar Creek (T. 40N. R. 9W. Sec. 30, 31). In this area the trees not only occur around the wet meadows near South Sugar Lake at 6800 ft, but descend along the creek terraces to 5800 ft. Below 6400 ft *A. lasiocarpa* is mixed with *Picea engelmannii* Parry ex Engelm. Both species are vigorous, and are reproducing well.

It is surprising that this species has not been reported previously. Munz (1959) reports *P. engelmannii* along Sugar Creek, tributary of the Scott River. South Sugar Creek is a branch of this stream. Only a rough and apparently recent trail has been constructed by fishermen to South Sugar Lake, so accessibility is recent. An established Forest Serv-

ice trail parallels Sugar Creek through stands of *P. engelmannii*. This might explain the oversight.

Some older literature incorrectly reports the occurrence of *A. lasiocarpa* in the "Salmon Mountains." The references are traceable to specimens of *Abies amabilis* (Dougl.) Forbes collected by Gillespie in 1928 near Hancock Lake in the Marble Mountain Wilderness Area (Gillespie, 1931). Haddock (1961) discusses the history of the confusion noting that *A. amabilis* was first correctly recognized in that location in 1932 by Crebbin, a forester on the staff of the Klamath National Forest.

These new records do not greatly extend the range of *A. lasiocarpa*. Fowells (1965) follows earlier general references in showing the southern range of *A. lasiocarpa* to be in the Cascades in the vicinity of Crater Lake. The first discovery of *A. lasiocarpa* in the Klamath Region was made by Dennis (1959) on the slopes of Mt. Ashland, Jackson Co., thus extending the range further south. He found one small group, possibly a single clone due to layering. Our findings continue the range about 50 miles south of the Mt. Ashland location, and into a more central part of the Klamath Region.

Its presence, here, accentuates the region's central refugial nature as discussed by Whittaker (1960; 1961). What is more noteworthy is that *A. lasiocarpa* and *P. engelmannii* are only two of 17 conifers found above 5000 ft in the Sugar Creek drainage. These are as follows: *Abies concolor* (Gord. & Glend.) Lindl., *A. lasiocarpa* (Hook.) Nutt., *A. magnifica* A.Murr. var. *shastensis* Lemmon, *Juniperus communis* L. var. *saxatilis* Pall., *Libocedrus decurrens* Torr., *P. breweriana* Wats., *P. engelmannii* Parry ex Engelm., *Pinus albicaulis* Engelm., *P. balfouriana* Grev. & Balf., *P. contorta* Dougl. var. *murrayana* (Grev. & Balf.) Engelm., *P. jeffreyi* Grev. & Balf., *P. lambertiana* Dougl., *P. monticola* Dougl., *P. ponderosa* Dougl. ex P. & C. Lawson, *Pseudotsuga menziesii* (Mirb.) Franco, *Taxus brevifolia* Nutt., and *Tsuga mertensiana* (Bong) Carr.

A notable species is *Pinus balfouriana* Grev. & Balf. on a ridge overlooking Little Duck Lake and Sugar Lake stands of *A. lasiocarpa* and *P. engelmannii*. Possibly nowhere else in California is such a complete representation of northwestern and Serrian conifers present in a single square mile. We also doubt that any region can match the number of conifers found in one small area.

Initial studies have begun in this area on the other plant groups. The flowering plants are now incompletely collected due to time limitations. The collected material, though, shows a similar pattern of mixing of northwestern and Serrain floras. For example, the northwestern *Phyllodoce empetriformis* (Sm.) D. Don is present rather than *Phyllodoce breweri* (Gray) Hell. Other northwestern shrubs which are rather common in the area include *Vaccinium membranaceum* Dougl., *Vaccinium*

scoparium Leib., and the sub-shrub *Leutkea pectinata* (Pursh) Kuntze. Mixed with the *Vaccinium* is the Serrian *Leucothoe davisiae* Torr. The rare to California *Gaultheria humifusa* (Graham) Rydb. was found near the Little Duck Lake stand of *A. lasiocarpa*. Interesting herbs include the "uncommon" *Mitella pentandra* Hook. and *Cypripedium fasciculatum* Kell. A complete study of the vascular plant flora of this area is planned by us for the 1969 field season.

Specimens of *A. lasiocarpa* are in the following herbaria: HSC, JEPS, and the Klamath National Forest Herbarium, Yreka.

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REVIEWS

The Plant Hunters. By TYLER WHITTLE. xii + 283 pp., illustrated. Chilton Book Co., 401 Walnut St., Philadelphia, Penn. 19106. 1970. \$8.95.

The subtitle of this book sums up its contents very well: "being an examination of collecting with an account of the careers & the methods of a number of those who have searched the world for wild plants." Starting with Queen Hatshepsut and continuing into the 20th Century the author of this very interesting and eminently readable book has detailed the story of the men and women who went around the world looking for plants, sometimes for medical reasons, sometimes in search of ornamentals, sometimes to find spices, and sometimes to advance the knowledge of the kinds of plants. The whole world is covered, hence no one geographical area has received exhaustive treatment: nor in a book of this kind would one want it.

The vistas and unspoiled plant communities of the past are often no longer with us. It makes one rather depressed to realize what man has done and is continuing to do to his surroundings, especially in decreasing the diversity of living things. Perhaps one of the great services of this book, especially to young readers, will be to install in them a sense of curiosity about and interest in plants, for after all, there is little motivation to preserve that about which one knows nothing or in which one has no interest.—JOHN H. THOMAS, Department of Biological Sciences, Stanford University.



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