

Western Region

Donald Gardner, NPS research scientist at the CPSU/ Univ. of Hawaii, attended the 5th International Congress of Plant Pathology at Kyoto, Japan in August 1988. Gardner, a recognized authority on plant rust fungi in

natural systems, served as a session chairman and presented a paper on taxonomy, morphology, distribution, and significance of the legume tree rusts of the world.

Gardner's principal research involves biocontrol of alien plants in Hawaiian NPS areas. Since potential biocontrol agents usually come from the countries of alien plant origin, biocontrol programs require cooperation and assistance from researchers on an international basis. Following the conference, which was attended by scientists from 77 countries, Gardner was invited to visit the Tsukuba University campus to review research involving plant rust fungi and interact with faculty and graduate students.

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Clifford Smith, Director of the University of Hawaii CPSU, reports publication by the CPSU of *Checklist of Vascular Plants of Hawaii Volcanoes National Park* by P.K. Higashino, L.W. Cuddihy, S.J. Anderson, and C.P. Stone, published as Tech. Report 64; and *Bryophytes and Vascular Plants of Kipahulu Valley, Haleakala National Park* by the same authors, published as Tech. Report 65.

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HAVO Research Scientist Chuck Stone presented sessions on island biogeography at the Western Region Interpreters Workshop in San Diego Oct. 31, 1988.

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Two new technical reports out of the NPS Cooperative Park Resources Studies Unit at U/Cal Davis are now available from the Western Region. TR #31, by Michael L. Avery and Charles van Ripper III, is "An Evaluation of the California Wildlife-Habitat Relationships Data Base for Predicting Bird Community Composition in Pinnacles National Monument." TR #32, by Gregg Riegel, Sarah Greene, Mark Harmon and Jerry Franklin, looks at "Characteristics of Mixed Conifer Forest Reference Stands at Sequoia National Park." The latter publication contains six large maps (enveloped inside the back cover) – stem maps from each of the reference stands.

In addition, the Annual Report of all research undertaken by the CPSU in 1987 also is now available.

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Herbicide tests on 10 species of alien plants in Hawaii have produced some promising results, although it is too early to determine final results in most cases. ESCORT, ARSENAL, GARLON 4, and GARLON 3A are all giving 90%+ control of *Rubus ellipticus* as cut stump treatments after 12 months. GARLON 3A and 5% ROUNDUP treatments gave 100% control of *Passiflora mollissima* after 12 months as cut stump treatments. Undiluted GARLON 4 gave 95% control as a cut stump treatment on *Psidium cattleianum*, but rooting of cut slash in wet areas is a problem. Undiluted GARLAN 3A or GARLON 4 gave 80% control of *Tibouchina urvilleana* after 22 months in cut stump treatments, but the cut slash must be treated with 1% v/v GARLON 4 in water to prevent rooting. Subsequent retreatment of resprouts is necessary at 6-month intervals for 2 to 3 years after initial treatment.