

Hokkaido Travels for Post Tour in 2004 IPPS's International Meeting[®]

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International Board Meeting is held at different regions every year by a rotation system in the eight regions. Last year, in 2004, the International Board Meeting was held in conjunction with the IPPS-Japan's Shizuoka Annual Conference. At this conference, as usual, a post-conference tour was planned. To explore the beautiful autumnal tints and great nature of Japan, I selected Hokkaido because early fall has become a popular destination at this time of year in the north island of Japan. The list of participants on the tour and my impressions are as follows.

The First Day (10 September 2004). In early morning, we departed from Hamamatsu to Nagoya by Shinkansen and arrived at New Chitose airport at 10:30 AM via Nagoya airport. By chartered bus we toured to Hokkaido Research Station, which belongs to Snow Bland Seed Co., Ltd. (1066, Horonai-aza, Naganuma-cho, Yubari-gun, Hokkaido, 069-1464, Japan). This is one of the major seed companies in Japan. Here, crops such as forage grasses, legumes, F1 corn for feed and manure crops, vegetables, and flower and ornamental plants are bred. We were welcomed by Mr. Yamashita (director) and all his staff and had a splendid lunch and fully enjoyed natural honey corn, potato, and fresh milk. All members were very satisfied with these traditional Hokkaido-like foods! Next we toured the field trials and visited greenhouses in which we saw the breeding of *Cyclamen* or *Begonia* crops. Lastly, we observed the unique tissue culture technology used with cyclamen. Dr. Ken Tilt was especially interested in this technology. At the second stop, we visited the Forestry Museum belonging to Oji Paper Co., Ltd. (Kuriyama-cho, Yubari-gun, Hokkaido, 099-1508, Japan <<http://www.ojipaper-ebetsu.jp/top.htm>>). The site is 30



Figure 1. Beautiful wide panorama view from Biei Hill, Hokkaido.



Figure 2. Memorial photograph at Hokkaido Experimental Forest of Tokyo University at Furano, Hokkaido. The total participants were 14 people; from USA: Helen Gilbert, James Gilbert, Margaret Parkerson, Charles Parkerson, Elizabeth Marshall, Richard (Dick) Marshall, Barbara Smith, James Smith, Ken Tilt, and Fred Garrett. From GB&I: Peter Bingham. From Australia: David Daly. From Japan: Fuwa and Iizuka.

ha in area and was composed of numerous research trials with trees such as *Populus*, *Betula*, *Alnus*, *Abies*, *Picea*, and *Larix*. These trees have been studied mainly as materials for pulpwood. Everybody enjoyed an example of a natural regeneration model with *Abies*, which was explained by Mr. Koda, director of the Museum. Mr. James Gilbert and Mr. David Daly especially liked the forest and trees and enjoyed the forest atmosphere. In the evening we enjoyed a special meal of roast mutton and delicious ice cream. I was surprised that most of the foreign guests ate more than two times what the Japanese ate.

The Second Day (11 September 2004). Because a large typhoon had hit Hokkaido and this area was considerably damaged, we were not able to visit the famous Sapporo Botanical Garden at Hokkaido University. Therefore, we went to "Hitujigaoka" (Sheep Hill) where a famous statue of Dr. W.S. Clark is located. There, we enjoyed sightseeing and had very delicious ice cream. Later we drove to "Hanano Nikaido" in Asahikawa to see commercial cyclamen production. The group then traveled to Nature World Hotel at Furano City via "Bieinooka" (Biei Hill; Fig. 1). In a great natural landscape we spent a happy time all night with beer or wine.

The Third Day (12 September 2004). In the morning, we visited University Forest in Hokkaido, which belongs to Tokyo University (Address of the University Forest: Yamabe, Furano City, Hokkaido <www.uf.a.u-tokyo.ac.jp/hokuen/>) (Fig. 2). This forest is very large, occupying approximately 20,000 ha; it is also a rare natural forest mixed with broad-leaved trees and evergreen conifers. During our visit to this forest, most of participants were very busy taking pictures and enjoying Hokkaido's natural wonders. Of the many stops on this tour, I guess this stop was the best and most interesting site for our guests. Afterwards, we moved to Kushiro

City as the final stop via large farms in Tokachi Plain. In the evening, of course, we held a goodbye party together with two supporters.

The Fourth Day (12 September 2004). During this day, we visited several famous sightseeing spots such as Kushiro Marshland, Fogged Mashu Lake, and Sulfur Mountain. Although the weather conditions on last day were not always good, everybody seemed to enjoy this post-tour.

Lastly, I wish for your continued health, happiness, and second coming to Hokkaido.

A Plant-Growing Apparatus for Producing CO₂-Dissolved Water[©]

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INTRODUCTION

In this paper, we are introducing a plant-growing apparatus for producing the highly concentrated gas-dissolved water suitable for plant growth (Fig. 1). The plant-growing apparatus is characterized by: (1) a step of supplying CO₂ or O₂ in a pressurized state from one side separated with a permeable membrane (a hollow fiber membrane) that is permeable only to a gas and impermeable to a liquid, while causing water to flow to the other side of the permeable membrane; (2) a step of dissolving the CO₂ or O₂ in the water so as to reach a predetermined concentration in water; and (3) a step of intermittently supplying (atomizing and/or irrigating) CO₂- or O₂-dissolved water to plants, thereby promoting plant growth.

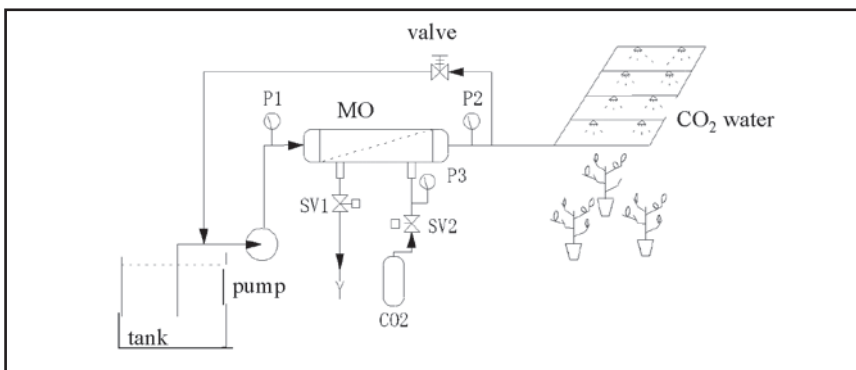


Figure 1. A view showing an example of plant-growing apparatus in the present paper. The apparatus is roughly made up of, from the upstream side, a water tank, a pressure pump, a hollow fiber membrane module MO, a CO₂ gas cylinder, a control valve SV2, and a relief valve. Operations of the entire apparatus are controlled by a control unit (not shown).