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International Plant Propagators' Society New Zealand – Western Region Exchange 2017

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IPPS Western Region exchange 2017

When I applied for the International Plant Propagators' Society New Zealand - Western Region Exchange in 2017 I knew that I could have the opportunity to attend the Western Region annual conference in Wilsonville, Oregon. Little did I know that IPPS would send me on a journey through two countries and over 3900km total I will try to summarize some highlights of the exchange.

I landed in Vancouver, Canada, on the 7th of October. Valerie Sikkema picked me up from the airport and although I had told myself not to do this, I immediately went to get in the driver's side of the car! It was the day of the cranberry festival, so we visited Fort Langley to see some flooded fields with floating cranberries and sample some berry wines.

Valerie and Arnold Sikkema took me to Lynn Canyon for a hike (not a 'tramp'). I tried my best to learn some of the local flora, feeling quite disoriented without the usual New Zealand natives around. The canopy was filled with Douglas fir (*Pseudotsuga menziesii*), Canadian hemlock (*Tsuga canadensis*), and Pacific red cedar (*Thuja plicata*). Huckleberry (bear food!), Salal (*Gaultheria shallon*) and swordferns dominated the undergrowth.

Douglas Justice is the Associate Director of the Horticulture and Collections at the UBC Botanic Garden. After attending his lecture on Woody Plant Identification at the University of British Columbia (UBC), I was treated to a tour of the UBC Botanical Gardens. They have a focus on rhododendrons, magnolias and maples to name a few, many of which are collected from seed from all over the world. Every plant that comes in and goes out is tracked, identified and meticulously recorded.

To finish the day, I was taken on a tour of the UBC Nitobe Memorial Garden (Figure 1), one of the top five Japanese gardens outside of Japan. Each stage of the

garden is carefully yet subtly designed to take you through a symbolic journey of life; from birth, through rebellious teenage years, family time, and death.

Figure 1. Nitobe Memorial Garden.

Before leaving Canada, we visited Valerie's work, Van Belle Nursery. They were big users of the Ellepot system (biodegradable paper based 'pots' in customizable soil mixes and volumes) and recycled as much as possible (Figure 2). They are also working on putting up cross-poles for hawks to land on and help with pest control, as well as a robotic crop scanner to monitor plant health via detection of chemical volatiles.

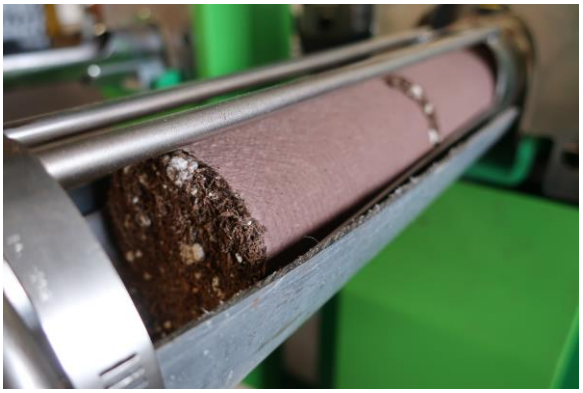

Figure 2. Ellepot system for biodegradable pots.

Crossing the border, I made it to Washington to stay with the IPPS Western Region's exchange coordinator Todd Jones, owner of Fourth Corner Nurseries, in their beautiful farmhouse surrounded by mountains. Todd arranged a visit to Sakata Seed in Skagit Valley, a breeding station for cabbage, spinach, broccoli and beets (Figure 3). It really emphasized the hand labour involved in breeding work, with thousands of cabbages all being hand pollinated and spinach plants grown in special isolation bags. I could really appreciate and relate to all the labour involved in the pollinations, seed cleaning and record keeping!

Figure 3. Sakata seed production area.

My next stop was Olympia with Sarah and Jim Brackman (Sarah is a technical sales representative for BioSafe Systems) but first I got to view the famous city of Seattle in slow-motion as we drove past in rush hour traffic. Jim took me to two Weyerhaeuser nurseries, one bareroot and one container. Weyerhaeuser owns thousands of acres of forestry land and supply their own seedlings. Douglas Fir is the main crop and takes 40 years to mature. Weyerhaeuser had also experimented with the Ellepot system, but they found that some plants just do not like the paper sleeves.

A five-hour journey on the Amtrak train flying past fields of bright orange pumpkins at harvest took me to Eugene, Oregon. Tony Shireman, Laboratory Manager from Fall Creek Nursery showed me their blueberry tissue culture lab and nursery grounds where they carry out their own breeding program. Blueberry season sees the lead breeder

eating blueberries from the start of the day until about 2 pm! All part of sensory evaluation of course.

The USDA National Clonal Germplasm Repository was next on the list; they hold and maintain a large quantity of plant cultivars and species, including strawberries, hops and pears. It was surreal for me to be there in Corvallis learning how the germplasm repository functions because I had written about it for an assignment on pear breeding at Massey University the year beforehand.

Figure 4. Strawberries at the USDA National Clonal Germplasm Repository.

Finally, the conference itself; a jam-packed three days of nursery tours and stimulating lectures. Themes that stood out from tours and talks were the use of automation technology and beneficial insects, labour shortages and increased labour costs, climate change, and the importance of critical thinking/planning. With beneficial insects, the key was prevention rather than treatment. For example, Little Prince nursery in Oregon housed beneficial insects long term on host plants kept in mesh boxes in each plastichouse.

Aroma Cannabis was one of the highlights being somewhat a novelty seeing large scale, high-tech glasshouse production of cannabis. All watering, lights, fans and heaters were automated and could be controlled remotely by mobile phone. There are very strict growing regulations, every plant has a Radio-frequency identification (RFID) chip tag and every scrap of plant material must be weighed and recorded as plants are trimmed and harvested.

Figure 5. Aroma Cannabis greenhouse production.

Another highlight was Monrovia nursery and North American Plants tissue culture facility for sheer scale of production. With 900 acres at Monrovia, we only saw a small corner of it, they produce approximately 10 million plants per year, 2/3 container production and 1/3 stock plants. With 10 crew 'canning' they could produce 25,000 plants in a day. North American Plants boasted 50 million plants produced per year; with 23,000 square feet of laboratory space they could produce 67,000 jars per day.

Heirloom Roses was also a big Ellepot user for their rose propagation (Figure 6). An interesting group discussion ended with an emphasis on the importance of social media. They avidly follow and post on Instagram, Pinterest and Facebook to both advertise and monitor trends. Some of these were surprising such as the trendy "brown rose bouquets".

Figure 6. Rose cuttings at Heirloom Roses in Ellepots with peat-bark-pumice mix.

The final two weeks of my extended trip were also a whirlwind. After a day's driving lesson from Laurie Rogers-Roach from Eshraghi nursery in Hillsboro, Oregon (I am eternally grateful!) I drove over 2600km from Portland to LAX. I definitely took the scenic route, visiting the snow-capped Mount Hood, crystal blue Crater Lake, ominously dark and misty Crescent City and surrounding Redwood forests, San Francisco (a terrifying drive), Yosemite National Park, Santa Barbara and Lompoc.

Takao Nursery was a bonus to see because of their focus on technology, hygiene and quality, all fresh in my mind from the conference talks (Figure 7).

Figure 7. Cutting sanitation at Takao Nursery.

Watering, misting and potting were all automated and there were organized workstations throughout the nursery set up for cuttings/maintenance of plants with sanitation sprays at hand. Many of the staff had been there for decades and emphasised the importance of passing on plant propagation knowledge to the younger newcomers.

Annie's Annuals and Perennials was a treasure trove of interesting and colourful plants. I enjoyed seeing and feeling Annie's passion for plants coming through their nursery garden bed displays. Having mature plants in a garden setting is important for customers to see the potential of what they are buying and might encourage them to buy things that don't look showy at point of purchase but will look great down the track.

Figure 8. Keith Hammett sweet pea cultivar seedlings at Annie's Annuals and Perennials.

The PlantHaven team gave an in-depth presentation of the work they do with emphasis on representing plant breeders' portfolios. It enabled me to better understand the process between the development of a new cultivar and getting it to the market. We also drove to GroLink where the PlantHaven plant trials are grown.

Thank you to IPPS New Zealand and IPPS Western Region for making this incredible trip possible. Thank you to all the hosts, IPPS members and nursery staff for their generous hospitality and organizing such an enriching and life changing experience.