

## South East Area Visit 13<sup>th</sup> August 2015

IPPS and the Southern Growers Club (based in West Sussex and wider area) shared a day to study 'Breeding and Selection for the Future' with visits to Wisley for the morning and Tozer Seeds in the afternoon. Thanks for the superb enthusiasm and hospitable welcomes from all our hosts.

### RHS Garden Wisley, Surrey

We were hosted by Mark Heath who is Trials Manager for the Royal Horticultural Society, ably assisted by Karen Robbirt for the tour of the Laboratory.

The 20 visitors divided in the laboratory to visit the **Herbarium** where 80,000 specimens are preserved for recording and research, and inclusion in the Global Plants Initiative store of scanned specimens. Here James Armitage, Principal Botanist, described the process and rationale for the herbarium.



Specimens from the earliest, 1731, a Lavender, a specimen collected by Darwin on The Beagle, to the latest study into Giant Hogweed now known in the UK to be 5 distinct species. Molecular research is helping to identify different invasive species such as Gunnera.

In another office Mandeep Matharu heads up the Scanning of specimens on a scanner specially adapted to ensure there is no damage to the specimens. These very highly defined scans can be accessed worldwide and plants studied in greater detail than ever before.

Next to Jenny Denton in the **Pathology Lab** where members send in specimens for identification.



Posters of particular disease threats are made, as well as regular columns written for The Garden magazine of the RHS. Much to be learnt here such as a swollen stem of Juniper



which is the alternative host for Pear Rust!

Specimens of Honey Fungus and a new species of Powdery Mildew on Heuchera were also on show. Here work is done to support FERA (Food and Environment Agency) on such projects as identifying the life cycle and risks of different species of Phytophthora from *P. infestans* to *P. ramorum*. Information is sent to the members in the magazine and the press also spreads the word further than the usual industry channels.

Lastly the **Entomology Lab** where queries amount to 3,000 per year which can reveal pests new to the UK.

Once again work is done in collaboration with the Plant Health and Seeds Inspectorate. Work has been done to find possible solutions to Horse Chestnut Leaf Miner and predators



have been identified as Blue Tits and Dragon Flies, although how to use these effectively has yet to be discovered!

Full web surveys are launched to assess the spread of pests such as the Rosemary Beetle, a pest to add to the 23,000 specimens stored here.

Research is done on for instance the Agapanthus fly, a gall midge causing severe damage to stocks of Agapanthus. Recently published are the results of the "Plants for Bugs" project undertaken to maximise the potential for gardens to attract pollinators. Perhaps contrary to perceived wisdom, the result showed that use of ornamental plants was as effective as wild flower plantings.



**Propagation department** up the hill in pouring rain, beyond the site cleared of the former display glasshouse ready for the building of new Laboratories.



Sam Gullivan described the role of in house propagation at Wisley. 100,000 plants per year to provide for RHS gardens, including 5,500 tender perennials amounting to about 40 of each variety, bulbs, and plants for display by season (Poinsettya, Coleus, Pelargoniums, Fuchsias, then Chrysanthemum or trials. The 25 year old glasshouses are due to be replaced possibly on another site, but for now was used for trials of Hippeastrum, Peonies, Borecale and watering regime trials using peat free substrates watered to field capacity 100%, 75% and 50% to achieve not just water saving, but good growth control. Compost Tea and extensive bio control is used with 95% of the production in peat free compost.

**Portsmouth Trials Field**





With persistent rain drowning the noise from the nearby A3 road, the group took shelter in the summerhouse looking up over the plant trials area, used since 1926 and now so infected with soil diseases that there are plans to relocate. Plots are allocated to 30 species with specialist forums assessing the results and recommending to one of the RHS 7 committees plants that perform well enough to be awarded the coveted AGM (Award of Garden Merit). This year's trials ranged from large flowered Clematis to Blackberries and a 'Peoples choice' of their favourite Sunflower.

After Mark Heath's description of the trials process the group thanked him and his helpers and beat a retreat to the main display glasshouse, resuming their own tour of the gardens as the weather improved after lunch.

### **Tozer Seeds, Cobham (main site)**

With dry weather in the afternoon we received a warm welcome from Frances Gawthrop and Nick Forsyth at this family owned independent vegetable seed breeder and supplier. Refreshments in the board room of Pyports an historic house over 150 years old and now entirely offices for the company and a presentation on its 70 year history.



The Great Hall, Pyports

Early on Dermot Dawson joined as a plant breeder improving the seed for Thames valley growers particularly for market gardeners on the site that is now Heathrow airport. His son Dr Peter Dawson now leads in that role. Breeding focuses on 15 species with particular emphasis on Sweet Corn, Parsnip, Celery, Lettuce, Rocket, and introduced the Flower Sprout.

Although it was stressed that low tech still works Tozer has a small lab where they can do molecular biology and mark genes to have some time from the process. In the walled garden tunnels are used to increase the level of CO<sub>2</sub>.



Glasshouses with seeds developing having been pollinated using seasonal labour;





Previous generations of Wild Rocket;



The Pack house;

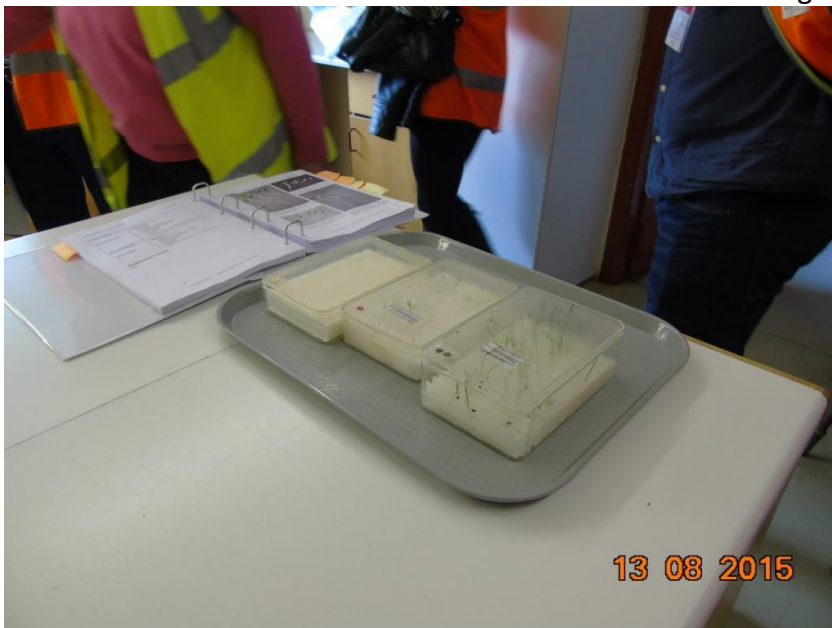




Some trial beds of Sweet corn;



Seed batches have to be tested every 6 months for correct germination according to a handbook of International standards 100 seeds in 50 folds in germination cabinets;





The angle of the root to shoot is critical in this species, not just the germination.  
The day ended with new contacts made and invitations to reciprocal and return visits.