PRESIDENT BRUCE MACDONALD: It gives me great pleasure to welcome you to the Western Region's 30th annual meeting. I know that many of you have come a long way to be with us. We have people here from the Eastern Region, the Southern Region, G.B. & I., New Zealand, and Australia. So we have here a true representation of the IPPS.

I would like to introduce you to a special visitor from the G.B. & I. Region, Jonathan Allen. He was the first recipient of their newly-formed Richard Martyr Award. The first prize was a complimentary visit to the IPPS Western Region meeting. Jonathan, would you like to stand? Thank you.

The theme of our meeting this year is very appropriate—''Getting to the Root of the Problem.'' You will see that the program is full of all sorts of topics, perennials, ferns, propagation facilities, tissue culture, propagation of rare and endangered plants, etc.

We must thank your Vice-President here, Joe Solomone, and his committee for assembling such an interesting program. Joe, the Program is yours and your Moderators.

FERNS AND THEIR DIFFERENCES WITHIN THE PLANT KINGDOM

HILDEGARD C. JACKSON

California Ferns, Inc.
P. O. Box 791
Half Moon Bay, California 94019

There are different ways of propagating ferns. Some are multiplied by division or by ''pups,'' others by tissue culture or by spores.

We propagate using spores, not by seeds, but by spores. Here lies one of the most fascinating differences between flowering plants and ferns. A single seed is a composite of more cells, a momentarily dormant embryo, in many cases already a tiny, tiny plant, visible only under the microscope.

A spore is a single cell, not an embryo, just a single cell, which by itself is not able to develop into a plant, not even into an embryo. A group of many spores, with the help of one another, will go through a pro-embryo stage—the so-called prothallium. If collected successfully, spores are put down on a medium. We use straight peat moss. In a few days or weeks the whole surface will turn into a wondrous, beautiful, green moss-like carpet. This is the prothallia, which is the gametophyte stage in the alternation of generations.

One of my passions is to learn to collect spores. Spores are found, in most cases, on the underside of a frond (the leaf). They can be many sizes, different shapes, and even colors, but are always covered by capsules. In some cases, it has taken me years to collect spores successfully. I have watched spores developing for almost a year, during which I have collected at different times, only to find that it wasn't the right time yet. Then suddenly, I've lost the remaining spore on that plant to nature. So, spores are very valuable to me. It is a never ending curiosity, and sometimes an enormous sense of satisfaction to have discovered something new. No fern is alike. Each one has its own cycle.

Once collected and put on peat, the spores develop into prothallia. After further weeks, one can clearly recognize with the help of a microscope, a colony of flat kidney or heart-shaped leaves with tiny, hairlike roots, which keep them anchored to the soil surface. One can also see that the prothallia have both male and female organs, producing sperm and eggs, which will find a way to join with the help of water (not a lot of water, but the proper amount).

All of this does not happen overnight. It takes weeks and even months of waiting for a fern propagator. This is a time of patience, curiosity, and surprises. There are surprises of new discoveries, of losses, and of successes. Success is when one sees the first tiny frond, which later turns into a fully developed plant with roots, stems, and fronds with spores. In all these weeks and months, one tries to give proper conditions of medium, pH, water, fungicides, and even insecticides.

Another fascination of mine is the wealth of all the different sizes, shapes, and forms of fern fronds. A wonderful observation was written by Thoreau, "Nature made ferns for pure leaves, to show what she could do in that line." No matter how many the variations of design, the one constant characteristic is the uncoiling of each individual frond. I always enjoy observing the unfolding of a frond to an often symmetrical design. It is no surprise to me, that ferns have been mentioned in mythologies, in poems, and in literature as mystical and wondrous. I would like to mention Thoreau again, who said:

"It is the proudest of all plants in the structure of their leaves, it is Nature's lacework."