

27th March 1960
General Delivery
Wailuku, Maui
Hawaii

Dr. William P. Jacobs
Department of Biology
Princeton University
Princeton, New Jersey

Dear Dr. Jacobs:

Recently I have returned here from Australia and find your good letter of 19th November awaiting me. During our meeting at Green Bank, I may have mentioned that I found a wild native vine called *Dioscorea villosa* with a left hand screw thread. This is opposite to the various bean vines. Later, I found another wild vine also turning left handed with similar leaves and flowers. The seed pods are also triangular but less than an eighth of an inch across and grow in large clusters along a central stem. This vine is probably another variety of the first one. I harvested some of the seed of each vine last autumn.

At Campbelltown, N.S. . which is about 30 miles west of Sydney I had an opportunity to search for local wild vines. Four different kinds were found. Three turn like a right hand screw thread and one similar to those of the above paragraph. However the pods are midway in size between the two West Virginia varieties. I harvested some of this seed also.

A century ago Darwin was attracted to the subject. He concluded that all varieties of a given species turn in the same direction. The above three left hand screw thread vines confirm this. While in Green Bank I grew nine different varieties of pole beans. All these turned the same way as well as two other varieties I encountered in Australia, again confirming Darwin.

At Flinders Island which is northeast of Tasmania, I found a plant called the Macquarie Vine. Some of the stems of this plant turn one way, some the opposite way. The leaves, flowers, seed, etc. look identical so they must be different varieties of the same plant. Again I harvested some of the seed. Also I saved two sample stalks of tall grass with this vine turning around. These samples each have four vines, two turning right and two turning left on the same stalk! This plant is an annual which grows quite rapidly.

Later, at Kempton, Tasmania I found a large bush about a dozen feet high which consisted of a mass of vines climbing upon one another and the dead center stalks. This bush sends out new runners each year a foot or so long for new growth, on its exterior. I found that some of these runners turn one way and some the other way on the same bush. Any given runner turns the same way thruout its length, so the situation is different from the feelers on a pumpkin or cucumber vine, where a given runner changes its direction every few turns.

When I return to Green Bank, I want to try some of the same kinds of experiments on these wild vines as I did with the beans. I am submitting my bean vine results for publication in *Castanea* and will see that you receive a copy in due time. I have had grown in Tasmania the same kind of beans as at Green Bank and they turn exactly the same way.

Sincerely yours,

Grote Reber
Grote Reber