"The significance of the food population problem is more than humanitarian and developmental; it also has critical implications for the conduct of international relations."

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FLORIDA'S FUTURE ROLE IN THE TROPICS

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Land areas and people of the world are divided into political units that have been determined by many means, including force of arms. The United States is one of the more stable and reasonably formed political units. It is physically large and sufficiently endowed with mineral ores, water, power and agricultural land to make it a world power. Equally important, it is populated with various races and national mixes that have given it a hybrid vigor. On the other hand, religion and political views have been sufficiently similar to prevent the religious wars and reduce the political upheavals that have fragmented much of the world's land areas into senseless, small units with arbitrarily formed boundaries. In fact, some political units were intentionally formed by colonial powers so that they would be feckless. Many such units are without the natural resources, financial and educational institutions needed to develop properly and many such areas lie within the tropical zone, which has in some ways developed later than the temperate areas of the world.

On the other hand, people are bound to each other by more natural reasons than political boundaries. Peninsular Florida is part and parcel of that region of sunshine, hurricanes, tropical plants and historical past that includes the Caribbean Sea, the Gulf of Mexico and the land areas within and surrounding these bodies of water.

However, among the political units of which this group is composed, Florida has been uniquely fortunate for, even though it is an area without any source of power other than the sunshine and water that give rise to its abundant tropical and subtropical plant life, it has been part of a large industrial nation that has financed its agricultural ventures and furnished it markets. Moreover, it has not had to face a high density population that competed for agricultural land. Thus, Florida has developed its tropical and subtropical agriculture to a high degree of efficiency.

There is no other region in the world that contains a tree fruit industry equal to that of Florida's citrus complex. Among the more tropical fruits, Florida's varietal selections are used throughout the tropical world and large commercial production units of avocados and mangos have been developed. By way of contrast, with the exception of the plantation crops, most of the fruit in tropical regions is not grown on a large industry basis. Most countries have not developed the standards, handling, storage and marketing procedures that are so necessary for the establishment of a sound and permanent tree fruit industry. Similarly, the tropical regions by and large still lack the large scale industry development of vegetable and ornamental crops of Florida and the United States.

With these advantages, Florida has made many contributions to the tropics. As has already been intimated, the development of reasonably large industries of such tropical fruits as avocados and mangos is in itself a demonstration that efficient and profitable fruit industries can be built with these species as well as with the so-called plantation crops, such as bananas.

Florida has also demonstrated that vegetable crops can be grown efficiently in areas where

they could not heretofore be produced. For example, the huge sweet corn plantings in the muck regions of the Everglades have arisen because research has shown how to control corn ear worm. Florida has demonstrated that it is sensible to standardize, grade and market ornamental crops just as is true with vegetables and fruits.

Equally important, subtropical and tropical horticulturists in Florida have developed a professional attitude. The production manager of the tree fruit crops is a position of importance and the turf specialist who furnishes the lawns and golf greens has developed one of the highest degrees of specialization in any plant industry.

It is important that horticulture be established and maintained as a distinct profession in all of the tropical areas of the world. Up to now, tropical horticulture as a profession has been submerged in the vague area known in the tropics as agronomy. The horticultural crops are highly specialized and are distinguished not only because of their beauty, flavor and aroma but by their highly specialized propagation and cultural requirements. The tropical regions of the world must recognize this and develop their universities, research units and industries with this concept in mind.

Florida has graduated many foreign students who have returned to the tropics determined and able to develop their horticultural industries but who have found this most difficult. Often the growers have not been appropriately financed or trained to manage the specialized horticultural crops. There has been a general insistance on small farm units that are almost doomed to failure because of poor financing, poorly trained growers and the inefficiency that nearly always comes from this kind of operation. One of the very few places in the world where small agricultural units have been successful is in Japan and some other parts of the Orient. Here, the philosophy of the people and the gardening skills developed over centuries has made horticultural proficiency almost a national trait. One does not develop the traits and information passed down through centuries of small gardening operations, such as are found in the Oriont, overnight.

Thus, in the future, Florida's horticultural industries will serve as models, to be modified of course, of organization, management and marketing that other tropical regions can use.

However, Florida will play even more important roles than this, particularly within the Caribbean, Central American and South American family of nations. Within this area there is a hard core cadre of graduates from the University of Florida. To be sure, there are graduates from other universities but many if not most of the horticulturists have obtained all or part of their higher education at the University of Florida. Perhaps Florida's most important role for the next 10 or 20 years will be to furnish graduate level education to the tropics.

Dr. L. E. Grinter, while Dean of the University of Florida's Graduate School, pointed out that universities in the United States have not been able to develop graduate programs of excellence overnight. Even under the best of conditions, the mere influx of money and desire is not enough to develop instant excellence. Buildings and equipment can be brought in overnight but great faculties cannot be developed within a short period of time. To be sure, they can be greatly improved but it is difficult to develop faculties with the excellence needed within a short period of time. A great faculty grows; it is not bought.

Undergraduate education has become quite good in many tropical areas and, in many instances, is more appropriate for the needs of that region than is that obtained in the United States. However, there are very few schools in the tropics that contain the graduate programs needed if the extension, teaching, research and production personnel needed for tropical horticultural industries are to be developed. Unquestionably, Florida will play a major role in this respect.

Florida will also play an important and direct role in developing horticultural research in the tropics. Returning to the small political units that compose the tropical region, of which Florida is a part, it seems obvious that few will be able to furnish the kinds of universities and the kinds of research needed for the development of large horticultural industries. Thus, the answer is quite apparent, there must be cooperative programs.

It should be emphasized that any cooperative effort must be one of colleagues working together for a common purpose. Florida, because it has had the fortune to develop more rapidly than some of the other units, should take the lead in this organization for the immediate future

but there is no thought that it should dominate the scene. From the standpoint of teaching, Florida will transfer the scientific approach to tropical agriculture through the production of students. However, in addition, the future should see a greater movement in both directions of faculty from one location to another. This kind of mix is highly important to prevent provincialism and the development of fixed ideas. In the United States the undesirability of inbred faculties has been brought out in numerable cases.

Theoretically, it does not appear wise for every political unit to maintain universities containing all of the professional degrees. It would appear much wiser to have the various universities specialize in certain professional fields and open their doors to students of other countries. However, when several universities in the United States tried to do this, failure resulted. State pride and provincialism defeated logic.

On the other hand, cooperative, regional research efforts have been quite successful and for the immediate future there is a pressing need to develop and activate this concept.

One of the great needs of the tropical fruit industries is the selection and development of commercial fruit varieties and rootstocks because the scion variety-rootstock combination is the keystone to success in any tree fruit enterprise. Research of this nature requires plant breeders and careful horticultural appraisal of varieties. It requires long-range planning and stability. It demands regulatory programs to maintain virus-free budwood and plant material that is validated as true to type and certified free of nematodes. Banks of plant material and cooperative variety and rootstock tests must be developed. It is imperative that representatives from each of the countries or areas producing tropical fruits develop a cooperative research project dealing with problems of variety improvement that will result in standardized variety and rootstock trials, the collection and evaluation of native species, the easy exchange of plant material and information and a program whereby the researchers involved can meet periodically to discuss results and plan for the future.

This is only one example of the kind of cooperative project that is needed. Projects on plant nutrition, the influence of climate and the soil environment on tropical crops, propagation procedures and, in fact, the entire spectrum of research so necessary for the development of prosperous fruit industries must be formed on an international, cooperative basis with a free interchange of personnel, equipment and knowledge. If Florida does not take the lead in this respect then it will forfeit its role to future greatness in the world of tropical horticulture.

FINAL REPORT ON SOME MANGO HYBRIDS — 1969

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At the 1962 meeting of this Society I gave a progress report on some mango hybrids from the crop of 1956. It had been my hope to present a final report within three or four years but the numerous hurricanes of the early and mid 60's forced delay — the final checks were not made until this year. The results, although not very spectacular, hold interest from several points of view.

Having had several years experience in Cuba with the fibrous West Indian forms of the mango, and with the East Indian forms which suffered so much in that climate from Anthracnose, I was impressed with the clean appearance of the small, yellow skinned, highly productive 'Pico' form of Philippine mango. This fruit matured almost free from Anthracnose and was a general favorite in local markets. In view of this I was greatly interested in the suggestion of Peter J. Wester that crossing the high quality fiberless Philippine with the larger high colored East Indian forms it might be possible to produce fruits of superior quality of high productivity, and probably less prone to Anthracnose.

Edward Simmonds, for many years in charge of the Miami Station of the USDA Bureau of Foreign Seed and Plant Introduction, made several attempts to follow this suggestion. He crossed the Indian variety 'Paheri' with the Philippine 'Carabao' and produced the 'Edward'