he impossible to sell our whole Florida lime crop. However faster truck service, and increasing demand are bringing us closer to this goal continually.

We are now able to deliver via truck to Washington in 30 hours, Philadelphia in 38 hours, New York in 42 hours, Chicago in 48 hours, and Kansas City in 45 hours. We are able to deliver in less than truckload to a buyers warehouse making a four or five stop-over truck. My organization last week shipped a five stop truck terminating at Portland, Oregon in 120 hours. This route was about 4000 miles. If an aggressive sales program is followed, as lime demand grows, sales organizations will have an increasing opportunity to sell our Florida lime crop.

Florida limes are continually forging into territory where consumers have had only West Indies or Mexican fruit. Records show Pacific Coast areas received over thirty-five truckloads of Florida limes the summer of 1951. Imports into Canada are again increasing, and indications show we may very soon surpass West Indian shipments.

Lime production from August 1, 1950 to July 31, 1951 totaled only 207,530 one and three fifths bushels. This was marketed by 27 established shippers. However, over 75% of this was handled by five organizations. Any increase in demand will cause a fairable price reaction in limes. Production is increasing rapidly. Demand however is also rapidly expanding.

We have always needed some outlet for undesirable limes. That is limes which are too large for established retail outlets, skin blisters, or too mature to carry. There are at present three active frozen lime juice or limeade concentrate producers. By next summer there will be a minimum of five. These include three nationally advertised frozen food companies, and two organizations who are engaged also in fresh lime marketing. These two fresh lime marketers have had a year of sales experience. We were able to ascertain that consumers do like and will buy this frozen product readily. While sales were not startling they were sufficient to establish frozen lime products as a permanent frozen juice item. Distribution was far flung—California—Pacific Northwest—and almost all areas of the United States received and consumed this juice. Repeat orders indicated a definite consumer acceptance. One particular market I'm familiar with of approximately 100,000,000 people consumed nearly 10,000 cases.

The entrance of large frozen juice companies indicates national distribution and advertising will be enjoyed by Florida lime products. This should tend to bring competitive bidding for limes and higher grower returns over the coming seasons. So far we have only removed and processed that portion of fruit which might normally go on the ground or bring very low grower returns. Increased processing in 1952 will mean the removal of some limes from fresh channels and we suspect and hope higher prices to the grower.

Our problems are large and varied for a small industry. None is insurmountable but haste in more rigid industry controls and cooperation is imperative. Enforced grade standards, cooperation among marketing organizations, a grower sponsored promotional program are musts in the immediate future.

REPORT OF THE SUB-TROPICAL FRUIT COMMITTEE

FRANCIS B. LINCOLN
Chairman
Homestead

Your Variety Committee has registered eight seedling avocados this year, four of them coming from Dade County and the others from the vicinity of Sebring.

The Biscayne was submitted for registration by the USDA Plant Introduction Garden of Coconut Grove. This is a seedling of unknown parentage which originated at that Station from a seed planted in 1928. It is a fruit of the West Indian type ripening between Aug. 15 and Sept. 15, light green in color of good quality. The surface of this fruit is distinctly ribbed. Its season is before the Waldin and its fruit is larger in size. The conformation of the fruit is shown in Figure 1. The tree is vigorous and not excessively upright in growth. A few trees of this variety have been propagated and recently distributed.

Four seedlings were submitted to your committee by P. L. Vinson of Sebring. They are
of unknown parentage. Three were originated in his grove and the fourth in a neighbor's. One named Floravo, shown in Figure 2, ripens from Oct. 15 to Dec. 15. The tree is large, about 18 years old, resistant to cold, producing an average crop every year. The fruit is medium small, of good quality, but may be susceptible to anthracnose, as evidenced by the fruits submitted.

The seedling named Ridge, ripening through January and February, is a fruit of medium size shown in Figure 3. It's flesh and flavor are of good quality. The tree is large, vigorous, hardy, about 18 years old, with no record of its cropping ability.

A purple fruited seedling named Vinson is a small fruit ripening in February and March, shown in Figure 4. The tree is vigorous, about 18 years old, bearing a good crop each year. Mr. Vinson considers this fruit to have much promise.

The fourth seedling submitted by him, named Late, has a fruit identical to Booth I in size, shape, season, and size of seed, which germinates within the fruit. It originated as a seedling in the yard of F. M. Young, a neighbor. W. F. Ward, a committee member, has known of this tree for many years, which he states came into being before Booth I was known. Mr. Vinson has 15 trees of this seedling.

Joseph W. Irwin of Princeton submitted a seedling to be called Irwin which is a small fruit maturing in March, shown in Figure 5. The parentage of this seedling is not known. The tree is about 10 years old and yielded five bushels of fruit last year.

A seedling to be called Marshall was submitted by Charles J. Blair from his young grove near Goulds. The tree is about five years old and is likely an unbudded root stock, which appears very much like the surrounding Booth 7 and 8 trees. This fruit which ripens in February and March is shown in Figure 6. The rind of this fruit is very thick but pliable enough to allow the determination of the flesh. The seed is surprisingly small, with the surrounding flesh of good quality. The rind or portions of it turned black, on the specimens submitted, as the flesh softened.

Albina is the name of a seedling submitted by The P. and C. Grove in Perrine. There are about a dozen trees of this seedling in the grove which were propagated by a previous owner. Nothing is known of its parentage. These trees, which are 15 years or more old, have fruited quite well. The fruit, shown in Figure 7, ripens in November and is of good quality. The name appearing in the picture is one the chairman used to identify the fruit before it was named. The seed of this fruit is rather large.
There are a few interesting items about new avocados your committee desires to bring to your attention. There is a variety called Areu, of good quality, at the USDA Plant Introduction Garden, which starts blossoming in November and fruit from this bloom is ripe in early April. The variety was obtained from the Society Islands and the record shows that it arrived there from Egypt. More will be known in a few years about the possibility of this variety, for in one grove several trees have been top worked to it. The Brooks and Tower Nursery expect to propagate this season, a thousand trees of this variety. In Puerto Rico is a variety, Gripinas 13, which behaves in a similar manner—blooming in November and maturing its fruit the following March and April.

There is a seedling which may be termed Brodgen in the grove of T. W. Brodgen of Winter Haven which has recently caused much attention through a newspaper account of a young seedling tree of it being able to survive in North Carolina. Dr. Geo. D. Ruehle knew of this tree and its fruit when he lived in Winter Haven many years ago. It is a very hardy tree with a dark purple fruit which, in Homestead, may be good eating before any of the early season commercial sorts.

The Sub-Tropical Experiment Station has obtained from Dr. Wilson Popeno, scions of the many seedlings selected by the California Avocado Society at Atlixco, Mexico in 1947 and 1948. At Homestead are growing one and two year old trees of these selections. They are mostly Mexican x Guatemalan hybrids that

Your chairman had a visit from Alvaro Iznaga, M.D. of Santa Clara, Cuba, who is an avocado fancier and grower in that country. He has our Pollock variety in his grove and knows of no local fruit that is earlier in ripening than it.
An early ripening avocado has come to the attention of your committee, in the grove of S. C. Essig, formerly owned by Mrs. M. R. Pond near Princeton. It is as early as the Pollock with about half the size. Mrs. Pond obtained scions of this seedling some years ago from Bronson Bayliss' grove. Several trees have been top worked recently to this seedling in the Essig grove so in a few years more will be known of its behavior.

Your committee is particularly interested in locating seedlings which will extend the producing season of avocados and will extend the region in Florida which can produce avocados. The discovery of an avocado which will stand wet feet would be a real accomplishment.

DESCRIBING FLORIDA VARIETIES OF LYCHEE

G. Weidman Groff
Lingman Plant Exchange
Laurel
and
Su-Ying Liu
Barbour Scholar and Research Assistant
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The primary object of this paper is to prepare the way for a better understanding of lychee varieties by reporting on techniques for field studies, descriptions and establishing of names. After outlining procedures and techniques we exemplify their standardized descriptions, in keys based upon fruit, and in charts of characteristics. We desire to preserve the long-established Chinese names of old-world varieties which have come to America from China; and we suggest that new personal, regional, or appropriately descriptive names be applied only to forms isolated as seedling selections or originated by crossing of the well known old Chinese or other Oriental varieties in other countries. Five basic lines of procedure are recommended for long-range program of systematic pomology in relation to the lychee:

1. Close observation and description of the lychee trees and fruits already present in our gardens, to be followed in due time by the introduction of hitherto unrepresented varieties. A prerequisite for intelligent work in introduction and improvement will be good keys and clear descriptions. The final approval of accepted names might well be entrusted to an authorized lychee variety committee. Such a committee should follow the recommendations of the International Botanical Congress, to the end that every name would be validated by a proper description, by illustrations, if needed for clarity, as would generally be true, and by the designation of type material for preservation and future consultation. There is no more reason for irresponsible new naming of old varieties in horticulture than there is in any other branch of systematic science. At the time of naming a new variety the one describing it should give a record of its origin, should indicate the precise individual living plant to serve as a type, and should grant the privilege of preparing record specimens from it for pomological and botanical collections. Not every seedling will be worthy of clonal propagation because of its merits in horticultural or its botanical distinctiveness, and there is no reason for multiplying names unnecessarily.

2. A thorough review of the sources of origin and history and the acquisition and dissemination of all lychee introductions that have been maintained. The series of Seed and Plant Inventories of the U. S. Department of Agriculture (10) is the most fruitful source of information covering lychee introductions, for there have apparently been few successful private ones into the United States.

3. Acquaintance with keen observations of Chinese plantsmen through the centuries as recorded by their literary men and artists. Some of this interesting information appears within the pages of 'The Lychee and Lungan' by the senior author (3). More remains to be translated from the Chinese.

4. A comprehensive review of the detailed work of plant taxonomists in descriptions of members of the plant family Sapindaceae, especially the Nephelieae, the Lychee-Lungan-Rambutan-Pulasan tribe. The German botanist Ludwig Radlkofer (1829-1927) made a life-long study of these plants and at the close of his life published a monograph (9) which will be authoritative for many years. We have drawn heavily upon him for detailed knowledge of geographical range and morpho-