A Californian's Analysis of the Florida Citrus Industry and Some of its Problems

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INTRODUCTION

Through the courtesy of the management of the South Florida Fair it has been my privilege to make three successive visits to your state, in 1926, 1927 and 1928, respectively. These visits have comprised approximately a month each and have been largely devoted to the study of your citrus industry. During the three months I have spent in your delightful state I have visited nearly every important citrus section and most of the major producing areas have been visited and studied three years in succession and under widely varying conditions of weather, crop, and prices. I have no hesitancy whatever in stating that I have enjoyed and profited by these visits more than any other similar period in my experience. My debt of gratitude and appreciation for the many courtesies and wonderful hospitality extended to me everywhere in Florida is very great and is hereby gladly acknowledged.

As a result of the assistance so generously given me by your Experiment Station and College of Agriculture representatives, state officials, United States Department of Agriculture specialists, County Agricultural Agents, marketing agencies, and growers I feel that in some degree at least I have reached an understanding of your citrus industry and its problems. And were it not for the tutelage gained from the sources above enumerated and the urgent request of your Secretary I should hesitate indeed to offer comments bearing on the solution of these problems. In doing so I must request your indulgence for any of the manifest errors involved in the analysis presented, as I am fully aware of the limitations of my knowledge of and ability to understand and interpret your conditions.

OBJECTS OF THE STUDY

The immediate objects of my study have been four in number, as follows:

1. To ascertain what you are doing in citrus fruit production in Florida; that is to say what the situation is with respect to production and acreage, both bearing and non-bearing, and also by varieties and shipping seasons.

2. To learn how you do it; that is to say what your cultural practices are and the reasons for them.

3. To judge of what you can do, or in other words the possibilities in the way
of increased production of citrus fruits in Florida and the normal range of production costs.

4. To find out if possible what you are likely to do in the future, or in other words the measure of competition which California may expect from Florida.

GENERAL CONCLUSIONS

I feel that I have been reasonably successful in learning what you are doing in citrus fruit production although it is much more difficult to obtain satisfactory statistics on your industry than is the case in California. This is apparently due to several reasons; you do not have statistics-gathering agencies so highly developed as we do nor is there any marketing agency in your industry which occupies the dominant position that the California Fruit Growers Exchange does in ours. Consequently you have greater difficulty in accurately inventorying your citrus industry than we do. Nevertheless by securing data from the various sources available and comparing and checking them a fairly accurate picture of the extent of your industry has been obtained.

Your total citrus acreage appears to be somewhat larger than ours (250,000), by perhaps 20,000 acres or thereabouts. Your acreage of grapefruit appears to be somewhat more than half again as large as our lemon acreage (50,000). Your plantings of tangerines and Satsumas are apparently about double our grapefruit acreage (10,000). And your acreage of oranges appears to be about 30,000 less than ours (200,000).

By far the most significant difference, however, is the fact that approximately 40 per cent of your acreage has not yet reached full bearing whereas less than 10 per cent of ours is still to come into production. It is clearly evident, therefore, that, barring a continuance of the most distressing unfavorable weather conditions of the past few years, your production of all citrus fruits is destined to increase greatly and rapidly. It is my impression that your increase in orange production will be mainly with the Pineapple and Valencia varieties and in grapefruit with the Marsh Seedless, varieties which are normally shipped during the winter and spring months.

Likewise I feel that I have come to an understanding of the major reasons why your cultural practices differ so markedly from ours—differences so great as to cause the greatest astonishment to growers from each state when visiting the other. It is my conclusion that these differences have to do mainly with the moisture factor—the factor that renders your climate semitropical as contrasted with ours which is typically subtropical. Yours is a humid climate with relatively dry winters and wet summers. Ours is an arid climate with long, hot, and dry summers and short and relatively wet winters. The term “relatively” is used advisedly since your “dry” winters are almost as wet as our “wet” winters.

But rainfall is not the only factor involved. The difference in atmospheric humidity is almost as great and fully as important. In your state it averages much
higher than in ours. You have a natural out-of-doors greenhouse climate; we have the climate of an irrigated desert. And in the differences between the two are to be found the explanations for most of the variance in cultural methods as between the two states, as well as the rather marked differences in the appearance of the trees and the dissimilar character of the fruits.

Our orchards must all be irrigated and hence the land is carefully prepared for irrigation before the trees are planted. On your flatwoods and low hammock soils your groves must be drained and hence they are carefully ridged or mound ed before planting.

Very little of our citrus area has ever been heavily forested and on account of competition for expensive and precious moisture it is all thoroughly cleared before planting. Much of your acreage, especially in the hammock areas, is only slightly or partially cleared since competition for moisture is usually a problem of minor importance.

The necessity for cultivation as an aid to irrigation and to eliminate competition from weeds operates to keep our orchards clean and free from weeds during most of the year, particularly the growing season, while your orchards are dense with growth at that season of the year—and with no resultant injury to your trees. On the other hand our orchards are normally overcropped during the winter months when we can take advantage of the winter rainfall, and competition with the trees is not injurious since they are semi-dormant, while at that season your groves are usually worked down and kept cultivated.

If moisture is available your trees continue to grow during the winter months for your mean winter temperatures are higher than ours. In California, even though the soil be moist, the trees are relatively dormant. This deficiency in soil moisture is the major cause of dormancy in your state whereas in ours the lower mean temperature is chiefly responsible though aided materially by keeping the soil wet. These rather fundamental differences serve to explain why it is that our trees withstand lower winter temperatures than yours with less injury to both wood and fruit; they are much more completely dormant.

Our trees do not grow as fast as yours, nor as large. They are inclined to be smaller and thicker and more dense of foliage—another climatic reaction. Hence it may readily be seen that both the trees and groves differ markedly in appearance in the two states, even though they be of the same varieties.

But the differences are not confined to the trees and groves. The appearance and character of the fruits is very different, even in the case of the same varieties. Your fruit does not develop the deep color which our dry air and northern latitude produces. Nor is it as free from blemishes, stains, and other effects of insects and diseases. On the other hand it is distinctly thinner skinned and juicier though the juice is in general not so concentrated. As to which is the better in
eating quality it is impossible to say for
tastes differ. In any event the differ-
ences in the character of the fruit grown
in the two states are of much greater com-
mmercial importance than are the similari-
ties—truly a most fortunate situation
since we must necessarily compete with
each other for the favor of the Ameri-
can consumer.

Then, too, your humid climate is much
more favorable for diseases of the fruit
and foliage than is ours, and also for cer-
tain of the insect pests. On the other
hand the vitality of your trees is not so
seriously impaired by insect pests as is
the case in our arid climate and in addi-
tion the humidity of your atmosphere
during most of the year favors the activ-
ity of the entomogenous fungi which act
to keep many of your insect pests under
natural control, a condition which does
not exist in California.

Many more illustrations might be cited
of the differences in the climatic effects
on citrus trees in the two states but surely
enough have been given to quite ade-
quately explain why your groves differ
so markedly in appearance from ours and
why of necessity the cultural practices in
your industry are in most respects so rad-
ically different from ours. There are,
however, certain areas in your state where
the groves and the cultural practices do
fairly closely approximate ours but these
are all to be found in the higher eleva-
tions in your Ridge section where the
climatic conditions most nearly approxi-
mate ours.

I am convinced that in general the pro-
duction of citrus fruits in your state re-
quires less labor and expense than is the
case with us. In my opinion this is both
an advantage and a handicap. Some of
the reasons for the latter will be referred
to later.

To a Californian the possibilities for
increased citrus fruit production in Flor-
da are both appalling and discouraging.
It is apparent that should you wish to
do so you might easily very greatly in-
crease your present acreage as there
is still much good undeveloped citrus
land in Florida. And the tremendous
variation in yield which I have ob-
served in your state gives rise to the
belief that you could readily increase
your present average yield materially
if sufficient incentive were provided.
Moreover it is certain that both your
costs of developing groves and of
producing citrus fruits are lower on the
average than is the case with us.

No great expansion in citrus acreage
can be expected in California for we have
neither the land nor the water for much
more acreage than we now have unless
we put out some of our other fruits and
plant citrus in their place. And because
our cultural practices are more highly
standardized than yours we can hardly
hope to raise our average yields as much.
Moreover our orchard development costs
average much higher than yours, at least
half again as much, while our costs of
production are perhaps one-third greater.

As to what Florida is likely to do in
citrus fruit production in the next decade
or so is of course problematical and of
that you are much the better judge than I.
It seems to me a practical certainty, however, that your production will very greatly increase and that there will also be some expansion in acreage. It is to be expected that this increased production will bring with it serious marketing problems the solving of which will tax your ingenuity and resourcefulness to the limit. The directions in which improvements are most needed as I view them will be indicated in the discussion which is to follow.

AN ECONOMIC ANALYSIS OF THE FLORIDA CITRUS INDUSTRY

Regardless of whether the farmer's crop is marketed co-operatively or competitively, in the production of it, unless he voluntarily becomes merely a wage earner and stockholder in a vast production agency, he must forever remain a competitor with all other farmers producing the same crop. This is an important and inescapable fact which the almost universal present-day discussion of marketing problems has tended to obscure. While citrus growers may, and in all probability should, co-operate in marketing their crops, they must necessarily compete with each other in the production of them. And, as has always been and always will be, the reward will be largely to the efficient producer. His return will be higher than that of his neighbor. But what are the factors that individually affect or collectively make up the farmer's return? They are five in number as follows:

1. The size of his productive enterprise (grove, herd, flock, etc.). It is of course obvious that the productive enterprise may be too small to make a sufficient net income for the farmer's family even at high prices for his product. There are many citrus orchards in California which cannot support a family because they are too small; in fact the land subdivision movement has tended in general toward too small orchard holdings in our state. I am convinced that the same thing is true in Florida.

But not only is the average citrus holding too small to make a satisfactory return for the average family; it does not provide profitable employment for the farmer during the whole of the year. Yet it is unreasonable for a farmer to expect full-time pay for half-time work. It is my candid opinion that the average size of citrus holdings in both California and Florida must increase considerable in the years to come if our growers are to remain reasonably prosperous. The only other alternative is to diversify with some other type of farming such as the growing of truck crops, dairying, or poultry raising.

2. The quantity of production per unit (yield per acre, pounds of milk or butter fat per cow, number of eggs per hen, etc.). The time is long since past in American agriculture when the farmer with an average yield can hope to make satisfactory returns, excepting in years of unusually high prices. Farmers with low yields must in general expect to lose money. The relation between high yield and net income is in general well understood and with most crops in most seasons it constitutes the difference between
about "breaking even" and making a reasonable profit. In years of low prices it usually comprises the difference between profit and loss.

Moreover in many crops, and this is especially important in the citrus fruits on account of the high overhead costs, there is an almost inverse correlation between yield and production costs. That is to say the higher the yield the lower is the production cost per box. I have a very close friend in the citrus business in California whose records are always available to me for study. His annual costs per acre have not changed materially in the last seven years. In 1920 with a yield of 96 packed boxes per acre his cost per box was slightly more than $4.00 or actually more than the average price received that year. By means of improved methods, mainly fertilization and scale control, he has consistently improved his yield until last year (1927) it reached an average of better than 500 boxes per acre with a production cost of 64 cents per box. In his case as in most others simply increasing the yield per acre has changed the situation from one of working to support a grove to one of having the grove support him and that quite handsomely.

It seems probable that an era of lower price levels is at hand in the citrus industry of the United States. Surely one of the easiest and best means of successfully meeting this situation is afforded in the possibility of reducing costs by increasing yields. As previously indicated, I am convinced that this is feasible in your industry; I know it can be done in ours.

3. The quality of production per unit (per cent of best grades and sizes of fruit, etc.). The importance of quality as a factor in determining price can hardly be overemphasized; in fact it is with many agricultural commodities, and notably fruits, the dominant factor today. The American consumer is rapidly becoming more particular and discriminating in his tastes and desires. He demands, and will pay for, more attractive, more uniform, and better quality products. Thus the premium for quality products, which are either those in demand or for which a demand can be stimulated, has become increasingly greater to the point where the better grades and sizes almost invariably bring satisfactory and profitable prices even though the rest of the crop may sell at a loss. This important fact is amply demonstrated in the well-known fact that certain Florida and California brands of citrus fruits which represent superior quality, always sell for satisfactory prices even though the market in general may be low.

In many agricultural products the premium paid for superior quality is such that it is much more profitable to produce smaller crops of the best quality than large crops of only average quality. This is especially true of those fruits where large size is at a premium such as is the case with prunes, olives, and canning peaches. Most fortunately for the citrus grower, however, it has been the experience in California at least that the cultural practices which results in the
highest yield per acre also tend to produce the best quality fruit. It is my impression that in general this also holds true in Florida, though perhaps to a lesser degree.

The question of what are the factors which collectively constitute quality, from the point of view of the consumer, is one which in my opinion should be and doubtless is of paramount importance to your citrus growers and marketing agencies. Unfortunately quality is by no means a simple matter to define but it is certain that the quality of any product which is to be marketed must be determined in part at least by comparison with similar products with which it must compete. If citrus fruits were grown only in Florida or California the difficulties of defining quality and establishing grades would be less by far than they now are. Your fruit is so different from ours, and in such important characteristics, as to render it certain that similar standards of quality cannot be successfully employed in the two states. Moreover, it seems to me that your problem of defining quality is more difficult than ours on account of the manifestly greater variation in your fruit, which I believe to be due primarily to soil and stock influences. Our fruit is certainly much more uniform in quality than yours.

Of one thing I am convinced, however, and that is that the American consumer instinctively and naturally prefers a bright, clean, and attractive product. It seems clear that he must have a rather strong incentive, either of price or education, to induce him to prefer a less attractive article. As to whether it would cost you more to produce bright clean fruit than it would to educate the consumer to prefer the less attractive though equally good product I am of course unable to even hazard a guess. I rather question the advisability of the latter policy though of that you are naturally the final judges. From my observations in your state I believe that it is entirely practicable and probably would be profitable for you to improve your methods of controlling the insects and diseases which render so much of your fruit unattractive in appearance. With this I know many of your growers will disagree and perhaps with very good reason.

In any event I am sure the future will demonstrate the soundness of the two general propositions, namely that superior quality will continue to return substantial premiums above general price levels and that you will find it advisable and necessary to work out standards of quality in accordance with your rather specialized and unique conditions.

4. Economy of production per unit (cost per box, per pound of butterfat, or per dozen of eggs, etc.). The necessity for reducing costs is today the outstanding situation in all productive enterprises. In the manufacturing industries greater efficiency and increased output are the means most employed to lower costs. In the wholesale and retail fields lower margins and more rapid turnovers are being stressed. The farmer, too, must follow suit and reduce his costs. In the case of the citrus industry the most practicable means of so doing appear to consist first
in increasing yields per acre, as illustrated above, and second in eliminating unnecessary waste.

Citrus growers unquestionably spend large sums for materials and in conducting operations which do not make a return for the expenditure. Thus in the case of my California grower-friend, above referred to, the principal factor involved in the remarkable increase in production in his orchard was a change in the fertilizers used. He did not cut down his fertilizer bill but he did discontinue purchasing certain so-called fertilizers which have never been proved to be necessary or beneficial. Instead he purchased more carefully and put his money into fertilizers which in California have been demonstrated conclusively to pay returns in increased crops.

We have found in California that we have greatly over-emphasized the importance of cultivation with the result that many of our growers are now saving half the costs of cultivation and at the same time obtaining equally good or even better results. Certain other reductions and economies can doubtless also be made with advantage to the grower's pocketbook.

Among the greatest sources of loss, however, at least in California, is the relatively low percentage of efficient trees in the average orchard. Our general conclusion, based on a fairly large number of orchard analyses is that approximately one-fourth of the trees in our orchards are "boarders" and do not pay for their keep. Another fourth of them are merely selfsupporters;" they do not, therefore, return a profit. The profit which is made comes from approximately half the trees. If we can improve the efficiency of our orchards from fifty to seventy-five per cent by this means alone the average net income will be increased by half. In most cases this would mean the difference between a bare existence and a very satisfactory return.

In this connection I should mention that we have found, both to our surprise and relief, that by far the most of our drone trees are not inherent low producers; their productive capacity has been curtailed either by impairment occasioned by diseases or insect pests or by environmental limitations. They do not need to be pulled out and replaced or budded over; in fact such treatment has failed to improve the situation. What they require is treatment for disease, or spot fumigation, more fertilizer, more or less water in accordance with soil conditions, or other appropriate treatment. In short they need special care and we find that they readily respond to it.

But this means applying the efficiency analysis to the citrus grove and requires the keeping of simple yield and tree health records which can be had only by inspection of each individual tree several times a year. It pays in California, however, and my impression is that eventually you will come to it too.

Before taking up the fifth and last factor in this last analysis I desire to call your attention to the all important fact that the four factors above enumerated
and discussed are all to a very consider-
able degree subject to the control of the
grower himself. Upon him, therefore,
rests the responsibility for determining
the degree to which these factors operate,
favorably or not, in his particular grove,
the source from which his net income is
derived.

If his acreage is too small it should be
enlarged and this is usually practicable.
If diversification is more desirable there
are nearly always opportunities for ac-
complishing this.

Yields per acre can usually be increased
either by more or better fertilization or
in other ways as the individual case may
require. In nearly all cases the average
grove efficiency is capable of improve-
ment.

The quality of the fruit or at least the
percentage of best grade fruit can usu-
ally be improved or increased through the
more efficient control of insects and dis-
eases.

And there are always ways of reducing
costs, some of which have been indicated.

In short sufficient knowledge, derived
from experience and experiment, is al-
ready at hand whereby the average citrus
grower in both Florida and California
can greatly improve his situation—if he
will only use it. There is nothing new in-
volved in these solutions to your prob-
lems as they have been discussed thus far:
a greater emphasis has merely been given
to facts and conditions already widely
known and recognized.

“But suppose we all follow the sugges-
tions you have offered” you say. “We
will then be no better off than we were
before. The increased production will re-
sult in lower price levels and even though
costs have been reduced our net income
will be no greater than it was before.”
This apparently logical argument has
many adherents among farmers who be-
lieve that the primary problem of agricul-
ture today is marketing rather than pro-
duction.

Such may be the case with some crops
but with many the principal problem is
that of reducing costs of production. And
in the citrus industry it seems certain that
whether we like it or not a period of in-
creased production and lower price levels
is just ahead. We will have to meet the
situation when it develops or go under.
The efficient grower will do so and sur-
vive either by reducing costs or impro-
ing the average quality of his product.
And obviously not all citrus growers can
or will do either. They must inevitably
fall by the wayside in the competition.

5. The Efficiency of Marketing. Ef-
ficient and successful marketing depends
on a large number of factors only a few
of which will be referred to in this dis-
cussion.

Grading. The grading of the fruit is
obviously a matter of the greatest import-
ance in successful marketing and the es-
tablishment and maintenance of grades
are primary problems with all marketing
agencies, whether operated privately or
coopertively.

Grades must be determined on the ba-
sis of the inherent differences in size, ap-
ppearance, and eating quality of the fruit
in relation to what the market either de-
mands or can be educated to demand. And as previously indicated, competition from other sections is a factor of importance in determining what the market demands.

The inherent differences in the appearance and eating quality of your citrus fruits are much greater than in California and consequently it would appear that your grading problems are more difficult to solve. It seems to me, as a Californian, that you are faced with three possible solutions: 1, the use of more commercial grades than we employ; 2, the inclusion of much wider variation in the grades you use; or 3, the elimination of your poorer grades, which include much fruit of good eating quality but lacking in attractive appearance. To adopt more grades would appear to be the wisest procedure in the event that you cannot prevent the shipment of the poorer fruit, though the latter would seem best for the industry if it can be done. To do so will require much more careful and efficient disease and insect control than is now the general practice.

In this connection I wish to refer to the so-called “compulsory spraying” law which some of your growers seem to think is one of the reasons why grading problems are easier of solution in California. The fact is that we do not have any law requiring our growers to spray or fumigate their groves. We do have a general statute, however, under which our fruit growers are compelled to abate any and all controllable nuisances on their property, providing these constitute a menace to their neighbors.

Our situation is very different from yours in certain important respects as they relate to insect control. Insect pests in general are more injurious to our trees than they are to yours, on account of our low atmospheric humidity and generally less favorable climate. Moreover the spread of insects from one orchard to another is much more rapid on account of the greater prevalence of winds and the even more important fact that our orchards are mostly separated from each other only by roads or property lines. Consequently with us an infestation of mealy bug, or any of the other scales, becomes a menace to all the orchards close to the center of infestation. The abatement of such a menace therefore becomes in California a matter of community interest and in recognition of this interest the County Horticulatural Commissioner is both empowered and in fact compelled to take the necessary steps to abate the menace.

I have not been able to find evidence indicating that your insect control problem is similar to ours in any important detail. In our case negligence on the part of a citrus grower not only injures his orchard but also those of his neighbors. As near as I have been able to determine this is not true in your industry where the penalty for failure to control insects and diseases seems to fall entirely on the owner of the grove affected. Consequently I do not see any reason for a “compulsory spraying” law in your state, nor do I think it would be workable.

**Standardisation.** Whatever grades are adopted, however, must be rigidly main-
tained if marketing is to be effective and successful. Further, grades must be uniform if market reputation and demand are to be created. Here again your industry is faced with problems more difficult of solution than any we have confronted in California. As I have seen your fruit, there is fully as much if not more inherent difference between your Valencia orange on the lemon root grown on high pine land and the same variety on sour stock grown on hammock soil as there is between the Valencia and Jaffa oranges grown side by side under either of these two sets of conditions. Your problems of grading and standardization are indeed difficult and I must confess that I am unable to suggest practicable solutions. Nevertheless I am sure you will agree that these problems must and will be solved.

Their solution would certainly be easier to effect and would undoubtedly be expedited if the bulk of your crop were handled by one marketing agency. In the absence of this opportunity to solve them the only alternatives would appear to be some other form of co-operative effort, or compulsion through state or federal agencies.

Regulation of Shipments. The regulation of shipments in such a manner that the markets are neither over or under supplied and fluctuations in price levels thereby minimized appears to be the phase of the marketing problem uppermost in the minds of Florida citrus growers. This is indeed a matter of vital importance to the industry and your growers are to be commended for the splendid efforts they have made to achieve this object.

The orderly marketing of the Florida citrus crop would not only benefit the Florida growers but also the California growers as well. But I think you will agree with me that, desirable as it may be, regulated shipment of your crop will not solve all of your problems. It would undoubtedly greatly benefit your industry but there still remain the even more fundamental problems of preparing to meet the lean years ahead. The past five years have been among the best in the history of the citrus industry in the United States. But it will not always be so. The probability is that within the not distant future there will be ten or fifteen million boxes more of citrus fruits to market from Florida and California than have ever been before.

However necessary and important orderly marketing of your citrus crop may be, it seems clear that it can be provided by only one or the other of two alternatives, the growth or creation of a co-operative marketing agency exerting a dominant influence in your industry, or the formation of some workable form of clearing house organization. Judging from our experience not only with citrus but with other fruits as well the former solution is preferable to the latter.

Fruit Handling Methods. The methods you employ in handling your fruit, as I have observed them from picking the fruit to loading the cars, have been both a cause for astonishment and disappointment. Your fruit is naturally a more tender and fragile product than our
thicker skinned and less juicy fruit. And your atmospheric humidity is more favorable to the activity of fruit-rotting fungi than ours. Yet your handling methods are in general much less careful than those we employ and the result must inevitably mean greater losses from decay in transit and storage.

I am convinced that you can with profit make decided improvements in your handling methods and in your packing house equipment. If I were packing citrus fruit in Florida, and especially oranges, I would certainly do some experimenting along the lines of working out a curing treatment to toughen the fruit prior to its being run through the packing house.

**REQUIREMENTS FOR SUCCESSFUL CITRUS FRUIT PRODUCTION**

Before concluding this rather long and perhaps rather tedious paper I would like to emphasize a conclusion I reached some years ago, which has been greatly strengthened by the observations I have made in Florida. It is that after all successful production of citrus fruits the world over depends on a few relatively simple primary requirements. Given a climate and soil reasonably favorable there are but three fundamentals; 1, Trees of good bud and stock parentage; 2, the control of soil moisture (drainage or irrigation or both); and 3, the maintenance of soil fertility. These three fundamentals are universally necessary and in especially favored sections they are all that is required to successfully produce citrus fruits.

To these three must be added a list of three possible other requirements, depending on local conditions. These I term local essentials and they are, 1, the control of insects; 2, the control of diseases; and 3, protection of the trees against unfavorable weather conditions (frost, wind, sunburn, etc.). In many sections all three are essential to success; in others only one or two are required. And their relative importance varies greatly in different sections.

Good trees grown on soil the fertility of which is maintained and the moisture content of which is controlled almost invariably produce good crops. If present and injurious, insects and diseases must be kept in check and in some cases protection against unfavorable weather conditions must also be provided.

Fortunately in both Florida and California enough is known concerning each of these six essentials to make possible the guarantee that any grower in a region where soil and climate are favorable can be assured of satisfactory crops if he will but apply what is already known. As to whether he makes a profit or not, obviously depends on his efficiency as a grower and the market situation.

All other practices such as cultivation, cover-cropping, and pruning may be regarded as non-essential but frequently useful operations. Cultivation has in general been greatly overdone as has also pruning. On the other hand the tendency is to not employ cover-cropping enough.
None of them are essential, however, though many growers will find it advisable to employ them.

While the requirements for successful citrus fruit production, the primary production problems of the citrus grower, are similar the world over, local conditions of climate and soil vary so widely that of necessity the methods pursued by the growers in providing the requirements and solving these problems differ greatly in the various citrus-producing regions. Each must develop its cultural practices and solve its problems in relation to its own distinctive soil and climatic conditions. Herein arise the difficulties which often ensue when practices which are sound in one citrus-producing region are transplanted to and employed in another. It is not surprising that they often fail to work.

There are no two major citrus-producing regions of the world more dissimilar than Florida and California. To attempt to compare them is to endeavor to do the impossible and the odious. On the other hand they stand in marked contrast to each other and fortunately contrasts are frequently refreshing. Obviously for one state to imitate the other is not likely to result in much benefit. And yet I have noted an apparently widespread sentiment among your growers to the effect that the solution to many of your problems lies in following the methods employed by the California growers. While I recognize the sincere compliment implied in this feeling it is my belief that the solutions to your problems will come, not by imitating others, but by analysis of your unique and specialized conditions and the application of the experience of your best growers and the recommendations of your state and federal research agencies.

In conclusion I wish again to express my pleasure at having had the opportunity to study the Florida citrus industry and the hope that the observations and conclusions above given, though all too obviously inadequate, may at least be productive of some benefit to your industry.