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#### *About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

[22 May 1971]



UNIVERSITY OF FLORIDA  
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES  
For Immediate Release

U. of F. Agriculture  
Vice President Steps  
Down  
By ~~Herbert~~ <sup>Harpe</sup> Sharpe  
**News Release**

Woffie  
Thought you would  
want to know about  
this, RAC

Gainesville (SPECIAL)--Dr. E. T. York, Jr., University of Florida Vice President for Agricultural Affairs, today (5-22) announced that he will relinquish his administrative responsibilities to assume other duties in the University as soon as his replacement is named.

In making the announcement, the 49-year old educator said, "This has been an extremely difficult decision to make. I have greatly enjoyed this assignment and I will leave it with nothing but a feeling of good will and appreciation to all of those with whom I have been privileged to associate."

"No one could have received better cooperation, support, and assistance from the University administration, the Board of Regents, members of the Legislature, the agricultural leadership of the state, and the members of the staff and faculty of IFAS."

Dr. York explained: "For some time I have had a compelling desire to do some other things I have been unable to do in recent years. For one thing, I want to return to a teaching activity which represents my first love professionally. I am also vitally interested in working on some of the critical problems of world hunger." York holds an academic appointment as Professor of International Agriculture.

In his letter of resignation submitted originally to President O'Connell in April, 1971, Dr. York stated: "I feel that nine years is long enough for one to

occupy an administrative position of this nature."

University President Stephen C. O'Connell expressed regrets but no surprise at Dr. York's desire to relinquish leadership of the South's foremost agricultural research and education program. "Dr. York wished to relinquish his administrative duties last year, but agreed, at my request, to remain until this year in order to bring several important projects nearer to completion."

O'Connell, in paying tribute to York's nine years of leadership, said, "I am very proud of the IFAS organization. In many respects it is unique in the nation and without question one of the very best." He continued by adding, "The fact that Florida is today enjoying the most rapid rate of agricultural development in the nation in one measure of the effectiveness of IFAS under Dr. York's leadership."

Furthermore, O'Connell said, "I don't believe there is a unit within the University where morale of the faculty and staff is higher, or where the productivity is greater than in IFAS. Dr. York's capacity for leadership and ability as a perceptive, efficient administrator is unsurpassed by anyone in his field. He has been widely sought after by educational institutions in other states and has received a number of excellent offers from private enterprise. All of us are grateful that he has elected to remain at this university and in this state. Working with him has always been a pleasure."

Dr. York came to the University June, 1963, as provost for agriculture, and was named vice president for agricultural affairs in 1971. In 1964, Dr. York organized the University's agricultural teaching, research, and extension programs into the Institute of Food and Agricultural Sciences. This

organization has resulted in more efficient and effective coordination of the University's agricultural programs statewide.

IFAS has become widely known throughout the state and the nation. Because of its effectiveness and its degree of flexibility to meet change and to adjust to new needs, other states have implemented agricultural research and educational programs patterned after the IFAS organization.

In 1964 Dr. York launched "Operation DARE" (Developing Agricultural Resources Effectively) which has become a framework for planning and developing action programs aimed at accelerating the development of Florida agriculture. Florida's farm income is currently exceeding the original DARE goals and should easily reach the \$1.5 billion level projected for 1975. With such rapid development, Florida, in recent years, has enjoyed the most rapid rate of agricultural growth in the nation.

Under Dr. York's leadership, the Center for Tropical Agriculture was organized in 1965 and has become a vital part of IFAS. CTA has gained a worldwide reputation for effectively solving tropical agriculture problems as related to Florida's multi-billion dollar agricultural industry.

York also initiated the SHARE (Special Help for Agricultural Research and Education) program in 1968 for the purpose of generating private financial support for the University's agricultural programs. Operating as a part of the University of Florida Foundation, the SHARE program has already received some \$1.3 million in gifts, along with an additional \$1.6 million in pledges and bequests.

Prior to coming to Florida, Dr. York was administrator of the Federal Extension Service, USDA. He served as director of the Alabama Extension Service, Auburn University, from 1959 to 1961, and as eastern director of the American Potash Institute, 1956-59.

From 1949 to 1956, he was on the faculty of North Carolina State College, where he became head of the agronomy department. He received his bachelor's and master's degrees in science from Auburn University, and his Ph. D. from Cornell University.

Dr. York is a fellow in the American Association for the Advancement of Science and the American Society of Agronomy, and is listed in Who's Who in America and many other biographical references. He has served as chairman of the Division of Agriculture, and as a member of the Senate and Executive Committee of the National Association of State Universities and Land-Grant Colleges.

He is a member of the Board of Directors, Southern Interstate Nuclear Board and served as president of the Association of Southern Agricultural Workers. In addition, he served as chairman of the Council on Education in Agricultural Sciences of the Southern Regional Education Board and on numerous other national and regional committees, councils and commissions.

Dr. York has been appointed to major national commissions or boards by three U.S. Presidents. The most recent was in 1970 when he was appointed by President Nixon to the Board of Directors of the National Center for Voluntary Action.

He also served in 1970 as one of the two U. S. delegates to the World Conference on Agricultural Education and Training held in Copenhagen, Denmark.

He has served numerous times as consultant or on advisory bodies to the U. S. Department of Agriculture, the Agency for International Development, the National Academy of Sciences and several foreign governments.

Dr. York has been active in many community and church affairs. He served as president of the Gainesville Rotary Club and chairman of the Board of Deacons of the First Baptist Church of Gainesville. In 1971, he was chairman of the highly successful Alachua County United Way campaign.

Dr. York has had a special interest in youth and has served for many years as a member of the Board of Trustees and Executive Committee of the National 4-H Foundation and the Board of Directors and Executive Committee of the National 4-H Service Committee. He has served as president of the national Education Foundation of Alpha Gamma Rho since its establishment in 1965.

He has received numerous honors from many state and national organizations, including the Freedom Foundation's George Washington Honor Medal Award, the Progressive Farmer's "Man of the Year" award, and the National Limestone Institute's Award for Distinguished Service to the Nation's Agriculture.

He is married to Vermelle ("Vam") Cardwell of Evergreen, Alabama, and has two children, Lisa Carol, 10, and Travis L., 7 years of age.

Dear Dr. Popelnoe -

I'm sending you a copy  
of my rept. I thought you  
might be interested in  
looking at it.

We're fine, Both are  
working.

Best to both of you.

Sincerely,

Wolfie

Avocado Insect Pests in Honduras  
or Other Central American Countries  
Studied by a Faculty Development Grant

D. O. Wolfenbarger

April, May and June 1972

Arrival was in Tegucigalpa, Honduras, April 3, and on to Escuela Agricultura Panamerica.

The avocado plantings at the Escuela where I was permitted to make observations were shown to me.

These months were part of the dry season, although the avocado trees were irrigated the effects in relation to insects apparently were not "normal." This was apparent repeatedly. It was somewhat of a surprise compared with behavioristic patterns of insects in the subtropical areas and temperate zones of the United States.

In view of lack of temperature variations in much of Central America it was expected that insect activities might be observed continuously. In other words it was expected that insects would be variously active at all times.

It was soon observed that twig boring by insects was not in progress in April, although there were many dead twigs in which boring had occurred.

Except for some questionable and doubtful specimens it could not be ascertained which insect species was responsible for the boring activities. Some specimens were obtained which will be submitted for determination.

Stenoma catenifer Walsingham, of the order Lepidoptera and family Stenomidae is known and recognized as one whose larvae feed in fruit and seed of avocados. I had in different ways, perhaps, gotten the understanding that the species was also a twig-borer. Specimens determined from those taken from trees in Mexico had been determined as catenifer.

A soil-borne organism, Phytophthora cinnamomi, is very destructive of avocado in Honduras and other Central and South American countries. It is doubtless more destructive than any insect pest present. The twig borer, however, is believed to be more destructive than any other insect pest affecting the avocado.

Lack of infestation in trees in Honduras in April and May and lack of specimens or other evidence induced uncertainty as to the species which had been boring in the twigs in Honduras, at Escuela Agricultura Agricultura. This uncertainty as to species boring into the twigs was further enhanced by reports not previously seen ( a book on economic insects in El Salvador and a mimeographed list of insects from Colombia). These reports listed two coleopterons of the weevil family Curculionidae as twig borers of avocados.



Dead twigs similar to those studied at E.A.P. were observed at other places in Honduras: Danli, Monte Uyuca (its summit, over 5000 ft.), Guinope, Comayagua and northward toward San Pedro Sula.

The many dead twigs reported above were studied as to presence in tree varieties, diameter. Inactivity of twig borer insects permitted studies of some other avocado insect pests.

After a twig has been killed one or more buds beneath the dead tissues sprout and begin to grow. In instances of boring in the second twig other sprouts grow into twigs. Multiplicity of twig growth to form "clubby" growths in rather extreme instances is often observed.

Dr. Albert L. Radspinner, Horticulturist, reported that a number of years ago the Escuela lost very many twigs, large branches and even trees, presumably from twig borer attacks.

Two leaf feeding insects were very common. A leaf miner (identification to be made) is evidently injurious to some trees more than to others. A gall maker, Trioza anceps Tuthill, of the order Homoptera and family Psyllidae, is common in Central American countries and is very abundant on many trees.

Large portions of upper leaf surfaces, were mined; to one-half, was the estimate of some leaves. Many leaves were estimated to have been mined over one-fourth of the surface.

It is a micro-lepidopteran not yet identified.

Estimates of mined surfaces per larva were made. Lengths of mines were estimated with a "map distance" measurement wheel. Mine widths were made at the initial or egg deposition point and at the terminus from which a mean width was computed.

Larvae pupate in the leaves in large cells at the terminus of the serpentine mine. Measurements of pupal cells (also sub-epidermal mines) ranged in diameters of from 3.7 to 9.3 mm. Combining mined areas of serpentine mines and pupal cells the mean area per individual mine was 58.4 sq. mm of tissues destroyed per mine.

#### Dead Twigs

Location and other characteristics of dead twigs of the avocado twig borer were noted.

More dead twigs were apparent in the more eastern parts of the orchard. No explanation is offered for this.

Dead twigs were found throughout the trees. Although more twigs are present in the upper and outer parts of the crowns of trees more dead twigs would be expected in these areas. Perhaps they are more exposed!

No tree condition seemed more favorable than another. One tree had in the near figure of 75 dead twigs.

The trees were seen in the latter parts of the dry period, after the flowering period. Most dead twigs possessed dead flower buds suggestive that these were the favored ones. It suggests, too, the seriousness of fruit losses.

Basal diameter of dead twigs was between 5 and 6 mm. Length of dead tissues of each twig was in the amount of 45-50 mm.

#### Scarabs Feeding On Avocado Leaves

On June 17, feeding was observed on leaves of avocados. There was considerable to much defoliation of one particular tree. There had been serious injury. A few small fruit had feeding injuries. At midday no beetle was observed on the tree. In company with Dr. Albert L. Radspinner, however, with flashlights and after 7:30 p.m. observations showed many beetles were on the foliage. Mating of pairs was common. Flash pictures were taken. By 8:00 a.m. the ensuing morning no beetle was observed on the tree. Older (2 months old) and newly enlarging leaves exhibited feeding wounds. Although other trees in the grove exhibited feeding wounds as made by the beetles none were observed with defoliation compared to the one above mentioned. In conjecturing on an explanation for the selection of the tree it was suggested that initial presence and feeding by 1.2 or more individuals attracted others. The tree was of Waldin variety.

#### Visitation of Desarrural, CNAG at Comayagua

I was invited to visit Desarrural, CNAG, Comayagua, an institution principally for research supported by the Honduran Government. Although it has cattle, hogs and many kinds of plants it has many avocado trees. The visit was on May 7.

Sr. Barahona of that institution took me into the orchard and indicated that they expected to plant some more avocados. He reported that he believed Phytophthora cinnamomi was the most important disease or insect problem. We saw numerous dead twigs among the trees. This was considered the second most important disease or insect pest problem.

No twig burrowing insect was taken in the orchard. They had gone, as had those at E.A.P. I had an invitation to conduct an experiment on the trees there. A number of specimens were taken for species determination, the results, when they are obtained may shed some light on the problem.

Spider mites.--Were present on old leaves in small populations. New foliage came out and was infested. Determined by H. A. Denmark as Oligonychus yothersi (McG.). By 19th May there was much red foliage and many mites. New foliage began in March shortly after bloom. More so than previous. By June 9 few mites were on leaves, owing to rains, perhaps.

A leaf-tier was apparently present in small numbers on Apr. 3 and remained. There may be two or more species of the leaf-tier group.

Visit to Glinope

Accompanying Prof. Antonio Molina R., May 16, we went to Glinope, a village or town S.E. of Zamorana, at 1500 m alt.

Several avocado trees in the village and on the road were examined.

Twig borers, gall making and leaf mining insects were observed in the trees generally. No living specimens of twig borers and leaf mining insects were found, duplicating observations at EAP.

Leaf tying insects were very frequent, more so, perhaps, than previously observed at EAP. Red mites were or had been almost universally present on the trees.

Thrips, a black species, not red-banded was observed at one location.

A round fruit, "Creole" was observed at one location. It was reportedly a very small fruit.

It was concluded that there were a number of serious insect species affecting avocado production in Central America that are not present in the U.S.A. (Florida). Some species are prevalent in Florida which were not observed in Central America.

A twig boring insect was prevalent, possibly two species. This matter needs to be determined.

Such determination must be made over the calendar year, since the insects were not active during the months studied, April, May and June.

September 12, 1972



ESCUELA AGRICOLA PANAMERICANA  
TEGUCIGALPA, HONDURAS

\*

May 3, 1972

Dr. Wilson Popenoe  
Calle de la Nobleza No. 2  
Antigua, Guatemala.

Dear Doctor Popenoe:

Those avocado leaves were infected with gall makers! I have the stem ends in water hoping to get some adults to emerge.

I removed some of the nymphs to preservative to take home with me. I found two nymphs in some galls. That is something I did not find in the specimens we took at Tatumbula. The nymphs in those died as the leaf tissues died. I have them preserved to take with me. Those nymphs were larger than those from your place. Older, too, I expect. I don't know when there will be emergence from your trees.

Oh, I found some galls in the planting on Mt. Uyuca, not so many as you sent.

There were many fine big blackberries there. So many were dropped and lost. But the fruit trees had so little fruit. I expect you know about that?

I must and I am happy to accept your invitation to come to Antigua. We are looking forward to that, June 18. We will let you know definitely a little later.

I don't know, granular, 5% G/Furandian might control those gall makers. I'd like to see it tried under a tree or two. I think the Niagara Company is sending me some here, I'll see if I can't bring you some when we come. I suggest one ounce (25 grams) per inch diameter of tree. It is to be placed in a furrow or trench about 10 cm wide and deep in the drip line of the tree. Then we hope for rain or irrigation to activate the material and send it throughout the tree.

It acts systemically and such materials make me think 2 or 3 times but I don't think there is danger. I'll eat the fruit!

We continue to have grand times. We miss Doctor and Mrs. Popenoe.  
Best regards to you both,

Sincerely,

*W. O. Wolfenbarger*

W. O. Wolfenbarger

Antigua, Guatemala 8 May 1972

Dear Doc,

Many thanks for your interesting letter of the 3rd. The plot thickens. You have found *Trioza* on Uyuca. Now I have been looking thru my library and I find Carvalho Barbisa, "Do Abacateiro e do Abacate" Sap Paulo, Brazil 1933, with a picture of a leaf from MEXICO which is just about a badly galled as the ones I sent you with Hugh. By all means bring over some *C/Furandae* if you can; we will make an experiment on two or three strong young trees at Arturo Falla's place. Hardly worth while to try an thing on my 40 year old Fuerte. Feeding roots are so far from the trunk I dont think anything in the soil would travel that far.

I dont believe they have, in the library at Zamorano, a copy of Bul. 743, USDA, "The Avocado in Guatemala". Facing page 33 is a picture of an avocado cut in halves, just lousy with larvae of *Conotrachelus*. I noted "One insect stands out above all others observed in Guatemala" This is it. Identification was made by the boys in the Bureau of Entomology at Washington, who also named about ten ~~other~~ coccids I collected in Guatemala on avocados in 1917. I also mentioned finding larvae of *Conotrachelus* in avocados purchased in the market at Guatemala City, and larvae of *Stenomma* sp. but the damage caused the latter was not so great as that caused by *Conotrachelus*. Something for you to look into over here.

We look forward to your arrival on or about 18 June. You dont need to bring any *Triza* galls; quite a few left on my Fuerte tree.

Alice joins in warmest regards to you both



ESCUELA AGRICOLA PANAMERICANA  
TEGUCIGALPA, HONDURAS

May 23, 1972

Dr. Wilson Popenoe  
Calle de la Nobleza No. 2  
Antigua, Guatemala

Dear Dr. Popenoe:

I thank you for your letter of May 17. We are glad to learn that your daughter and two grand-daughters are coming to visit you. It is wonderful.

Your plans for us to come Wednesday June 14 are fine. And to take us to Guatemala City on Monday 19th are fine, too. I'll tell you further:

Mr. Burt Colburn has requested that I look up Sr. Antonio Najera S., 6a. Ave. 1-36, Zona 14, Guatemala City. He suggested that he might take me to meet Dr. Carlos Castro, entomologist at the University there. I expect that you know all of these men? Who knows, maybe I wont have enough time there?

I'm not so sure that I'm "straightened out yet" on these avocado insects. I'll be very happy to tell you all about it when I see you. Insect and plant (or maybe its plant and insect) activities have zoomed since the rains. But as yet I've seen no new activities in the insects in burrowing twigs. I go out sweeping the trees, where of course, I find many insects. I showed Dr. Radspinner one of his avocado trees being severely defoliated by beetles, a scarabaeid, a nocturnal feeder. I'm not sure that its in the literature.

I'll ask Sr. Jacobo Zelaya to send you a radiogram to give you our arrival time.

We're fine. We do miss Bob Armour although we enjoy all others we have met here.

Best regards to you and Mrs. Popenoe.

Sincerely,

D. O. Wolfenbarger

DOW/aml

June 2, 1972.

Dr. Wilson Popenoe  
Antigua, Guatamala.

Dear Dr. and Mrs Popenoe:

Although we have not yet received our flight number nor our arrival time, we hope to take the morning flight out of here.

It seems that we will have to see Dr Saravia at an earlier date too. Could one ask if this earliness is an old Central American custom.

We are fine. We will see you soon.

Very Sincerely,

*Wolfie*

D. O. Wolfenbarger.

*Best wishes to you both*

June 2, 1972.

Mr. Antonio Najera Saravia,  
6 Av. 1-36, Zona 14  
Guatamala City, Guatamala. C' A'

Dear Mr Saravia:

I thank you so very much for your letter  
of May 25, 1972, B168 1, to me

Dr. and Mrs. Popenoe, according to present plans  
are expecting us on June 14, 1972. I feel sure they have plans  
for us, but I feel equally sure that one of the days before  
June 17, we might see you for a little while. I will send a cc  
of this letter to Dr. Popenoe and hope that they may work in  
time to see you. Although we will not depart from Guatamala  
until the 19th, I am hoping to see you even for a few minutes.  
It was kind for you to tell us of your possible departure  
by June 17th.

I would ask Dr. Castro about some insects. He  
might be able to see us on the 19th. I have not written to him;  
I fear I do not know him. Again thank you.

Very sincerely.

D. O. Wolfenbarger.



29220 SW 187 ave  
Homestead Fla - 33030



June 26, 1972

Dear friends-

We arrived safely back home last Friday afternoon at 4:30 P.M. - We really had quite a runaround before we reached Brownsville - at 7:00 P.M. we left for Houston arrived there at 12:00 midnight - by 1:00 A.M. we were ensconced in the Holiday Inn, slept until 6:00 A.M. + rushed back to the airport to catch an 8:00 A.M. plane for Brownsville. Otis called Dan + told them, we are here since they had not received our radio gram, they presumed we were in Matamoros. They went there + couldn't find us. They finally came to the Brownsville airport. There we were. We got <sup>to their</sup> home about 1:00. As we were eating lunch, the radio gram that I had sent the previous day, arrived - Anyway after the comedy-of-errors, we enjoyed the grand children -

We supposed we were to leave  
Brownsville on the 3:45 P.M. flight.  
About 8:00 A.M., I got the tickets  
out to check the flight number &  
found that we were booked for  
the 11:00<sup>A.M.</sup> o'clock flight - Since Otto  
& Dan had gone to the Lab, and  
we weren't packed, it took some fast  
stepping to make the morning flight -  
We only waited about 1/2 hours in  
Houston until we boarded a non-  
stop flight for Miami - The only  
time we had rough weather was  
when we were trying to drink  
our coffee - It sloshed here  
there & yonder - We only got a few  
swigs - After that, it was a beautiful flight.

We're still talking about our  
wonderful visit & trip with you folks -  
Vera Cowgil said, "How I envy you". She  
said to give you her regards -

We found everything in good order  
at home - Now we have to get ready  
to go again Saturday -

Thanks for everything and  
remember the latch-string is out  
whenever you are in this neck - of - the - wood.  
Love  
Gert & Otto Wolfentager



UNIVERSITY OF FLORIDA  
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

HOMESTEAD, FLORIDA 33030

AGRICULTURAL RESEARCH AND  
EDUCATION CENTER, HOMESTEAD  
18905 S.W. 280TH STREET  
TELEPHONE: 305-247-4624

June 26, 1972

Mr. R. P. Armour, Director  
Escuela Agricola Panamericana  
Apartado 93  
Tegucigalpa, Honduras C.A.

Dear Bob:

After a few days hosting of Dr. and Mrs. Popenoe we left C. A. and arrived in Texas for a couple of days then arrived in Homestead.

I do thank you and your faculty and staff for the grand cooperation we received from you. Maybe I can do something for you sometime?

I'll have specimens identified, do my report and send you a copy.

Best regards to all.

Sincerely,

D. O. WOLFENBARGER  
Entomologist

DOW:er

CC: Dr. Wilson Popenoe ✓  
Apartado 208  
Antigua, Guatemala

and I had a letter here  
from Desiyi (sp?).  
We arrived home safely Friday  
night. Again thanks for  
such a wonderful time  
W,

San Salvador ,7 de Junio de 1972.

Dr. Wilson Popenoe.

Residencia Popenoe, Antigua Guatemala.

Guatemala.

Dr. Wilson Popenoe:

Escribi recientemente a la Universidad de Florida para preguntarle sus estudios hechos sobre el insecto Trioza anceps (orden Homoptera, familia Pysilidae.), en su ausencia su hijo el sr. Hugh Popenoe me contesto y me dijo que le escribiera a ud. y al Dr. O.W. Wolfenbarger, para que me ayudaran al respecto.

Me interesa conocer: ciclo biologico, enemigos naturales, aspectos economicos, etc. tambien si me podria recomendar literatura al respecto.

Esperando su contestacion:

Atta.

Deysi Esther Cierra Anaya

Deysi Esther Cierra

Colonia Guatemala Calle "B" No 314 San Salvador,

El Salvador, C.A.

Antigua, Guatemala, 5 July 1972

Srta Deysi Esther Cierra Amaya  
Colonia Guatemala, Calle B, num. 314  
San Salvador.

Dear Deysi:

Replying to your letter of 7 June, Dr Wolfenbarger of Florida spent more than two months at Zamorano but found almost no infestations of Trioxa anceps in that region. Then he came to Antigua and spend several days with us. Trioxa is very abundant in certain parts of Guatemala. I have a 40-year-old tree of the Fuerte avocado here in my patio, which is severely attacked by Trioxa. I showed Dr Wolfenbarger many other trees in this region which are infested.

When the doctor returned to Florida about two weeks ago he left me the enclosed note to send you. He gave us a small quantity of Furanol 5-G which is being used experimentally by don Arturo Falla on infested trees at his Finca San Sebastian, not far from Antigua.

In general, we feel that this insect rarely does enough harm to warrant expensive control, but trees like my Fuerte which have been so badly attacked for many years must have suffered considerably. In spite of this, my 40 year old tree sometimes bears as many as 600 or 700 fruits in one crop, but Fuerte is an erratic bearer as we all know, and some years I get few fruits - this year about 200 which are commencing to ripen at this time.

Sincerely yours,

Digitized by Hunt Institute for Botanical Documentation,

Carnegie Mellon University, Pittsburgh, PA

Wilson Popenoe, Director Emeritus

Notes on TRIOZA ANCEPS, by D.O. Wolfenbarger, Univ. of Florida.

This is a gall-making insect. The galls are evident on the leaves of the trees. The layman seldom or never sees the insect. Very few studies have been made. I do not think we have this insect in Florida.

I believe the females lay eggs on the upper surfaces of newly-developing leaves. In a few days the eggs hatch into nymphs and begin to feed and produce leaf cells to proliferate and produce galls. Feeding continues until the nymphs become adult psyllids or members of the leaf-hopper group, then it appears that the adults emerge from the galls through the lower leaf surface, I suspect that 4 to 6 days are spent in the egg stage, 6 to 8 weeks as nymphs, then perhaps two weeks as adults.

I have no information regarding enemies of this insect. It must be of considerable economic importance at times, but no one has as yet shown the extent of the injury caused to the avocado tree. Brief reference to this insect is made by Dr Paul H. Berry in his book on the insects of El Salvador.

If you wish to attempt chemical control you might try AZODRIN spray, 1-1/2 teaspoonsfull per gallon of water. applied two or three times per year. I suggest spraying as new flushes of growth approach maturity and another three or four weeks later, then another six to eight weeks later. A similar set of applications may be required for each new flush of growth.

Here is another possible control: Use FURADAN 5-G (granular material) and use it in the ground around the drip of the tree. Dig a trench about 4 inches wide and deep under the drop. Apply Furadan 5-G at one ounce per inch diameter of the tree, then replace the soil in the trench. Rains or irrigation will carry to the roots which

Notes on TRIOZA ANCEPS, by D.O. Wolfenbarger, Univ. of Florida.

This is a gall-making insect. The galls are evident on the leaves of the trees. The layman seldom or never sees the insect. Very few studies have been made. I do not think we have this insect in Florida.

I believe the females lay eggs on the upper surfaces of newly-developing leaves. In a few days the eggs hatch into nymphs and begin to feed and produce leaf cells to proliferate and produce galls. Feeding continues until the nymphs become adult psyllids or members of the leaf-hopper group, then it appears that the adults emerge from the galls through the lower leaf surface, I suspect that 4 to 6 days are spent in the egg stage, 6 to 8 weeks as nymphs, then perhaps two weeks as adults.

I have no information regarding enemies of this insect. It must be of considerable economic importance at times, but no one has as yet shown the extent of the injury caused to the avocado tree. Brief reference to this insect is made by Dr Paul H. Berry in his book on the insects of El Salvador.

If you wish to attempt chemical control you might try AZODRIN spray, 1-1/2 teaspoonsful per gallon of water, applied two or three times per year. I suggest spraying as new flushes of growth approach maturity and another three or four weeks later, then another six to eight weeks later. A similar set of applications may be required for each new flush of growth.

Here is another possible control: Use FURADAN 5-G (granular material) and use it in the ground around the drip of the tree. Dig a trench about 4 inches wide and deep under the drop. Apply Furadan 5-G at one ounce per inch diameter of the tree, then replace the soil in the trench. Rains or irrigation will carry to the roots which

take it into the tree. Repeat the treatment in about three or four weeks.

We have had no experience with either of the methods of control suggested above, so they must be considered experimental.



take it into the tree. Repeat the treatment in about three or four weeks.

We have had no experience with either of the methods of control suggested above, so they must be considered experimental.

[June or July 1972.]

Dear Deysi Esther Cienra:

Dr. Popenoe has asked me to write to you about the Trioxa anceps. ~~This~~ This is a gall-making insect. The galls are evident to see on the leaves of the trees. The layman seldom or never sees the insect.

Very little is known about this insect. But few studies have been made. I do not think we have it in Florida. So, in my 3 months time in Honduras and Guatemala studying the avocado insects this species (I suppose we might term it "avocado leaf gall making insect", unless someone has a more pertinent name for it.) has been observed.

I believe (1) the females lay eggs in the upper leaf surfaces of newly developing leaves, (2) the eggs hatch <sup>into nymphs</sup> in a few days, begin to feed and stimulate leaf cells to proliferate and produce the galls, (3) feeding continues until the nymphs become adult psyllids or members of the leafhopper group, then it appears that the adult emerges from the gall on the lower leaf surface. I <sup>(but do not know)</sup> suspect, maybe 4-6 days are spent in the egg stage, 6-8 weeks as nymphs then maybe 2 weeks as adults.

If anyone knows the enemies of

This ~~is~~ insect, I have not learned of it. It ~~must be~~ <sup>of considerable</sup> economic importance but to my knowledge no one has yet shown the extent of injuries trees sustain.

Brief reference is given <sup>to this insect</sup> by Paul A. Berry, in a publication and recall from your Agricultural Division, on this insect which makes cascajo leaves assume distorted, ugly formations.

If you want to use a chemical control you might try Azodrin spray, 1/2 tsp. per gal. water applied <sup>or</sup> 2<sub>7</sub> maybe 3 times per year. I suggest an application as a new flush of growth approaches maturity and another about 3-4 weeks later, then another 6-8 weeks later. You may need another set of similar applications with the succeeding new flush of growth. You might get Furadan 5G (granular material) and put it around under the drip of the trees. Dig a trench about 4 inches wide and 4 inches deep under the drip. Apply Furadan 5G at 1 oz. per inch diameter of the tree in the trench, then <sup>replace</sup> ~~use~~ the removed soil in the trench. Rains carry the material to the roots which take it into the trees. Repeat the treatment in about 3-4

weeks.

I am unable to give you a complete <sup>list</sup> of  
bibliographical citations and suggest you  
~~might~~ ask your local librarian to help.

Very truly yours,  
W.C.C.

Perth **TRAVEL** **LODGE**

54 TERRACE RD.  
PERTH, W. AUST. 6000  
TELEPHONE: 23 3811

July 30, 1972.

Dear Bob + Mrs. Armour:

We have had some varied experiences this summer. Thanks in part to you.

We left Homestead about a month ago. We came through Dakar, Abidjan, Accra, Cotonou and Lagos to Addis Ababa to Nairobi. I'm not sure how those black people are going to get along. They're "messing" through now. Things got better as we came along. We have friends in Nelspruit, So. Africa. And here in Australia we feel quite at home.

We saw Africa's wild animals near Nairobi and in Kruger Park. We hope our films "turn out" all right. (Incidentally, although the films came back from our Honduras pictures, we never saw results from them) We saw Australia's kangaroo, emu, black swan and broala.

It's winter time here. It's been rain- and and hailing and it's cold - to us.

We are just about half way through our trip and are getting rather weary - This rainy cold day was a good excuse



TRAVELDGE AND CARAVILLA MOTELS

to stay in the hotel and sleep - So long as we don't get too many rainy days, we'll keep moving -

The orchids you took to Miami were doing fine when we were at home - I mailed a few more from Guatemala City. I haven't found any in Australia yet. I hope to get some when we get in the northern part of the country -

Hope Satorains is still whelley -

Sincerely -

Grant O. Wolfenbarger

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SERIALS ACQUISITION  
BY SOURCE NO.

1969  
HVAE/ODCE

We were supposed to have left here yesterday, but were told this morning that no planes would fly today - There seems to be some hope that the strike will be settled today - If we can go tomorrow or next day, we will probably skip Adelaide and continue our schedule - We seem to have luck on hitting strikes this year -

Perth **TRAVEL** **LODGE**

54 TERRACE RD.  
PERTH, W. AUSTR. 6000  
TELEPHONE: 23 3811

August 1, 1972.

Dear Dr. Peperose -

We traveled through Africa to this place where we're stranded for a day or so owing to a strike. Oil handlers, or, it seems, some minor industry is on strike and the air lines are stuck.

We were in a number of those black African countries where the blacks now have things. We are happy to have gotten out. We were in Dakar, Abidjan, Cotonou, Accra and Lagos. Then to Khartoum and Addis Ababa and Nairobi as things were a little better. At Nairobi we were guests of Pyrethrum Beer. We were shown three the plant, the fields and I learned much about it.

We were shown through game preserve. Saw millions (I guess) of flamingos. We saw lions, ostriches, zebra and many other animals. We went on and saw Victoria Falls, in South Africa and saw many other animals in Kruger Preserve. Saw their school and research workers at Nelspruit.

They have some crocoders etc there. But I didn't see any Anceps.



TRAVELDGE AND CARAVILLA MOTELS

Then to Cape Town, Table Mountain  
and to Durban after which we came  
to Perth.

I saw avocados in several markets.  
Some looked good and a few tasted  
good. But I saw no commercial grove.

It is winter time here in West  
Australia. But we will have more of it  
before we head toward Florida.

We were not home long enough for  
me to find out very much in the way of  
reports. I told you I believe that just  
off the faculty had been given forms to  
fill in about directors and even the provost?  
Well, some things I did hear suggested  
that something may come of it.

I simply had not the time to get my  
report all ready to type. I'll get it  
done.

We feel fine. Had colds in So. Africa  
for a couple of days. We may have lost  
a bit of weight the last month. We had  
gained a bit you may recall in Central  
America.

I wrote a bit to Bob. He is leaving  
a struggle I suspect at E.A.P. But I  
don't know of anyone whom I feel might do  
any better. He has my best wishes.

We are sure that you enjoyed your  
daughter and grandchildren. They provide  
life and action.

Best wishes for you and Mrs.  
Popenoe.

Sincerely,

The orchids we shipped from Antigua  
arrive home in good time, although  
somewhat battered. I hope they survive - Dick

Walter Popenoe



14 de Junio 150.00 quetzales

Quincena anterior	03.79
meneno y gas	05.00
15 de Junio luz	13.75
15 de Junio pago de Pancha	10.00
17 de " " " Albañil	12.00
" " " " " Carpintero	12.00
" " " " " Jonatan	12.00
" " " " " Ayudantes	12.00
" " " " " Pancha	12.00
ropa imparcial	02.00
sacada de basura	02.25
flete de ripio	07.50
2 quintales de cemento	02.80
una sierra	00.50
candelas	00.75
madeca para mueble	04.47
1 quintal de cemento	01.40
cal	12.00
gas	00.50
meneno y gas	05.00
flete de ripio	10.00
gasto	14.74
	<hr/>
	D. 155.75

total D. 155.75

200.00 quetzales el 23 de Junio

miene cuenta anterior	05.75
24 de Junio pago de Albañiles	12.00
" " " " " Carpintero	12.00
" " " " " Ayudantes	12.00
" " " " " Joratan	12.00
" " " " " Cancha	12.00
ropa imparcial	01.50
2 quintales de cemento	02.80
2 cargas de pino	01.20
menudo y gas	05.00
cemento	02.80
30 de Junio pago de Cancha	10.00
1 <sup>o</sup> de Julio " " Albañiles	12.00
" " " " " Carpintero	12.00
" " " " " Joratan	12.00
" " " " " Ayudantes	12.00
" " " " " Cancha	12.00
" " " " " union de Maria	37.50
ropa imparcial	01.75
gasto	16.52
	<hr/>
	Q 204.82

total 204,82

29220 SW 187 Ave  
Homestead Fla-33030

May 9, 1973.

Dear Alice -

I was so pleased to receive the notes from you three "gals". I intended to answer them much sooner. They caught me in the midst of house cleaning which included jaunting and a general stir-around. Those notes got put away so well that I, at present, can't find them.

We look back on our forage of last summer and wonder if they ever happened. I do have some plants to show for them. The orchids the mistake gave me are all thriving, even the ones we shipped from Antigua. They were rather badly battered in the mail, but they are growing but haven't blossomed yet. The plants that Mr. Amms brought over have blossomed. I'm delighted with them.

Perhaps you have received word about the new addition to Ron + Ann Kemp's family, Sophie Louise born March 8, 1973. I was so happy for them. I was very fond of Ann. Ron is coming through Miami on June 11. We do hope to get to see him.

We saw a program on TV the other night which showed Antigua + Chicki-Castananza. We were so thrilled. I shall never forget that market.

Our only trip planned this summer is to San José, Costa Rica to attend the Horticulture meeting July 15-22. I always enjoy these trips - We haven't had a conference on our room recreation as yet but they'll put us somewhere - That's the only Central American Country we haven't visited.

We're having very beautiful weather now, slightly dry but nothing to compare with Zamorana - The temperature is hovering in the low 80's F. Since we didn't have any freeze last winter, everything is in good shape - The country side is quite green even though we have to irrigate. Some of the avocados have a very light set this year, especially the Waldens (which most of our trees are).

While we're staying home most of the summer, we're looking forward to our "kids" coming home - After we return from Costa Rica, Bob (our youngest) and his wife will come for a couple of weeks. The middle of August our daughter + her family (including 3 grand children) will come. By that time the summer will be over and we'll be looking for hurricanes.

We hope you will remember to stop by if you ever come through Miami. A telephone call to 247-3356 would bring us running within the hour if you don't have time to contact us before.

Sincerely - Grace Wolfenbarger