

# The Philippine Journal of Agriculture

[Formerly THE PHILIPPINE AGRICULTURAL REVIEW]

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DEPARTMENT OF AGRICULTURE  
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MANILA  
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## PETER JANSEN WESTER

PETER JANSEN WESTER, a horticulturist of the Bureau of Plant Industry of the Department of Agriculture and Natural Resources, died August 18, 1931, at the Sternberg General Hospital, Manila, P. I. He was in only his fifty-fourth year, in the full tide of his valuable services to agriculture.

Not in robust health at the time, he went on his last scientific trip last March and April, a journey to Singapore, Java and Ceylon, undertaken during his vacation and partly at his own expense, to collect and secure horticultural specimens and economic plants that might be of greater economic usefulness to the Philippines. From the time of his return he daily grew weaker, self-overdriven in his zeal for his work, writing, for one thing, even from his bed, as a last contribution to tropical agriculture, a monograph on tropical flowers that was published in one of the Manila daily papers.

He was born in Arbra, Helsingland, Sweden, September 23, 1877. He received his early public education at home, graduating in 1896 at the Gefleborgs Lans Folkhogskola in Bollnas, Sweden.

At an early age he seemed to know his line. When he was still a small boy helping on his father's farm, he selected and developed a better grade of wheat than that generally grown in the countryside around and before he broke home ties, he had it grown by his father and the neighboring farmers.

His religious mother wanted him to be a Lutheran minister and urged him to study for a religious career. But the young Jansen thought otherwise and decided to follow his natural inclination. He sailed west for America and, following the practice of many immigrants, he adopted a new name, "Wester," to be annexed to his baptismal name, PETER JANSEN.

He was then 20 and at once went into practical horticultural work in New England and Florida. After six years of horticultural experience he was appointed in 1904 special agent of the Bureau of Plant Industry of the U. S. Department of Agriculture. For four years he worked in field experiments in the Subtropical Garden at Miami, Florida, at the end of which period he was placed in charge of the station. He was transferred in

to take charge of the culture of the tropical fruits. He went back to Florida in 1911 that he received an offer to work in the position of the noteworthy investigations he conducted in the field of tropical fruits.

His experience was along the line of improvement of the mango. "He assembled the first and the largest collection of hitherto had been made and has probably been the only single man to improve and popularize the propagation of this fruit. The large ananas are now in the hands of the Department of Agriculture and were largely due to his efforts. He was the first horticulturist to recognize the coming importance of mango for culinary purposes and aroused general interest throughout the frostless regions in the United States, recognizing the need of knowledge of vegetable propagation of the tropical fruits as being the key to their amelioration, much of his time at the University was engaged in experimental work of which many valuable results were obtained. His work along this line is the successful shield-budding method which can best be appreciated when it is known that practically all cacao estates are planted with the shield-budding method of propagating the cacao may be profitable on a large scale to replace the variable seedling and cutting and patch-budding methods of the past and thus standardize the product." (*Philippine Agricultural Life*, January 1913.)

When transferred to the agricultural division of the Bureau of Agriculture in 1911, he served the Philippine Government as agricultural adviser, except for two years, 1925 to 1927, when he was in the Insular service and returned to the Philippines in 1925. He had charge of the Linao (Bataan) from 1911 to 1917.

When transferred to the service of the Department of Agriculture in Sulu as agricultural advisor, there to remain until June 28, 1919, he returned to the Philippines in a similar capacity. It was during his stay in Sulu he compiled information and all available material for the publication of a much-read bulletin on the Philippines Archipelago: Their Natural Resources and Development.

February 16, 1922, he was designated horticulturist and devoted himself to varied horticultural work up to his retirement on account of ill health in 1925.

After two years' sojourn in the United States following his retirement, he left Florida for the Philippines, December 22, 1927, upon reinstatement in his former position in the old Bureau of Agriculture. He was then placed in charge of the mangosteen, lychee, tea and semitemperate fruit projects and foreign and domestic seed and plant introduction, distribution and exchange and assembling of data on Philippine food plants, which were eventually compiled in bulletin form in the "Food Plants of the Philippines."

As a prolific writer on tropical plants he rendered especially distinguished service to the Government, particularly as to economic fruits of the Tropics, his specialty, about which he made an intensive study of all materials available here as well as of specimens from other parts of the world. His practical experiments had great value and will have even more in the future.

While still in the Miami garden, he developed the atemoya, a cross between the ates and the cherimoya, which is producing better fruits than the ates, suitable for cultivation at lower altitudes than the habitat of the cherimoya. He brought with him the seeds of his favorite hybrid to the Philippines. He devoted much attention to the emphasis of the food value of the "adlay," Job's tears (*Croix lachryma jobi*), a tropical cereal which grows wild in Bukidnon, which, he believed, was one of the most potentially valuable of the cereal foods of the Islands as a supplement to rice.

Recently he was given charge of, and spent much of his time in, the replanting and beautification of the Malacañang Palace garden. Now and then his services were requested by the United States Army, and by others. He was engaged in embellishing the grounds of the Wack-Wack Club in Calocan, Rizal, shortly before his death.

He had a fervid interest in tropical plants—indeed in all plants—and was insistently working for the introduction of new and better varieties to improve and increase the farm flora of the Philippines. As a result of his efforts in this line the Bureau of Plant Industry now has a big collection of tropical fruit trees from different parts of the world, notably a number of citrus and avocado varieties. During his early service in the Bureau he wrote Bulletin No. 32 "Plant Propagation and Fruit

1909 to Washington to take charge of the culture of the avocado and other tropical fruits. He went back to Florida in 1910 and it was there that he received an offer to work in the Philippines, a recognition of the noteworthy investigations he had already made in the field of tropical fruits.

His Florida experience was along the line of improvement of tropical agriculture. "He assembled the first and the largest avocado collection that hitherto had been made and has probably done more than any single man to improve and popularize the methods of asexual propagation of this fruit. The large anona and guava collections now in the hands of the Department of Agriculture in Florida were largely due to his efforts. He was one of the first horticulturists to recognize the coming importance of the roselle for culinary purposes and aroused general interest in the plant throughout the frostless regions in the United States. Early recognizing the need of knowledge of vegetative methods of propagation of the tropical fruits as being the first step towards their amelioration, much of his time at the Subtropical Laboratory was engaged in experimental work of this character, and many valuable results were obtained. His most recent work along this line is the successful shield-budding of the cacao, which can best be appreciated when it is known that at present practically all cacao estates are planted with seedlings. This method of propagating the cacao may be profitably utilized on a large scale to replace the variable seedling and the cumbersome inarching and patch-budding methods of the West Indies plantations and thus standardize the product." (Extract from *Tropical Life*, January 1913.)

Joining the horticultural division of the Bureau of Agriculture on March 4, 1911, he served the Philippine Government continuously thereafter, except for two years, 1925 to 1927, when he retired on April 5, 1925, from the Insular service and returned to the United States. He had charge of the Lamao (Bataan) Experiment Station from 1911 to 1917.

June 17, 1917, he transferred to the service of the Department of Mindanao and Sulu as agricultural advisor, there to remain only two years, for on June 28, 1919, he returned to the Bureau of Agriculture in a similar capacity. It was during that service that he compiled information and all available scientific data for the publication of a much-read bulletin on "Mindanao and Sulu Archipelago: Their Natural Resources and Opportunities for Development."

in charge of the culture of the fruits. He went back to Florida in 1913 and received an offer to work in the Department of Agriculture on the noteworthy investigations he had made of tropical fruits.

Along the line of improvement of mangoes he assembled the first and the largest collection that had been made and has probably done more than any other man to improve and popularize the culture of this fruit. The large anona which is now in the hands of the Department of Agriculture is largely due to his efforts. He was the first to recognize the coming importance of mangoes for horticultural purposes and aroused general interest in the frostless regions in the United States by the need of knowledge of vegetation in the tropics. The mango is the tropical fruit as being the most important, much of his time at the Department was engaged in experimental work of which valuable results were obtained. His work on mangoes is the successful shield-budding method which will be appreciated when it is known that all cacao estates are planted with cuttings propagated by the shield-budding method which may be profitable to replace the variable seedling and patch-budding methods of the past. (See Bulletin No. 32, thus standardize the product." January 1913.)

He was appointed to the Division of the Bureau of Agriculture in the Philippine Government for two years, 1925 to 1927, when he returned from the Insular service and returned to the Department in charge of the Linao (Bataan) Division from 1917 to 1919.

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"Culture in the Tropics," popularizing the vegetative propagation of tropical fruit trees. No one can yet fully gauge the great service he has rendered to the people of the Islands.

The list of the last batch of foreign plants introduced from India and the East Indies recently by the late P. J. Wester follows:

*From Buitenzorg, Java:*

Gonocaryum falciforme (ornamental)	Borassus flabellifer
Tephrosia toxicaria	Tephrosia villosa
Tephrosia vogelli	Tephrosia vestita
Tephrosia pumila	Tephrosia noctiflora
Cassia occidentalis	Crotalaria juncea
Crotalaria anagyroides	Crotalaria usaramoensis
Crotalaria alata	Crotalaria valetonii
Crotalaria striata	Centrosema pubescens
Centrosema plumieri	Populu banana
Malaiola banana	Kauai banana
Puapualui banana	Iholana banana
Borax-Bora banana	Chinese banana
Brazilian banana	Largo banana
Maia maoli banana	Puhi banana
Moa banana	Green Red banana
Ice Cream banana	Lele banana
Iho-u banana	Mahoi banana
Lady Finger banana	Hamakua banana
Blue Field banana	Ellele banana
Apple banana	

*From Ceylon, India:*

Borassus flabellifer	Derris robusta
Aleuritis triloba	Indigofera endecaphylla
Coleococcus carolinensis	Erythrina lithosperma
Dumbaria heynei	Tricosanthes anguina
Papia speciosa	Attalea spinosa
Guazuma tormentosa	Albizzia faeata
Elacocarpus ganitros	Cassia grandis
Cassia didymobotryacea	Hevea spruceana
Terminalia belerica	Pentadesma butyracea
Faradaya splendida	Acacia decurrens
Pueraria phaseoloedes	Cassia pink uvid
Aleuritis montana	Phoenix uvid
Cassia auriculata	Psidium friedrichstahliaum
Albizzia chiyensis (stipulata)	Wild pineapple
Coconut 13	Coconut 22
Coconut 3R	Coconut 4G
Coconut 142	Coconut 826
Coconut 152	Coconut 671
Coconut 232	

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- Porassus flabellifer
- Cephaelis villosa
- Cephaelis vestita
- Cephaelis noctiflora
- Protalaria juncea
- Protalaria usaramoensis
- Protalaria valetonii
- Centrosema pubescens
- Populu banana
- Caualau banana
- Poliana banana
- Chinese banana
- Mango banana
- Luhi banana
- Green Red banana
- Ele banana
- Tahoi banana
- Amakua banana
- Illele banana

- Cassia robusta
- Indigofera endecaphylla
- Erythrina lithosperma
- Tricosanthes anguina
- Stylosanthes spinosa
- Albizzia falcata
- Cassia grandis
- Leucaena spruceana
- Centadesma butyracea
- Cassia decurrens
- Cassia pink uvid
- Phoenix uvid
- Psidium friedrichstahlium
- Wild pineapple
- Coconut 22
- Coconut 4G
- Coconut 826
- Coconut 671

- From Java:*  
 Aleurites triloba
- Origin unknown:*  
 Fore-tore  
 Flacourtia inermis  
 Wild banana  
 Alibangbang

- Indigofera herb.
- Bombax malabaricum
- Violet
- Schicostachyum brachycladum

The death of Mr. Wester called forth numerous expressions of sympathy and high appreciation from his colleagues and other representative men in and out of the Government—those who know him best.

J. Q. D.



PETER JANSEN WESTER



### A SOUND WORKMAN

The death of Mr. P. J. WESTER is a great loss to the horticulture world. On account of his knowledge of and interest in tropical plants he was an authority on the subject. His experience and many years of government service made him extremely valuable in the development of Philippine agriculture and his advice was sought not only by his department but also by other branches of the Government and even by various agricultural interests abroad.

DWIGHT F. DAVIS

*Governor-General of the Philippines*

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In the death of Mr. PETER J. WESTER, the Bureau of Plant Industry lost a very valuable employee. During his stay in the old Bureau of Agriculture, and in the new Bureau of Plant Industry, Mr. Wester made very far reaching contributions to Philippine horticulture. The author of a long list of bulletins, circulars and papers on tropical agriculture, among his outstanding publications are "The Food Plants of the Philippines," "Plant Propagation in the Tropics," and "Mindanao and Sulu: Their Natural Resources and Opportunities for Agricultural Development." Mr. Wester introduced into the Philippines a vast number of valuable tropical fruits and other plants. He was considered an authority in his line by all the distinguished workers and writers on the subject and was in correspondence with scores of them.

Desirous of securing more new economic plants for the Philippines, Mr. Wester recently made a trip to the Federated Malay States and Java, partly at his own expense. The heat, the care of the plants that he brought back to the Philippines, overtaxed his vitality and he was never well thereafter.

The personnel of the Bureau of Plant Industry deeply regret the irreparable loss of Mr. Wester, who was a friend and a companion to them.

MANUEL L. ROXAS

*Director of Plant Industry*

PETER J. WESTER was a lover of all growing things and they seemed to know it and did their best as in appreciation; an indefatigable worker; more than just a scientific man, too, he had not a little of the artist and the philosopher in his make-up.

His research work showed the seeker after Truth and his writings on tropical economic and ornamental plants are his indelible "footprints in the sands of Time."

S. YOUNGBERG

*Director of Animal Industry*

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When in the vicinity of a school of agriculture, Mr. WESTER always made it a point to visit the classes and offer his help. It made him happy to observe work being well done, to find teachers and students giving plants proper care, and to see boys being taught practical lessons in improving opportunities in farming. \* \* \* The finest orchards now found at our agricultural schools are largely the result of Mr. Wester's personal interest, advice, and aid.

JAMES A. WRIGHT

*Agricultural Supervisor, Bureau of Education.*

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Mr. PETER J. WESTER did his utmost, as a good workman who had nothing to be ashamed of, and who endeavored through his life of service to learn the truths of Nature, to make these truths known, and to present them to others for their guidance and for the enrichment and blessing of all humanity.

In the first place, Mr. Wester did his "utmost . . . as a good, sound workman." His achievements are no less than marvelous. The bulletins and circulars published under his name are legion. One cannot look through these publications without being impressed by the immensity of his work, the wide fields which he covered, the thoroughness of his investigations, the success of his many experiments in plant breeding and plant transplantation and the artistic, literary and intelligible presentation of his findings to the reading public. Take, for instance, Bulletin No. 38 about the Natural Resources and Opportunities for Development of the Mindanao and Sulu Archipelago. This is a monumental work, a revelation of the untold resources and possibilities of these great southern islands. \* \* \* No one can possibly estimate the great service he has rendered to the people

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in this part of the world. \* \* \* Indeed, these Philippine  
Islands can never be the same since Mr. Wester has lived and  
labored in these fields.

\* \* \*

The purpose of the remainder of his life was to do for the  
other islands what he had done for Mindanao and Sulu, and to-  
ward this end he had actually gathered much material.

A second ambition which burned in his bosom was to start a  
scientific expedition to gather together all the rare varieties of  
bread-fruit. He wrote to many about this.

\* \* \*

Mr. Wester gave his life to his work. He lived it, dreamed  
about it, gave himself to it utterly, until finally he gave his life  
for it. As truly as the soldier lays down his life on the battle-  
field, so did Mr. Wester lay down his life for the welfare of the  
people of these Islands, a martyr to the cause of bettering the  
condition of humanity.

\* \* \*

I would say just a word of a third characteristic, that is his  
thoroughness. There was nothing slipshod about his work.  
He had hatred of carelessness, although he was as patient as a  
father with those who served under him.

\* \* \*

Along with his thoroughness should be mentioned his literary  
style. It is rarely that a scientist possesses both artistic and  
literary taste, but Mr. Wester excelled in both. A glance through  
his works reveals the artist; his drawings and sketches are true  
to life. He was a lover of flowers and of all things beautiful.  
And so far as his scientific writings are concerned, not only are  
they great in substance, but they are beautiful as literature.

\* \* \*

Mr. Wester was also noted for a fine sense of loyalty and honor.  
Loyal to his friends, loyal to his work, loyal to the Bureau he  
was serving, loyal to the general welfare of the people whom  
he was helping, loyal to the country of his adoption, a lover of  
all that is best in our national life and heritage.

His deep sense of honor was evidenced every day of his life  
in numerous ways. He would not use a penny of the Bureau's  
allowances for himself. He would rather die a thousand deaths  
than to use anything furnished him except for his work. Such

a high sense of honor, so characteristic of his race, is a fine trait of citizenship which it would be well for our generation to emulate.

\* \* \*

In closing there is one other trait I wish to mention, and that is his devotion to his home and family. I have known scientists and scholars, including ministers, who were so devoted to their work that they would almost forget that they had families. Two of his boys and one girl have grown up to young manhood and womanhood of a splendid type who will make their contribution to the good and to the welfare of the United States of America, the country of his adoption, and the land which they have learned to love. Indeed, it was said by one of his most intimate friends and colleagues, that his children are earnest workers, who love and respect their parents, and that the contribution of Mr. and Mrs. Wester to the citizenship of our country is as great, if not greater, than his scientific contributions.

[Excerpts from the funeral sermon by  
Rev. JOHN P. JOCKINSEN]

#### RESOLUTION OF CONDOLENCE

WHEREAS, in his inscrutable wisdom, the Almighty has seen fit to call from this world to the life above, PETER J. WESTER, Horticulturist of this Bureau for a number of years;

WHEREAS, in his association with the officials and employees of the Bureau of Plant Industry, he was a sympathetic co-worker, a kind associate and an indefatigable worker; and

WHEREAS, due to his efforts and perseverance during his long years in the Government service, he did a vast deal to improve and contribute to the economic flora of the Philippine Islands; therefore,

*Be it resolved*, That we, the officials of the Bureau of Plant Industry express, as we hereby do, express to the widow and family of the late PETER J. WESTER our heartfelt sympathy in their bereavement.

*Be it further resolved*, That copies of this resolution be furnished Mrs. P. J. Wester and the press.

MANILA, August 22, 1931

(Signed by the Director and Staff of  
the Bureau of Plant Industry)

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Mr. West  
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P. J. WESTER BIBLIOGRAPHY<sup>1</sup>

BUREAU OF AGRICULTURE (NOW OF PLANT INDUSTRY) BULLETINS

- Bulletin No. 18—The Mango. (English.) Rev. ed. 1920.  
Bulletin No. 27—Citriculture in the Philippines. (English.) 1913.  
Bulletin No. 32—Plant Propagation and Fruit Culture in the Tropics.  
(English and Spanish.) Rev. ed. 1920.  
Bulletin No. 35—The Coconut Palm: Its Culture and Uses. (English.)  
1920.  
Bulletin No. 36—A Descriptive List of Mango Varieties in India. (Eng-  
lish.) 1922.  
Bulletin No. 38—Mindanao and the Sulu Archipelago: Their Natural Re-  
sources and Opportunities for Development. (English.)  
Rev. ed. 1928.  
Bulletin No. 39—The Food Plants of the Philippines. (English.) 1924.

BUREAU OF AGRICULTURE (NOW OF PLANT INDUSTRY) CIRCULARS

- Circular No. 6—Cultural Directions for Papaya. (English.) 1911.  
Circular No. 9—Directions for Planting Vegetables and Flowers. (Eng-  
lish and Spanish.) 1911.  
Circular No. 12—Plant Pests and Remedies Therefor. (English and  
Spanish.) 1911.  
Circular No. 15—The Mango. (English and Spanish.) Rev. ed. 1923.  
Circular No. 16—Pineapple Culture. (English and Spanish.) Rev. ed.  
1923.  
Circular No. 24—Citrus Growing in the Philippines. (English and Spa-  
nish.) 1913.  
Circular No. 25—Cultural Directions for Vegetables and Flowers. (Eng-  
lish and Spanish.) 1913.  
Circular No. 28—Propagation of the Seedless Breadfruit. (English and  
Spanish.) 1914.  
Circular No. 30—Cultural Directions for the Papaya. (English and Spa-  
nish.) 1914.  
Circular No. 38—Coconut Culture. (English and Spanish.) Rev. ed.  
1925.  
Circular No. 44—The Pili Nut. (English and Spanish.) 1922.  
Circular No. 68—The Camote and Cassava. (English and Spanish.)  
1919.  
Circular No. 90—Rubber Culture. (English and Spanish.) 1920.  
Circular No. 91—Coffee Culture. (English and Spanish.) 1920.  
Circular No. 100—Cultural Directions for the Panama Hat Palm. (Eng-  
lish and Spanish.) 1924.  
Circular No. 119—Cultural Directions for Field Crops and Vegetables.  
(English.) 1921.

<sup>1</sup> Mr. Wester also wrote many articles for various agricultural journal  
abroad.

- Circular No. 120—The Cultivation and Uses of the Roselle. (English and Spanish.) 1921.
- Circular No. 121—The Preservation of Tropical Fruits. (English and Spanish.) 1921.
- Circular No. 122—The Breadfruit. (English and Spanish.) 1921.
- Circular No. 123—The Preparation and Packing of Seeds and Scions of Trees and Shrubs in the Tropics. (English and Spanish.) 1921.
- Circular No. 127—Napier Grass and Its Culture. (English and Spanish.) 1922.
- Circular No. 128—Adlay: Its Culture and Uses. (English and Spanish.) Rev. ed. 1925.
- Circular No. 129—Adlay Recipes. (English and Spanish.) 1922.
- Circular No. 131—Directions for Shield Budding. (English and Spanish.) 1922.
- Circular No. 132—Shade Trees for Streets and Roads. (English and Spanish.) 1922.
- Circular No. 146—Directions for Saving and Keeping Vegetable and Other Seeds. (English.) 1924.
- Circular No. 149—Manufacture of Copra in the Philippines. (English.) 1924.
- Circular No. 152—The Chayote. (English.) 1924.
- Circular No. 154—The Avocado and Its Propagation. (English and Spanish.) 1924.

ARTICLES IN THE PHILIPPINE AGRICULTURAL REVIEW (NOW PHILIPPINE JOURNAL OF AGRICULTURE)

- Mango Pests in Cavite and Rizal. pp. 312-314, No. 6, Vol. IV, June, 1911.
- Tropical Fruits in the Visayas. pp. 545-554, No. 10, Vol. IV, October, 1911.
- The Propagation of Avocado. pp. 599-605, No. 11, Vol. IV, November, 1911.
- Another Mango Pest in the Philippines. pp. 649-652, No. 12, Vol. IV, December, 1911.
- The Embryony of the Mango. pp. 80-82, No. 2, Vol. V, February, 1912.
- Roselle, Its Cultivation and Uses. pp. 123-132, No. 3, Vol. V, March, 1912.
- Cover and Secondary Crops in the Coconut Plantations. pp. 270-272, No. 5, Vol. V, May, 1912.
- Anonaceous Fruits and their Propagation. pp. 298-304, No. 6, Vol. V, June, 1912.
- The Present Status of Horticulture in the Philippines and Its Outlook for the Future. pp. 353-364, No. 7, Vol. V, July, 1912.
- Annotated List of Philippine Vegetables. pp. 371-374, No. 7, Vol. V, July, 1912.
- Recent Plant Introduction into the Philippines. pp. 391-398, No. 7, Vol. V, July, 1912.
- Possible Future Plant Introductions. pp. 405-406, No. 7, Vol. V, July, 1912.
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- A Prize for Adlay Production. pp. 273-274, No. 3, Vol. XIX, Third Quarter, 1926.
- Observations on Agriculture in the Philippines, Vol. XXII, p. 205, 1929.

## ARTICLES IN OTHER PERIODICALS

- Landscape Gardening in Manila. Philippine Magazine 27(14): 218-219, 254, 256 and 258. 1930.
- Book reviews. Philippine Magazine 28(4): 161. Manila. 1931.
- The Patio of Malacañang. Philippine Magazine 28(1): 28-29. Manila. 1931.
- Tropical Landscape Architecture. Am. Chamber of Com. Journal 9(12): 8-12, 13, 25. 1929.
- Useful Plants in Foreign Lands. Am. Chamber of Com. Journal 9(17): 8-9; (9):9-13, (11):14-15. 1929.
- Orchids: Their Culture in the Tropics. American Chamber of Commerce Journal, 10:6-7. 1930.
- Shade Trees for the Philippines. American Chamber of Commerce Journal, 10(4):8-9, (5)6-7. 1930.
- Analysis and Food Value of Some Unusual Philippine Fruits. FRANCISCO, ANACLETO D. and P. J. WESTER. 1930. Phil. Journal of Science, 43:655-663. Manila.
- Composition of Some Philippine Fruits, Vegetables, and Forage Plants. VALENZUELA, ABELARDO and P. J. WESTER. 1930. Phil. Journal of Science, 41:85-102. Manila.