is straight and the plumule and radicle lie in its axis. In the *Archontophoenix*-type the whole embryo is curved, whilst in the *Washingtonia*-type, although the embryo is straight, the plumule and radicle are situated obliquely to its long axis.

A fourth type of germination in palms has been suggested for *Nypa* and *Phytelephas* in which it is said that it is the radicle which forms the suctorial organ. Reports are conflicting and observations need confirming. Gatin (1) indicates that *Phytelephas* is not different from *Phoenix*.

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Gregório Gregorievich Bondar, 1881 - 1959

Some people are privileged to know palms intimately. Such a person was Dr. Gregório Bondar of Brazil who died in February 1959 leaving us a legacy of his published papers on palms of Brazil written from first-hand knowledge of them. The following account of his life is abbreviated from a fuller autobiographical sketch in Portuguese to be found in *Revista de Entomologia* 14: 313-319, 1943, augmented by information provided by Dr. Bondar's daughter, Dona Jacy Bondar Nogueira and Dr. Klare S. Markley. Dona Jacy is a botanist in her own right, translator of the above account, and author of *Glossário de Palmeiras Oleaginosas e Ceríferas* and *Glossario de Plantas Oleaginosas e Ceríferas. II. Euforbiaceas.* Dr. Markley is a horticulture specialist with the United States Operations Mission to Brazil and was associated with Dr. Bondar in his work.

Gregório Gregorievich Bondar was born on November 18, 1881, in the village of Malaia, Buromca, district of Zolotonocha, Department of Poltava, Russia. There he attended primary school until 1892. His family emigrated in 1894 to the Department of Jenisseisk in the center of Siberia where Dr. Bondar farmed and served as a notary in several places before entering the Seminary of Kransnojarsk from which he graduated in June, 1902. For three years thereafter he taught in primary schools in Siberia until events of the Russo-Japanese war and the following political upheaval forced him to leave Russia for Manchuria where he remained until 1908 under another name.

In June, 1908, Dr. Bondar moved to France where he attended the Agricultural Institute of Nancy University under his own name, graduating as an agronomist in 1910. A fugitive still from political charges in Russia, he went to Brazil in that same year and was naturalized in 1913. During the years from 1910 to the end of 1915, he worked at the Instituto Agronomico de Campinas and taught at the Escola Superior de Agricultura de Piracicaba as a professor of farm zoology and entomology.

Early in 1916, Dr. Bondar returned to Russia and joined the armed forces. Near the end of the year he was arrested for his political crime of 1905, sent to Siberia in January, 1917, and then freed after the revolution of February 17, 1917. Thereafter he held political and

scientific offices in Siberia until again arrested and condemned to death on December 24, 1919. The sentence was not carried out nor was a later one, and eventually he escaped to Japan by way of Mongolia, Manchuria, and Korea. From Japan, Dr. Bondar returned to Brazil where, from 1921 until 1932, he worked as an entomologist and phytopathologist for the state of Bahia. After experience as chief of the Agriculture Technical Department and director of the Experiment Station at Agua Preta in the Cacao Institute of Bahia, he went to the Instituto Central de Fomento da Bahia in 1938 as a technical consultant.

Dr. Bondar retired from the Agricultural Secretariat in 1951. In 1933, he was awarded the sum of 100,000.00 cruzeiros by the National Congress for his "experimental studies of native economic plants, especially gummiferous plants, technically advancing the preparation and growing of new products for export, and for his outstanding botanical and entomological studies and discoveries carried out in this country which have attained an international scope." From 1956 until the time of his death, Dr. Bondar was a part-time consultant with the Escritório Técnico de Agricultura Brasil-Estados Unidos and in 1957 resumed activities with the Ministério da Agricultura in Bahia. With the former agency, he carried out independently or together with Dr. Klare S. Markley, a survey of the distribution of the babaçu palm *(Orbignya speciosa)* in practically all areas of Brazil in which this palm had been reported to occur. It was while returning from Mato Grosso and the Territory of Rondonia where he and Dr. Markley had been studying the distribution of this palm that Dr. Bondar suffered a cerebral hemorrhage and died in a São Paulo Hospital on February 20, 1959.

Many of Dr. Bondar's numerous publications concerned insects, agriculture, or economic botany. Others were of ethnographical nature, dealing with Siberia. Those which dealt with the palms are listed below. His collection of insects, part of which is now at the American Museum of Natural History in New York, was extensive. He was elected a member of the Russian Entomological Society in Petrograd (now Leningrad) in 1916 and of the Centro de Ciências, Letras e Artes de Campinas, São Paulo, in 1911. He was also a member of the Sociedade de Entomologia de Argentina and research associate in insects at the Chicago Natural History Museum.

These notes can give but a brief review of an exciting and productive life which is well summed up by Dr. Markley: "In Dr. Bondar's death, the world and especially Brazil, lost an outstanding natural scientist; one of that dwindling group of men who have made many contributions to mankind under exceedingly trying and difficult circumstances; men to whom physical discomfort and even extreme hardship, hazards of health and risk of life, and lack of adequate monetary reward meant little and scientific achievement meant everything."

Publications Relating to Palms

1. A Exploração da Piassava no Estado da Bahia (Exploration for Piassava in the State of Bahia), Bahia, 1926.
2. O Licuriseiro (The Licuri Palm—*Cocos coronata*), *Instituto Central de Fomento Economico da Bahia, Boletim* 2: 1-18. 1938.
3. Palmeiras na Bahia do Genero Cocos. (Palms of the Genus Cocos in Bahia) *op. cit.* 4: 1-19. 1939.
4. Importancia Economica das Pal-

meiras Nativas do Genero Cocos nas Zonas Seccas do Interior Bahiano (Economic Importance of Native Palms of the Genus Cocos in the Dry Regions of Interior Bahia). *op. cit.* 5: 1-16. 1939.

5. Palmeiras da Bahia (Palms of Bahia). *op. cit.* 6: 1-22. 1939.

6. O Coqueiro no Brasil (The Coconut in Brasil). *op. cit.* 7: 1-100. 1939.

7. Insetos Nocivos e Molestias do Coqueiro no Brasil (Injurious Insects and Diseases of the Coconut Palm in Brasil). *op. cit.* 8: 1-160. 1940.

8. Palmeiras do Genero Cocos e Descrição de Duas Especies Novas (Palms of the Genus *Cocos* and Description of Two New Species). *op. cit.* 9: 1-53. 1941.

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16. *A Cultura do Coqueiro (Cocos nucifera) no Brasil* (The Cultivation of Coconut in Brasil). 74 pp. Bahia. 1955.

17. O Dendezeiro (African Oil Palm). São Paulo. 1956.

18. Novo Gênero e Nova Espécie de Palmeiras da Tribo Attaleini (A New Genus and Species of Palm of the Tribe Attaleinae). *Arquivos do Jardim Botanico* 15: 49-55. 1957.

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Bondar, G. Novo Gênero e Nova Espécie de Palmeiras da Tribo Attaleini. *Arquivos do Jardim Botanico do Rio de Janeiro* 15: 49-55. 1957.

This last article by Dr. Bondar describes a new genus, *Markleya*, named in honor of Dr. Klare S. Markley who has been studying economic aspects of palms in South America. The epithet of the single species, *Markleya Dahlgreniana*, honors Dr. B. E. Dahlgren, author of *Index of American Palms*. *Markleya* is closely related to *Orbignya* and is thought possibly to represent a hybrid between *Maximiliana Martiana* (*M. regia*) and *Orbignya speciosa*. Both the latter grow with the newly described palm in the Municipio of Bragança, State of Pará, Brazil. Latin and Portuguese descriptions are provided and photographs illustrate staminate flowers and fruits.

H. E. Moore, Jr.