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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.

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# LE QUINQUINA

PAR

E. H. J. STOFFELS

Ingenieur Agronome A. I. G.  
Directeur de la Station expérimentale de PINÈAC à Mulungu.

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**CINCHONA GROWING  
IN  
GUATEMALA**

**JANUARY 1941**



## THE CINCHONA (QUININE) INDUSTRY IN JAVA.

By W. N. SANDS.

IN January of the present year, the writer, acting under instructions received from the Acting Director of Agriculture, F.M.S. & S.S., visited the chief districts in Java where Cinchona is successfully cultivated in order to obtain as much information as possible concerning the industry as carried on there. The following account is the outcome of that mission.

The history of the introduction into Java from the South American Andes of the different species of Cinchona which produce the barks used in the preparation of quinine, and allied alkaloids, is fairly generally known and need not be referred to in detail here. Briefly, it may be stated that the first attempts at Cinchona cultivation in Java were made in 1852, but these were not a commercial success because the species grown gave such a low yield of alkaloids. In 1865, however, the industry was established on a firm basis following the introduction of seed of a variety of Cinchona very rich in quinine, which was secured in South America by an Englishman named Charles Ledger and known under the name of *C. Calisaya*, var: *Ledgeriana* (Howard), or *C. Ledgeriana* (Moens).

The Ledger seed sown in Java yielded 20,000 plants, and it is mainly from these that the remarkable industry has been built up. It may be of interest to add that several survivors of the original Ledger trees are still to be seen in the Government Cinchona Plantations at Tjinjireon in the Pangalengan district.

As Cinchona cultivation was established in Java as far back as 1865, planters there have available upwards of 50 years of accumulated scientific results and practical experience to guide them in their efforts.

The production of Cinchona bark has become a highly specialized undertaking and the large measure of success which has been attained has led to the capture by Java of the world's market for quinine.

This phenomenal success is due chiefly to:—

- (a) Excellent agricultural methods.
- (b) Suitable soil, elevation, temperature and rainfall.
- (c) A plentiful supply of cheap labour.
- (d) Careful selection and propagation of desirable strains of Cinchona, more particularly *C. Ledgeriana*.
- (e) The regulation in recent years of market prices for the bark by agreements between growers and manufacturers.
- (f) The valuable experimental and other work, extending over many years, of the Government Cinchona Plantations.

MEMO

To  
FromDate  
Answering }  
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Subject

LE QUINQUINA

by

E. H. J. Stoffels

Publications de L'Institut National pour L'Etude Agronomique du  
Congo Belge Série Technique No. 24. 1939

## Foreword

The possibilities of quinine culture in the Belgian Congo and the principal facts with reference to its commercial exploitation have recently been set forth by Inspector H. Ringoet.

Our study was written with the purpose of serving as a guide to planters. It is largely derived from articles concerning this crop appearing in foreign literature. Much of the data is based on personal observations both in the Dutch East Indies and in the Belgian Congo.

The majority of the Cinchona plantations in our colony have been quite recently established; that is why we have described in greater detail certain of the cultural practices that likewise apply to other crops of the mountain regions.

## Chapter 1. Cinchona species and their environment.

The home of the Cinchonas is on the eastern slopes of the Andes and extends from Lat. 10° North to Lat. 22° South, and has as its center Loja (loja, Ecuador?). These trees very rarely establish uniform populations but on the contrary are found as scattered individuals in the forest. Several species have been