

**REPORT NO. 7, U. S.  
DEPARTMENT OF AGRICULTURE;  
A REPORT ON THE CULTIVATION  
OF RAMIE IN THE UNITED STATES**

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**CHAS. RICHARDS DODGE**

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U. S. DEPARTMENT OF AGRICULTURE.

FIBER INVESTIGATIONS.

A REPORT

ON

THE CULTIVATION OF RAMIE

IN

THE UNITED STATES,

WITH

STATEMENTS CONCERNING THE PRACTICE IN FOREIGN COUNTRIES,  
COST OF CULTIVATION AND PERCENTAGES OF YIELD, THE  
MACHINE QUESTION, AND PREPARATION OF  
THE FIBER FOR MANUFACTURE.

BY

CHAS. RICHARDS DODGE,  
SPECIAL AGENT.



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.

1895.

LETTER OF SUBMITTAL.

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UNITED STATES DEPARTMENT OF AGRICULTURE,  
OFFICE OF FIBER INVESTIGATIONS,  
*Washington, D. C., April 1, 1895.*

SIR: I have the honor to submit herewith the manuscript for Report No. 7 of the Fiber Investigations series, on the cultivation of ramie in the United States. The publication of this report is important at this time in view of the fact that there is great inquiry for reliable information regarding this promising textile plant, and also because the literature of the subject is meager as it relates to the practical considerations of culture, cost of establishing plantations, and possible yields of fiber. The Department publications on this subject were issued several years ago, since which time the situation has changed materially, and on many points the existing literature is now behind the times. In the present report, therefore, the aim has been to tell the whole story of ramie, the discouraging features of the industry as well as its possibilities, in order that farmers desiring to take up its culture may do so understandingly.

I am, respectfully,

CHAS. RICHARDS DODGE,  
*Special Agent, in Charge of Fiber Investigations.*

HON. J. STEELING MORTON,  
*Secretary.*

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# CULTIVATION OF RAMIE IN THE UNITED STATES.

## INTRODUCTORY.

A little over four years ago Report No. 1 of the Fiber Investigations series was given to the public. In that document appeared two reports upon the subject of ramie, the first relating to the international trials of ramie machines held in Paris during September, 1889, and the second to a presentation of the status of the ramie question at that time. In the former report an account was given of the official trials of 1889, with tables showing the capacity of the different machines themselves. In the second chapter the entire situation was reviewed, with full statements as to the obstacles and difficulties which had beset the industry and prevented the culture of ramie from becoming remunerative to the agriculturist in this and other countries. A great deal of the testimony presented was discouraging, yet it was shown that something definite had been accomplished; that progress was being made each year, and that ultimate success seemed possible, if not probable. A year later Report No. 2 was issued by this Department, immediately following the extensive trials in Mexico, though at that time, while some ground had been gained in the world's experience, no great progress of a practical nature could be recorded.

In the past two years more substantial progress has been made in several directions. While it can not be stated authoritatively that the machine problem has been solved, an advance in machine construction may be recorded, and several promising new machines have made their appearance. The manufacturing side of the industry has received a considerable impetus, both at home and abroad, and a renewed interest in culture has been awakened, especially in the United States. All this has resulted in a large correspondence with the Department, the special inquiries relating to every phase of the industry from soil selection and culture to the machine question and manufacture. It is important, therefore, to bring the story down to date, to show wherein the situation has been changed, and to supplement the brief statements regarding cultivation and the purely agricultural phases of the industry, as presented in former reports, with a full account of the requirements of successful culture, as well as an outline of the practice involved.

In carrying out this scheme it is the intention to deal only with facts, and to consider the various phases of the industry from the standpoint of practical result; in other words, to tell the truth about ramie, so far as recorded experience will aid us or so far as truth may be sifted from the chaos of misstatement and misinformation that has involved a large part of its literature in our own country, especially the newspaper literature of the past few years.

For the sake of comparison, statements relating to the practice and experience of foreign countries are included, though in no instance without a reference to the authority, in order that the account may be verified if desired. The results of experience in the United States have been presented only after careful examination, and statements of individuals given with full credit; the world's literature of the subject has been consulted, and the correspondents of the Department, in two hemispheres, have aided in the work.

In all the statements regarding the ramie interest the Department has taken a conservative position, appreciating the great harm that is liable to be done any new industry by claiming for it results yet to be proven by practical experience. On some points authoritative statements concerning the ramie interest can not be made until a commercial experiment has been carried out, under expert direction, upon a considerable area, and running over a series of years; and then only when the fiber produced has been carefully tested in manufacture. In this connection the writer desires to express his conviction that the appropriation of public funds for any experiments under the direction of professional promoters is to be deprecated, experience proving that the mere organizer of stock companies is lacking in the practical knowledge requisite for success.

#### RECENT HISTORY OF THE RAMIE INDUSTRY.

The active interest in rhea began in 1869, when a reward of £5,000 was offered by the Government of India for the best machine with which to decorticate the green stalks. The first exhibition and trial of machines took place in 1872, resulting in utter failure. The reward was again offered, and in 1879 a second official trial was held, at which ten machines competed, though none filled the requirements, and subsequently the offer was withdrawn. The immediate result was to stimulate invention in many countries, and from 1869 to the present time inventors have been interesting in their efforts to produce a successful machine. The commercial history of ramie, therefore, does not extend further back than 1869.

The first records of Chinese shipments of fiber to European markets show that in 1872 200 or 300 tons of the fiber were sent to London, valued at £80 per ton, or about \$400. India also sent small shipments, but there was a light demand and prices fell to £30 to £40 per ton for Chinese and £19 to £30 for the India product. In a letter from

Messrs. Ide & Christie, the London fiber brokers, discussing the point of demand and supply, received in 1890, it was stated that ramie ribbons had at no time been shipped to Europe from any country in large quantity. Three hundred or 400 tons during the preceding five years would represent the maximum quantity brought from China, while India and other producing countries had sent little more than sample lots and trial parcels. The largest lot of ramie ever received at any one time was in October, 1888, when 120 to 130 tons of ribbons were offered in the London market. There was nothing like competition for it, and it was sold for £8 to £9, less than half what it cost in China.

Experiments in manufacture in England date back to the sixties, and as early as 1866 the Glover Museum of the Department, which occupied two rooms in the basement of the Patent Office, possessed a series of beautiful ramie fibers and fabrics of English manufacture. There were difficulties, however, in the way of preparing the fiber and in adapting machinery for spinning it that made these processes too costly, and after fortunes had been wasted the effort was abandoned.

Ramie seed is said by Favier to have been first introduced into France in 1836, and in 1844 plants were brought from China by the surgeon of the war ship *Favorite* which were grown in the acclimating gardens. While one writer claims that the plant was first brought to the gardens of Europe in 1733, Favier states that Dr. Fras cultivated the plant in the botanical gardens of Munich in 1850, and that it was grown in Belgium in 1860.

Our own introduction dates back to 1855, but the records seem to show that it did not obtain a foothold in Mexico until 1867, the year, by the way, in which the first American ramie machine was brought to public attention. It is interesting to note that the first shipment of plants into France, in considerable number, was from America, 10,000 plants having been imported for distribution in France and Algiers in 1868. From this time, or a little later, its spread to many other countries was rapid, until now there is hardly a country on the earth where it will grow that has not experimented with cultivation and with the machine question.

The first French official trials took place in 1888, followed by the trials of 1889, in Paris, at which the writer was present, and which are recorded in Report No. 1 of the Fiber Investigations series. Another trial was held in 1891, and in the same year the first official trials in America took place, in the State of Vera Cruz, in Mexico, followed the next year by the first official trials of American machines in the United States; these being followed by the trials of 1894, just closed.

Of the history of the experiments in cultivation in the United States it is not necessary to speak, as the principal attempts at cultivation are recorded or referred to in the reports already published; nor is it necessary to give more than a passing mention to the machine question in America, historically considered.