

**USEFUL PLANTS OF THE FUTURE;  
SOME OF THE POSSIBILITIES OF  
ECONOMIC BOTANY, AMERICAN  
JOURNAL OF SCIENCE, VOL. XLII,  
OCTOBER, 1891, PP. 271-303**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649175413

Useful plants of the future; some of the possibilities of economic botany, American journal of science, Vol. XLII, October, 1891, pp. 271-303 by George Lincoln Goodale

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**GEORGE LINCOLN GOODALE**

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[FROM THE AMERICAN JOURNAL OF SCIENCE, VOL. XLII, OCTOBER, 1891.]

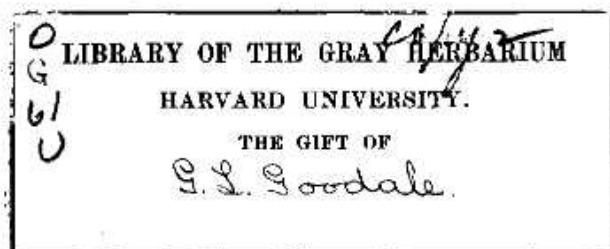
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By GEORGE LINCOLN GOODALE, Cambridge, Mass.

1891.





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USEFUL PLANTS OF THE FUTURE.

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POSSIBILITIES OF ECONOMIC BOTANY.

*With Compliments of the Author.*

Dr. Goodale ventures to ask his correspondents to send him any facts of interest regarding the local or exceptional uses of any plants, especially of those wild plants which have not yet found a place in the economic lists.

Fisher Professor of Natural History in Harvard University, Cambridge, Mass.

NEW HAVEN:

TUTTLE, MOREHOUSE & TAYLOR, PRINTERS,

1891.

*Botanic Garden*



[FROM THE AMERICAN JOURNAL OF SCIENCE, VOL. XLII, OCTOBER, 1891.]

ART. XXVII.—*Some of the Possibilities of Economic Botany;*  
by GEORGE LINCOLN GOODALE.

[Presidential address delivered before the American Association for the Advancement of Science, at Washington, August, 1891.]

OUR Association demands of its president, on his retirement from office, some account of matters connected with the department of science in which he is engaged.

But you will naturally expect that, before I enter upon the discharge of this duty, I should present a report respecting the mission with which you entrusted me last year. You desired me to attend the annual meeting of the Australasian Association for the Advancement of Science, and express your good wishes for its success. Compliance with your request did not necessitate any material change in plans formed long ago to visit the South Seas; some of the dates and the sequence of places had to be modified; otherwise the early plans were fully carried out.

I can assure you that it seemed very strange to reverse the seasons, and find mid-summer in January. But in the meeting with our brethren of the southern hemisphere, nothing else was reversed. The official welcome to your representative was as cordial, and the response by the members was as kindly as that which the people in the northern hemisphere would give to any fellow-worker coming from beyond the sea.

The meeting to which I was commissioned was held in January last in the Cathedral city of Christchurch, New Zealand, the seat of Canterbury College.

Considering the distance between the other colonies and New Zealand, the meeting was well attended. From Hobart, Tasmania, to the southern harbor, known as the Bluff, in New Zealand, the sea voyage is only a little short of one thousand miles of rough water. From Sydney in New South Wales to Auckland, New Zealand, it is over twelve hundred miles. If, therefore, one journeys from Adelaide in South Australia, to Christchurch, New Zealand, where the meeting was held he travels by land and by sea over two thousand miles. From Brisbane in Queensland, it is somewhat farther. Although certain concessions are made to the members of the Association, the fares by rail and by steamship are high, so that a journey from any one of the seats of learning in Australia proper to New Zealand is formidable on account of its cost. It is remarkable that so large a number of members should have met together under such circumstances, and it speaks well for the great strength and vigor of the Association.

The Australasian Association is modelled rather more closely after the British Association than is our own. The president delivers his address upon his inauguration. There are no general business meetings, but all the details are attended to by an executive committee answering to our council; none except the members and associates are invited to attend even the sectional meetings and there are some other differences between the three associations. The secretaries stated to me their conviction that their organization and methods are better adapted to their surroundings than ours would be, and all of their arguments seemed cogent. Although the Association has been in existence but three years, it has accomplished great good. It has brought together workers in different fields for conference and mutual benefit; it has diminished misunderstandings, and has strengthened friendships. In short it is doing the same kind of good work that we believe ours is now doing, and in much the same way.

Your message was delivered at the general evening session immediately before the induction of the new officers. The retiring president, Baron von Mueller, and the incoming president Sir James Hector, in welcoming your representative, expressed their pleasure that you should have seen fit to send personal greetings.

In replying to their welcome, I endeavored to convey your felicitations upon the pronounced success of the Association, and your best wishes for a prosperous future. In your name, I extended a cordial invitation to the members to gratify us by their presence at some of our annual meetings, and I have good reason to believe that this invitation will be accepted. I know it will be most thoroughly and hospitably honored by us.

On the morning of the session to which I refer, we received in the daily papers, a cable telegram relative to the Bering Sea difficulties (which were then in an acute stage). In your stead, I ventured to say, "In these days of disquieting dispatches, when there are rumors of trouble between Great Britain and the United States, it is pleasant to think that 'blood is thicker than water.'" This utterance was taken to mean that we are all English-speaking kinsmen, and even before I had finished, the old proverb was received with prolonged applause.

The next meeting of the Australasian Association is to be held in Hobart, the capital of Tasmania, under the presidency of the governor, Sir Robert Hamilton. The energetic secretaries Professor Liversidge, Professor Hutton and Mr. Morton, promise a cordial welcome to any of our members visiting the Association. Should you accept the invitation, you will enjoy every feature of the remarkable island, Tasmania, where the meeting is to be held. You will be delighted by Tasmanian scenery, vegetation and climate, but that which will give you the greatest enjoyment in this as in other English South Sea colonies, is the fact that you are among English-speaking friends half way around the world. You will find that their efficient Association is devoted to the advancement of science and the promotion of sound learning. In short you will be made to feel at home.

The subject which I have selected for the valedictory address deals with certain industrial, commercial and economic questions: nevertheless it lies wholly within the domain of botany. I invite you to examine with me some of the possibilities of economic botany.

Of course, when treating a topic which is so largely speculative as this, it is difficult and unwise to draw a hard and fast line between possibilities and probabilities. Nowadays, possibilities are so often realized rapidly that they become accomplished facts before we are aware.

In asking what are the possibilities that other plants than those we now use may be utilized we enter upon a many-sided inquiry.\* Speculation is rife as to the coming man. May we not ask what plants the coming man will use?

There is an enormous disproportion between the total number of species of plants known to botanical science and the number of those which are employed by man.

The species of flowering plants already described and named are about one hundred and seven thousand. Acquisitions from unexplored or imperfectly explored regions may increase the

\* For references, notes, etc., see p. 300.