

Section on Practical Pharmacy and Dispensing

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CULTIVATION OF ECHINACEA AND BELLADONNA.*

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Some two or three years ago my attention was called to the subject of the cultivation of medicinal plants in the United States. I have taken a good deal of interest in that particular enterprise. I shall confine myself almost entirely to a few statements with regard to Belladonna and say nothing of the most excellent work in medicinal plant culture in different parts of the country, and especially under the direction of the United States Board of Agriculture. It seems to me that we must, in this country, in a very short time, consider this question of the cultivation of medicinal plants very seriously. I wrote to the Department of Agriculture at Washington with regard to the question of one of the plants that is very abundant, or used to be very abundant, in the State of Kansas. The plant I refer to is Echinacea, which, no doubt, you have learned the American Medical Association has "turned down" and yet, notwithstanding, the demand for this by the practitioner today is to the extent of about 200,000 pounds annually. *Echinacea Angustifolia* grows very abundantly in Rooks county, Kansas. I was instrumental in directing Doctor Lloyd and other manufacturers to a botanist in that section and started the enterprise of its collection.

I would like to say in reply to the report made by the American Medical Association with regard to this plant that some years ago while attending a county medical society in Kansas, one of its members asked publicly if anyone knew about the drug known as Echinacea. I said I had some knowledge of it and gave something of its history.

I was asked if I knew anything about the therapeutic qualities. As a pharmacist I could not make any statement as to its therapeutic action, but stated that physicians were reporting good results from its use in cases of eczema and other like diseases. After the close of that meeting, one of the members of the society came to me and said: "Professor, if you want to know something about the therapeutic action of Echinacea I would like for you to go with me over my round in the treatment of cases where I apply it. I would like to show you something of its action." One day he called to take me out as promised. He said: "I am treating this case entirely with Echinacea and I want you to see it." The action of the drug seemed to be very helpful indeed. I said to the doctor after he had carried this patient (afflicted with carbuncle) through successfully that I really felt one must admit there was some value to Echinacea.

Echinacea has been going out of the State of Kansas to the extent of about

*Delivered orally and corrected by the author from the stenographer's notes.

200,000 pounds a year. This suggested to my mind that in the course of time the plant would be extinct and it would be necessary for us shortly to adopt some measure by which the plant could be cultivated, otherwise it might be entirely exhausted. I wrote to the Department at Washington and asked them to study up the cultivation of the plant and give us some information regarding this as someone of the farmers might be interested in cultivating it. The Bureau of agriculture has done some work upon this and their reports as to its cultivation are very satisfactory indeed.

The point I want to speak of particularly is in regard to the cultivation of Belladonna leaf. My attention was called to this as a member of the Revision Committee of the United States Pharmacopœia. Dr. Albert Schneider, of California, has been very much interested in the cultivation of this plant and a year or so ago he asked me as a member of the Committee whether I would not take up the investigation of Belladonna with a view to assisting the people of this country in cultivating the plant itself. He remarked in his letter: "Unless the United States Pharmacopœia can introduce into the Pharmacopœia the term 'Herba Belladonna' instead of 'Belladonna Folia' we cannot possibly compete with the British leaf or European leaf." He says: "In the various analyses I have made of the stems and of the leaf of Belladonna, I find that the alkaloidal assay of the mixture is above that of the United States Pharmacopœia."

Before I took up this matter for investigation I wrote to Parke, Davis & Company and others who are familiar with this production in California and asked them for their results. Then, I had sent to me at the laboratory the plant as cultivated there. Analyzing the plant for its alkaloidal constituency, and doing this with the leaves separate, and then with the leaves and stems combined. The question in our minds was, Would it be possible and safe for us to introduce into the Pharmacopœia "Herba Belladonna," thereby including the leaf and the stems?

I wish to acknowledge my indebtedness to Professor Havenhill for the great assistance rendered by him in these analyses. The result in our laboratory shows that the stems and leaves combined, of the American plant, yield an alkaloidal strength greater than the requirements of the United States Pharmacopœia. So I am going to recommend to this Committee that Herba Belladonna shall be introduced into the United States Pharmacopœia. What effect that motion will have, I do not know. No positive conclusion has as yet been reached.

A letter recently received from Mr. Schneider states: "For this year the herb from five acres of Belladonna will be about two and one-half tons. Under favorable cultural conditions the yield will be, in all probability, three and one-half tons, but owing to some difficulties I have not been able to have the field operations attended to as they should have been."

This is the gist of the letter. He writes me quite a long letter and states something interesting with regard to the analyses. He will send me in a short time from this year's yield an average specimen of Belladonna Herb from this two and a half tons, so that the analysis of the whole herb will be made and the report will be given to the Sub-Committee. I trust that thus home cultivation of medicinal plants will be encouraged by the pharmacists at large, by the public and by the Committee of Revision of the United States Pharmacopœia.