

lot of elixir gets divided into the required number of doses by the many consumers, the slight variation in the yield of the tablets is entirely lost sight of.

Now let us consider the variation in the weight of the individual tablets themselves. It would be an endless and entirely impracticable task to attempt to weigh individually all of any large lot of tablets. Ten tablets were taken at random from each of ten different lots that had been made by different machines and the tablets were weighed separately. The maximum variation was found to be nine percent. from the average, and only seven tablets in the hundred to vary more than five percent. from the average. This variation is certainly very much less than with any of the other methods of dispensing medicines. Does it not seem, therefore, that an occasional variation of 10 percent. or even 15 percent. in the weight of one tablet from the average weight of 100 tablets should be legally allowable? Such a variation would be considered small by the other methods of administering medicines.

In conclusion the writer wishes to emphasize the following:

- 1st. That the methods of dispensing powders, liquids, and capsules present wide variations in the individual doses.
- 2nd. That tablets are by far the most accurate means of dispensing medicine.
- 3rd. That the average weight of a large number of tablets should contain the exact amount of the ingredients claimed by the label.
- 4th. That a permitted variation of 10 percent. or 15 percent. in the weight of individual tablets would not be excessive as a legal standard.

FROM THE LABORATORIES OF PARKE, DAVIS & CO., DETROIT, MICH., JULY 12, 1913.

CUNILA MARIANA L., A SUBSTITUTE FOR SPIGELIA.

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During the last few months several crude drug dealers have submitted to the writer for verification commercial samples representing recent shipments of what was supposed to be pinkroot. Upon examination the larger number of these samples proved to be spurious. The sophistication, however, was not *Ruellia*, the usual adulterant, but a new one which was identified as *Cunila Mariana* L.

Virginia is given as the type locality of this plant, known locally as American, mountain, or Maryland dittany, but it is found also in the Ohio valley and the States bordering on the Southern Appalachians. It is of interest to note that within its range of distribution are included those areas in which both *Spigelia marilandica* and *Ruellia ciliosa* are most abundant.

By the gross characters of its roots *Cunila* may be readily distinguished from *Spigelia*. The dry roots of the latter are very friable and break readily with a fairly smooth and usually whitish fracture, while roots of *Cunila* do not break readily but when sharply bent the cortex splits off from the tough woody part in a manner strongly suggestive of *Ruellia*. The microscopical characters of the root as seen in cross section readily differentiate *Cunila* from both *Spigelia* and

Ruellia, but further mention of them is unnecessary since good descriptions of the anatomy of all three plants are readily available in the literature.¹

An effort was made to trace the source which supplied this new substitute, but aside from the mere statement that a large shipment from Kentucky had reached the crude drug markets of the East, nothing was learned. It is probable, however, that more of this root will be collected and marketed and it may be possible eventually to determine the exact locality in which it is being collected.

It is an open question whether the wholesale adulteration of pinkroot which has been so much in evidence during recent years is due to carelessness, ignorance or cupidity on the part of the collectors. Manufacturers using this drug certainly can not afford to jeopardize the purity of their preparations by using the false or adulterated pinkroot, and a concerted effort to drive the spurious drug out of the markets is highly desirable.

Some definite results might follow if the large dealers in pinkroot were to furnish to local buyers for distribution among collectors, a leaflet containing a good picture of the *spigelia* plant and a warning against the unsatisfactory methods of collection so frequently pursued.

THE COMMERCIAL POSSIBILITIES IN GROWING MEDICINAL PLANTS.

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The commercial possibilities in growing medicinal plants are now recognized by the governments of England, Austria and the United States. The International Congress of Applied Chemistry, a society whose able efforts toward industrial development are now universally recognized, is taking active steps in the investigation of drug plant cultivation through an international committee. Universities, private institutions, and individuals have been induced to broaden their field of investigations to include medicinal plants.

From scattered, disconnected and poorly planned investigations of a minor character this work is gradually being organized with a determination that insures success. The dignity with which this movement is now being advanced removes all chances for doubt as to the practical value of drug growing. The success of such an undertaking will of necessity depend upon the commercial possibilities presented. The work in the United States has now reached a stage where these possibilities must be carefully considered.

The early history and evolution of the cultivation of medicinal plants within the U. S. and other countries has been treated elsewhere in an able manner by several authorities and need not be repeated here. It might be well to add, however, that most of the early work on drug growing was not exhaustive. It gave

¹Holm, Th., *Medicinal Plants of North America*, No. 5. *Cunila Mariana* L. Merck's Report, vol. 16, pp. 188-189, 1907.

Stockberger, W. W., *Pinkroot and Its Substitutes*, *Pharmaceutical Review*, vol. 25, pp. 2-21, 33-47, 66-84, 97-107, 1907.

Mansfield, W. M. *Ruellia as a Spigelia Substitute*. *Druggists Circular*, vol. 53, pp. 110-114. 1909.