

the chemical skill of his nephew, Mr. David Howard, and as a sufficient quantity of the dried leaves—about 20 pounds—were operated upon, the conclusion arrived at may be regarded as perfectly satisfactory. The result may be stated as virtually negative, for though a few grains of precipitated alkaloid were obtained, which, upon further treatment, yielded a minute quantity of cinchonidine, it is probable that this product originated in some fragments of the bark of small branches accidentally mixed with the leaves. Mr. Howard thinks that if even the footstalks yielded alkaloid, the quantity obtained would have been larger.

YIELD OF MUSK.—From an examination of four lots of musk bags, representing seventy-three pods, Mr. T. J. Covell (*Am. Jour. Pharm.*) states the average weight of the pod to be 392.5 grains, and the yield of musk from such 123.6 grains.

EFFECT OF MANURES ON THE ALKALOIDAL YIELD OF CINCHONAS.—Mr. Broughton, Government Quinologist in India, has for some time been carrying on a series of experiments on the effect of manure on various species of cinchona, the results of which are given in the *Pharmaceutical Journal and Transactions*. The manures employed were guano, sulphate of ammonia, and stable manure, and it was in the application of these to the *cinchona officinalis* that the most marked results were obtained. A number of trees were selected, as near as possible under similar circumstances, with regard to age, &c., and these were severally treated with one pound of guano. The effect on the growth, or appearance, was not perceptible, but an analysis of the bark, when compared with that of unmanured trees, gave the following percentage results:—

	Manured.	Unmanured.
Total alkaloids.....	6.51	3.98
Pure quinine	4.41	2.40
Cinchonidine and cinchonine	2.10	1.58

Thus, by this treatment, showing a gain of 2.53, of which increase 2.01 was quinine. With other trees of the same species, treated with $\frac{3}{4}$ lb. ammoniac sulphate, the results were as follows:—