

COMMENTS ON THE PAPER ON BIOLOGICAL STANDARD FOR ERGOT  
PRESENTED BY MARVIN R. THOMPSON, AT THE RAPID CITY  
MEETING OF THE A. PH. A.\*

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Since September of 1927, I have been engaged in securing the application of the U. S. P. biological test to a large number of samples of ergot and Fluidextract of Ergot. The methods followed in this work have been such that the tests have been quite as much tests of the method of testing as of the samples of ergot employed, and I feel that the results have an important bearing on the question raised in Mr. Thompson's paper.

It is to be noted that I have not in any case applied this test myself, so that personal prejudice is quite impossible. However, in very few cases has the analyst making the test had any knowledge as to the source of the sample, which has been supplied through a third party. In almost every case, the same sample has been referred to more than one analyst, in several cases to three and in one case to four. Again, the same sample has gone to the same analyst more than once, without his knowledge that he had previously tested it. It will thus be seen that the samples and the tests have depended for the results, solely upon their own merits.

Under these conditions, I have received the following reports of relative therapeutical strength, by percentage, exact conformity with the U. S. P. test being regarded as indicating 100 per cent. The reports, on the same lot of ergot, thus referred to different analysts and to the same analyst at different times, are as follows: "90.9%-100%-110%-112%-123%-133%-155%-165%-167%. Not all of these figures referred to the same lot of fluidextract, although all the fluidextracts were made from the same lot of ergot.

Equally discordant reports have been received from portions of fluidextract taken from the same bottle. Thus, three such samples were sent for comparison to two different analysts. One reported 128%, 130% and 125%, the other reported 166%, 166% and 250%.

Of two other samples sent to the same analyst, one reported 125% and 167%, the other 155% and 125%. It happened that one of my samples was submitted by Chairman Cook of the Revision Committee to some official at Washington. Regarding the results of this test, Professor Cook has told me that "it showed 100%, the same as the others." I took the precaution to send this sample to two analysts who reported 128% and 168%. Another sample that has been reported in a printed article as being of 195% to 200%, the identity of the sample not being stated, I believe to be the same as the one above referred to.

From this experience of two years, involving a large number of samples, I feel sure that the Cock's Comb test cannot be regarded as capable of yielding reasonably uniform results in the hands of different analysts, or of the same analyst at different times.

It is also true that any sub-standard fluidextract can be caused to meet and ex-

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\* Scientific Section, A. PH. A., Rapid City meeting, 1929.

<sup>1</sup> The author of these comments was not able to be present at the reading of Mr. Thompson's paper, but Mr. Thompson was kind enough to inform him of the general subject as presented.

ceed the biological requirement by the addition to it of a minute amount of some substance that cannot be detected by the analyst.

Another conclusion regarding the value of this test is justified by the following experience.

A lot of ergot, stored in bags in a warehouse, was thoroughly watersoaked in the extinguishing of a fire that occurred in that warehouse. After lying in this condition in a damp basement for three weeks, this ergot was examined by three arbitrators, in order to fix the amount of damage, for the fire underwriters. At this time, the ergot was still thoroughly watersoaked, a mass of mould, emitting a very offensive and rancid odor, thoroughly decolorized on the surface and to a great extent internally, many of the grains being soft and mushy, and there being extensive decomposition of the fat and proteid matter, and supposedly also of the alkaloids. The ergot was unanimously voted unfit and dangerous for use and was written down as a total loss. Nevertheless, samples of this ergot that I had submitted to biological test by two pharmacologists were reported as having 125% and 167% of the official strength.

From this and many similar experiences, I conclude that the Cock's Comb test will indicate perfect quality in an ergot that is badly decomposed and unfit for use.

Another fact that I have long known and which has been confirmed by these experiments is that no necessity whatever exists for the Cock's Comb test in its present form, even assuming that it was reliable. It is not often that a sample of ergot, that any competent judge of the drug would accept as being of fair quality, is found deficient by the Cock's Comb test, but I have known a great many that any competent judge would condemn as unfit for use that were indicated as of good quality by this test. Indeed, if there is any conflict between a judgment based on physical examination of the drug and the result of the Cock's Comb test, then I am prepared to say that it is the test that is at fault.

The only value of this Cock's Comb test, and the only actual use that has been made of it, is to secure the approval of ergot that is not entitled to confidence, and to prevent the retail pharmacist from supplying fluidextract of his own manufacture. This should be denominated abuse, rather than use! It will doubtless interest this audience to know that on one occasion, after I had lectured to my students on the subject of ergot, I advised them that the most certain method by which they could supply a perfect fluidextract of ergot was to carefully select the drug according to the instruction received in our class in pharmacognosy and to make their own fluidextract by the process taught them with equal care in the department of pharmacy. After the lecture several of them came to me and reminded me that the requirement of the biological test made it impossible for them to dispense the drug of their own manufacture, as they had no means of applying this test. My answer was that they would be perfectly justified in dispensing such a fluidextract without the formality of making the test.

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"An Empiric Assay for Compound Pills of Mercurous Chloride," by L. E. Warren.

Jenkins method for assay of podophyllum determines resins and certain vegetable acids together. Each vegetable ingredient of com-

pound cathartic pills studied separately by this method. Ten commercial samples analyzed. Addition of resin of jalap, resin of ipomoea or aloes readily detected by this method.—Scientific Section, A. PH. A.