ADDRESS OF W. J. BEAL, PRESIDENT OF THE SOCIETY.

Gentlemen of the Society for the Promotion of Agricultural Science:

This is our second annual meeting. As a Society, we have no great record to sustain us, as we have only just fairly organized for a beginning. A few men have volunteered to found an association for the purpose of advancing agricultural science. We have come together for work — the presentation of papers and discussing them, for making our organization more complete, for judiciously adding a few members to our number, which now only amounts to 21, all told. Judging from other associations and considering that the members are widely scattered in various parts of the United States, we have no reason to expect more than 40 to 50 per cent of these will ever be present at any one meeting.

The objects in many respects differ from those of any other society ever formed in this country. The field which we intend to occupy is nearly new. It is not a narrow, shallow, barren field, but broad, deep and fertile, and if well tilled is sure to produce an abundant harvest. We should agree and definitely outline the objects of the society and then adhere to the plan. It seems to me that our legitimate work lies in the direction below specified. Perhaps I have made it too broad; very likely I have omitted some important points.

I. To encourage the formation, cooperation and support of agricultural experiment stations.

II. To try to ascertain what experiments in agriculture are most needed, and indicate the methods of conducting them.

III. To discover and define the best methods for uniform standards in the analyses of soils, fertilizers and vegetable products.

IV. To discover and define the best methods of stamping out parasites and contagious diseases of all domestic animals.

V. To endeavor to find the best combination of foods for growing or fattening animals in the various parts of our country.

VI. To make discoveries and extend the application of science in dairying.

VII. To experiment in fish culture.

VIII. To investigate insects which are injurious or beneficial in agriculture, and discover improved remedies for those which are injurious.

IX. To learn and point out the best methods for testing each kind of agricultural seed, to ascertain its vitality and purity.

X. To make investigations in vegetable physiology, especially with reference to learning how to keep plants in healthy and productive conditions. To study fungi which infest cultivated plants and point out remedies.

XI. To advance the subject of improving crops by the selection, cultivation, crossing and hybridizing plants for seed.

XII. To encourage agricultural surveys in the states and the nation and to discover improved modes of conducting them.

XIII. To encourage agricultural education, to encourage and approve good work done by any one in the United States Department of Agriculture.

XIV. To enconrage collecting and improved methods of arranging and presenting statistics in agriculture.

XV. Finally, in every way to encourage and help each other and oth-

ers who are not members in original research in all that pertains to science in agriculture.

As a society, good works for an honorable name are yet to be won, if they are ever won. Our aims are high and with united earnest effort, a grand future is before us. Even at this early day, we have the united interest and cordial support of all the members. Our most valuable work may not attract public attention, but let not this lead to discouragemeut. Our aim is not for display or attracting large numbers by flowery speeches announced in pleasing programmes.

We have organized in the most prosperous times in the whole history of our great nation, when science and its applications are progressing with unparalleled rapidity. We may well rejoice that we live in such auspicious times and take pride in this noble undertaking which may accomplish some good for agriculture—an honorable business in which over half of our people are engaged and in which all are deeply interested.

APPLYING FERTILIZERS TO ROOTS.

BY J. J. THOMAS.

The advancement of agricultural improvements is at present retarded by two causes. One is the want of careful and accurate experiments on the part of cultivators, who examine and decide on the merits of any particular course of cultivation by mere estimate or guess work, which gives them but imperfect and often erroneous conclusions. The other retarding cause is the random manner in which accurate experiments are devised, or made without the guidance of some leading scientific principle in view. Take, for example, the many experiments which are yearly made with the potato crop. We find reported results from planting one and two cut pieces in a hill, as if this were a matter of any importance, or established any principle. And, again, many experiments are made with cut and whole seed. No governing principle being in view, the results are variable and contradictory. In one case the uncut tubers are planted early, in a deep, rich, moist soil, causing the emission of an abundance of shoots and the growth of too many potatoes for their proper development. The fewer eyes from the cut pieces give fewer stalks, but better grown and larger tubers. The experimenter at once decides that planting potatoes whole should never be adopted in practice. Another cultivator performs the same experiment by planting later in the season, during a period of severe drouth, and in a soil suffering from a want of moisture. The impervious skin of the whole potatoes used as seed prevents them from drying up, and they send out and support vigorous, healthy shoots, and bring a good crop. The cut pieces, with the cells laid open to evaporation, soon dry up, and feeble shoots and a small crop are the result. This experimenter decides that potatoes should never be cut for planting. There are hundreds of experimenters every year who reach erroneous and contradictory conclusions by not adapting the treatment to controlling circumstances, or by not keeping in view the guidance of some leading scientific principle or combination of principles.

A fruitful source of error in aiming at the results of experiments otherwise carefully conducted, is the imperfect knowledge which the experimenter possesses of the extension of the roots of the crops which he culti-