enter into it with the zest and interest worthy of the professions represented.

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DISCUSSION AND CORRESPONDENCE.

THE MEXICAN COTTON BOLL WEEVIL.

TO THE EDITOR OF SCIENCE: In your issue of November 13 (p. 640) you quote from *Bradstreet's* an item regarding the loss to the cotton crop of Texas through the ravages of the Mexican cotton boll weevil. In the course of the article *Bradstreet's* states that six months ago it advocated a careful consideration of the subject by congress. From this quotation alone *Bradstreet's* seems to be singularly misinformed as to what actually has been done by the government, and the quotation will, therefore, mislead your readers.

In 1894 an investigation of this insect was begun by the Division of Entomology of the U. S. Department of Agriculture, and in 1896 and 1897 circulars were published which indicated the great danger to the future of cotton in the United States and proposed remedial treatment. The governor of the state and the legislature were advised by the department of the condition of affairs and the dangerous prospects, and the legislature was urged to pass a crop pest law, the enforcement of which would have resulted in the confinement of the insect to a restricted region in extreme southern Texas, and possibly in its extermination even in that region. The legislation proposed was not enacted. For the past three years the Division of Entomology has been carrying on further investigations through appropriations from congress of $10,000 in the fiscal year 1901–2, $20,000 in 1902–3, and $30,000 in 1903–4. It has resulted from this work that, while no method of extermination has been discovered, it has been demonstrated beyond a doubt that it is possible, even under present conditions and in the worst infested portions of Texas, to raise a fair crop of cotton in spite of the weevil. Experimental demonstrations have been made the past summer on several hundred acres of cotton lands at six stations under the control of the Division of Entomology, and on this controlled land from a half of a bale to one bale per acre of cotton has been already harvested, while in adjoining territory the average crop has not exceeded one bale to from six to fifteen acres.

L. O. HOWARD.

SHORTER ARTICLES.

SOME INSECT REFLEXES.

IN the course of some experiments on the sense-reactions of honey-bees, I have kept a small community of Italian bees in a glass-sided, narrow, high observation hive, so made that any particular bee, marked, which it is desired to observe constantly, can not escape this observation. The hive contains but two frames, one above the other, and is made wholly of glass, except for the wooden frame. It is kept covered, except during observation periods, by a black cloth jacket. The bees live contentedly and normally in this small hive, needing only occasional feeding at times when so many cells are given up for brood that there are not enough left for sufficient stored food supplies. Last spring at the normal swarming time, while standing near the jacketed hive, I heard the excited hum of a beginning swarm and noted the first issuers rushing pellmell from the entrance. Interested to see the behavior of the community in the hive during such an ecstatic condition as that of swarming, I lifted the cloth jacket, when the excited mass of bees which was pushing frantically down to the small exit in the lower corner of the hive turned with one accord about face and rushed directly upward away from the opening toward and to the top of the hive. Here the bees jammed, struggling violently. I slipped the jacket partly on; the ones covered turned down; the ones below stood undecided; I dropped the jacket completely; the mass began issuing from the exit again; I pulled off the jacket, and again the whole community of excited bees flowed—that is the word for it, so perfectly aligned and so evenly moving were all the individuals of the bee current—up to the closed top of the hive. Leaving the jacket off