burgh, W. Va.; J. A. Lintner, Albany, N. Y.; Rev. J. G. Morris, Baltimore, Md.; Wm. Saunders, London, Ontario; E. W. Claypole, Yellow Springs, Ohio; Miss M. W. Brooks, Salem, Mass.; B. Pickman Mann, Washington; C. D. Zimmermann, Buffalo, N. Y.; A. J. Cook, Lansing, Mich.; J. D. Putnam, Davenport, Iowa; S. H. Peabody, Champaign, Ill.; V. T. Chambers, Covington, Ky., and Chas. Drury, Avondale, Ohio.

On Thursday, August 18th, the Sub-section of Entomology met at 2.30 p. m.

The first paper read was by Prof. C. V. Riley, on Retarded Development in Insects. In this paper the author recorded several interesting cases of retarded development in insects, whether as summer coma, or dormancy of certain portions of a given brood of caterpillars, the belated issuing of certain imagines from the pupa, or the deferred hatching of eggs. One of the most remarkable cases of this last to which he called attention was the hatching this year of the eggs of the Rocky Mountain Locust or Western Grasshopper, *Caloptenus spretus*, that were laid in 1876 around the Agricultural College at Manhattan, Kansas. These eggs were buried some ten inches below the surface in the fall of 1876 in grading the ground around the chemical laboratory, the superincumbent material being clay, old mortar and bits of stone and a plank sidewalk above this.

In removing and regrading the soil last spring, Mr. J. D. Graham noticed that the eggs looked sound and fresh, and that they readily hatched when exposed to normal influences; the species being determined by Prof. Riley from specimens submitted by Mr. Graham. Remarkable as the facts are, there can be no question as to their accuracy, so that the eggs actually remained unhatched during nearly four years and a half, or four years longer than is their wont. This suggests the significant question: how much longer the eggs of this species could under favoring conditions of dryness and reduced temperature, retain their vitality and power of hatching.

Putting all the facts together, Prof. Riley concludes that we are yet unable to offer any satisfactory explanation of the causes which induce exceptional retardation in development among insects. The eggs of Crustaceans, as those of *Sepus* and *Cypris*, are known to have the power of resisting drouth for six, ten or more years without losing vitality, while in some cases they seem actually to require a certain amount of desiccation before they will hatch. Yet the fact remains that different species act differently in this respect, and that individuals of the same species under