Memorandum concerning Losses Due to the Southern Buffalo Gnat (*Eusimulium pecuarum* Riley) in Arkansas, 1934

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A loss of approximately 527 mules was caused by the attacks of the Southern Buffalo gnat (*E. pecuarum* Riley) in Arkansas during April of this year. The following table shows this loss tabulated by counties together with the source of the information.

Table 1. Number of mules killed in counties in Arkansas during 1934 and reporting type.

Arkansas Areas Affected and Losses 1934		
County	**Number of mules killed**	**Reporting type AL = actual loss E = estimate (county agent)**
Cross	85	E (Mr. Shultz)
Lee	116	AL (Mr. Chisholm)
Lonote	141	AL (Mr. Frasier, County Agent- Actual check by FERA Committee)
Monroe	75	Mr. Mimms, County Agent - E
Phillips	110	AL (Mr. Chisholm, AAA representative)
Total	527	

During 1931 a similar outbreak occurred in which 500 mules were reported killed in Philips, Lee, Monroe, and Arkansas Counties. Although this pest does not cause the death of mules every year, it is present as a rule in numbers sufficient to cause a considerable loss to farmers due to farm work being impeded during the gnat season. This is due to having to keeping the mules out of the fields early in the morning and late in the evening, at which times the gnats are most persistent in their attacks. Also, the expense of repellents which need to be applied to give the animals some measure of relief constitutes a considerable item. The most common repellent used by those who must depend on cheap homemade products is

crank case or burnt oil which is mixed with a little pine tar. When this mixture is mopped on an animal almost daily over long periods, a definite injury is said to result due to burning of the skin and over-heating while at work. There is a great need for the development of a cheap, easily made, non-injurious repellent for use against this insect. There are many points in the life history of the Southern Buffalo gnats, which are only imperfectly known, and which need investigation. It is believed that with the data obtained from a study of the biology of this pest, it would be possible to forecast injurious outbreaks with a considerable degree of accuracy, and that stock losses could be greatly reduced. The exact manner in which gnats cause mule death is a subject of much controversy. It seems probable, however, that mules die due to the toxic effect of the gnat bites, and that individual mules vary in their susceptibility to this gnat toxin. The physical condition of a mule seems to contribute considerably to its ability to withstand gnat attacks but this point also needs investigation.