weeks after the seed is planted or when the seed is beginning to germinate. If the weather turns out to be unfavorable after the second inoculation a third attempt is recommended. Crimson clover planted on the same soil year after year tends to grow better. This is probably the result of more complete inoculation.

The above requirements and procedures may appear expensive and tedious, but on Tifton sandy loam soils at the Georgia Coastal Plains Experiment Station a combination of crimson clover and the new hay type Bermuda grass has given four cuttings of hay per season (one clover and three grass cuttings), totaling 3 to 4 tons of hay per acre. Furthermore, it appears that this combination will reduce the need for renovating the Bermuda grass sod as frequently as would otherwise be required.—J. L. STEPHENS and E. A. HOLLOWELL, Division of Forage Crops and Diseases, Bureau of Plant Industry, U. S. Dept. of Agriculture.

**CASSIA TORA, A LEGUME NOT PRODUCING NODULES**

The development of nodules on roots of legumes is apparently not peculiar to all species. This was brought out by Leonard with special reference to the genus Cassia. The author reported that under no known circumstances have nodules been found on Cassia tora L. However, Parks, reporting on this legume among others states, “It bears as many nodules as any cultivated legume”. This statement has brought inquiries relative to the bacterial nitrogen-fixing status of C. tora.

While one cannot definitely say nodules will or will not be found under any circumstances on this legume it would seem, if they occur at all, that they should be observed in places in the southeastern states where the plant abounds. Numerous recent observations in this territory have failed to bring to light any data to confirm the statement of Dr. Parks. In correspondence with Dr. Parks it is indicated that his observations were made in the Sabine region of Texas. This section is considerably west of the area in which the author examined roots of C. tora. In order to obtain material from the Sabine region, Dr. M. B. Morrow was asked to get specimens for examination. At her suggestion, Prof. S. R. Warner, Sam Houston Teachers' College, Huntsville, Texas, kindly collected and forwarded liberal samples in 1941. Some of these exhibited galls, but none had the external appearance, and some examined internally did not have the characteristics of leguminous plant nodules.

Some of the galls were given to Mr. E. A. Siegler of the Bureau of Plant Industry who kindly made determinations for Phytomona tumefaciens (Smith and Townsend) Bergey, et al. His tests were negative, thereby showing the galls were not the result of an infection with this organism. Other material from the same lot was examined

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