during the summer months because growth is much more rapid than during the winter period. The plots were fertilized once a year with superphosphate and sulfate of potash equivalent to an 0-6-18 mixture at the rate of 400 pounds to the acre.

As soon as these 14 grasses had sodded well they were all mowed, after which cuttings at the young grass stage were made on duplicate plots on April 26, 1935. Second or early hay stage cuttings were obtained from a second set of duplicate plots during the period May 2 to June 11, while the third stage or late hay cuttings were obtained May 16 to June 27. Composited samples of each grass were prepared from each cutting and were analyzed for protein, fat, fiber and ash.

For purposes of comparison the analyses of each of these cuttings are grouped in Table 6. An inspection of the protein content shows that though high at the young grass or first stage of growth it varied considerably for the different species, and ranged from 13.00 percent for Vasey to 20.81 percent for Dallis, with an average for all 14 grasses of 16.43 percent. Proteins tended to be markedly lower at the early hay or second stage, averaging 11.22 percent. The protein content of the late hay or third stage was somewhat lower than that of the second and averaged 9.57 percent. There was a delay in cutting the second stage samples of the molasses and Bahia grasses and this is reflected in the low protein and high crude fiber contents of these samples. Since some of these grasses become more stemmy than others at the more mature or second and third growth stages, the protein at these stages varied in a corresponding manner. Thus there was a decided decrease in the protein content of the stemmy types such as *Andropogon* species, Guinea, Vasey and Dallis and a smaller decrease in the prostrate growing types such as *Digitaria* species, carpet, centipede and St. Augustine.

The crude fat content of the grasses averaged 2.94 percent for the young grass stage (Table 6) with a very considerable drop to 1.87 percent for early hay stage and a lesser decrease to 1.65 percent for the late hay stage. Reed canary grass and red top seem unusually high in crude fat but the second cutting was equally high. There was less increase in crude fiber of the third stage over the second than for the second over the first. The ash contents of the grasses decreased considerably at the older stages of growth. Since these ash analyses are of the first cuttings for all 3 of the stages of growth they furnish a comparison not complicated by the decreasing ash content of the