

selective and 30 percent random. The latter method is recommended for further investigation. The sampling was accomplished by collecting the attached or floating plants within a one-square-foot iron frame. From these samples both wet (green) condition volumes and oven dry weights were obtained. The green-wet plants collected after draining 1 to 5 minutes were immersed in a large can that had a baker-like spout and which was filled with water to the spout. The overflow water resulting from the immersion of the sample was measured in cubic centimeters and this volume figure used as the rough wet weight since the specific gravity of water and the plants are similar. Percent water was computed from the wet and dry weights.

The oven dry weights were obtained by first air drying with caution taken to prevent molding and fermentation. Then the samples were oven dried to nearly constant weight at a temperature 100--105 deg. C. The weight values in grams were then used to estimate the pounds per acre in areas for which the samples were representative. A final estimate of the approximate total pounds per acre in the springs and rivers was calculated on the basis of percentages of cover of the plant species as estimated in the field visually through the clear spring waters. The data are included as a summary in table 8. Similar but incomplete data not included in the table indicate that the lower reaches of these same runs possess turbidities, definite marine salt, estuarine fluctuations, and a much smaller density of plants. In the clear offshore marine waters rooted aquatic vegetation again becomes dense in the shallow flats off the Gulf coast.

Plant species constituting the aquatic vegetation were determined in nearly all cases except for identifications of a few algae still pending. Some characteristics of percent water and growth density are summarized in table 9. This table can be used as a basis for wet-dry conversions in further work.

So far, data on chlorinity, oxygen, and phosphorus have been obtained for these runs. Definite correlations between chlorinity and species have been observed as in the correlation of *Sagittaria pectinatus* with chloride values between .100 and 1.0 parts per thousand. Observation of peculiar zones of depleted chlorides (.000 ppt) among heavy *Clusia* beds in Weekiwachee springs is being checked.

The tendency for *Sagittaria* to dominate the low chlorinity waters and for *Vallisneria* to cover the bottoms in the slightly higher chlorinity ranges has been observed. Zones of simultaneous growth of the two species occurred halfway down these runs. These two species are very similar in general growth form. An ideal situation for the study of competition is indicated here.