On the south coast of Puerto Rico, where the rainfall does not exceed 40 inches, many large alkali areas occur on the terraces and bottom lands. Near the sea, where the water table is only one to two feet below the surface, the principal salts encountered are sodium chloride and sodium sulfate. The soils in this locality have a solonchak-like profile. On the slightly higher lands back from the sea, the principal salt in the alkali areas is sodium carbonate, and the soils have a solonet-like structure.

Excluding the alkali areas most of the soils on the south coast of Puerto Rico are favorable for the production of sugar cane when irrigated, and most of them are used for this crop. These cane soils are valued at $200 to $700 an acre and rent for $20 to $80 an acre. The alkali areas within them are used only for pasture and timber. They are valued at $40 to $60 and rent for $5 to $7 an acre. It is easy to realize the significance of the effect of the alkali on this valuable land. Here as in other countries crops grow luxuriantly within a distance of three to five feet highly concentrated salt areas, especially if the salts are sodium carbonates. There seems to be little gradation, the soil will either produce good cane or none at all.

In studying the effect of alkali on soil structure in this region, two profiles located one mile south of Barrio Eliza in Hysa- anda Teresa were examined. Profile No. 1 was on a typical black alkali area where only pasture grasses and sedges were growing. It had been planted to cane about five years previously but there was very little germination and the crop was a total failure. Profile No. 2 just nine feet away, was on a recently plowed cane field where the cane production is good.

The soil type is the same in both profiles and is tentatively called Santa Isabelo silty clay. However, the one represented by profile No. 1 is classed as an alkali phase of this type. The sur-