
INDUSTRIAL PLANT BIOCHEMICAL UTILIZATION OF OKLAHOMA FLORA

A. C. SHEAD, University of Oklahoma, Norman

ABSTRACT

National safety depends upon domestic sources of botanical raw material for chemical industries. Profitable exploitation is enhanced by the collection of suitable plants in botanical gardens devoted to the study of their properties; the gardens may be supported financially by federal, state, municipal, institutional, or private funds, and backed by garden clubs, civic bodies, high school botany departments, etc. Growing plants should be on hand for study at all times owing to rapid change in living organisms.

Trees that can be tapped without destruction can furnish annual sources of revenue. Examples are sugar maple, sweet gum (storax), *Frazinus Ornus* (mannitol), *Rhus verniciflua* (varnish), mesquite (gum), ornamental olive (gum), and pines (turpentine and resin). Such trees can be economically grown in the municipal wood lots strongly advocated by national foresters.

Another set of trees that must be destroyed for their *special* products may also supply *general* products like charcoal or cellulose. Examples are bois d'arc (dye), sassafras (essential oils and dye), horse sugar (*Symlocos tinctoria*—dye), Indian cherry (*Rhamnus caroliniana*) (dye, tannin), dyers' oak (tannin and dye), cedar (insecticides, cedar wood oil), sweet birch (essential oil), etc. Such trees should be utilized completely just as the animal is in packing plants. No single product can bear expenses, but complete utilization of all products may often yield a profit.

Literally hundreds of domestic and adaptable foreign plants have valuable possibilities, not only as sources of chemical raw materials but as honey-producing, fiber-producing, medicinal, and insecticidal plants, etc.

Many goldenrods can furnish rubber. The fragrant goldenrod can furnish, in addition, an essential oil; and its flowers, a good yellow dye. Its stem can probably furnish paper pulp, and possibly a cordage or other fiber. No one single product can make goldenrod commercial, but worked for the four products in conjunction, its economic possibilities are greatly enhanced.

Oklahoma has golden opportunities in its wealth of flora, but to "wake the sleeping beauty" will require more than money—the vision, patience, intelligence, organization, time, and cooperation of all its citizens.
