BOTANY

NATURE RAMBLINGS

by Frank Thone

Woodland and Desert

➤ PEOPLE from the East, spending their first spring season in the Southwest, are apt to exclaim in wonder over the similarity between the spring flower populations of the woodlands they have known and the desert they are visiting. After the winter rains cease and the land begins to warm up, there is a brief flaming of delicate floral beauty among the gnarled stems of the chaparral and the spiny clumps of cactus.

The similarity between the spring floras of Eastern woodland and Western desert is the more striking in that even the non-botanist can recognize many old familiar friends; violets and buttercups, blue-eyed grasses and ground orchids, pentstemons and shooting-stars. They are identical genera, sometimes even the same species as the ones "back home." Even where the forms are a bit strange, the general type fits into the picture; the flowers and leaves are thin and delicate of texture, as one expects spring flowers to be. Soon—in a few weeks at most—the glory departs, and by the time dry summer sets in there is no more trace of the spring flora than there is in the summer woods of the East.

This strange-seeming meeting of East and West in spring is not without cause. There is more similarity between woodland and desert than we are likely to recognize without a careful ecological look at the matter. For the moment, the desert is not a desert: there is adequate moisture in the soil to support the delicate temporary plant community that springs up among the harsh-leaved, tough permanent desert vegetation. Similarly, for the moment the Eastern woodland is not the "humid" region it is commonly declared to be in the school books: before the leaves on the trees develop to full size and form a closed canopy, evaporation rates in the woods are quite high. Thus for a short time environmental conditions in woodland and desert come close to each other, with the soil supplying plenty of water and the air removing it rapidly, and with plenty of sunlight reaching the small plants beneath both trees and chaparral. Since the two environments are temporarily somewhat similar, it is not remarkable that the plants themselves show a considerable similarity.

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CHEMISTRY

Oil Wastes in Streams

➤ STREAM pollution from oil refineries has greatly decreased in the past decade due to activities on the part of the industry to obtain complete use of chemicals formerly wasted, and the pressure of federal and state laws designed to keep the water of the streams pure for human and wildlife protection.

Twenty-five years ago the prevention of stream pollution, to most refiners, meant preventing objectionable amounts of oil from leaving their plants with the waste water, the American Petroleum Institute was told in Houston, Texas, by L. C. Burroughs and R. W. Carnahan of the Shell Oil Company. By-product and spent chemicals are now important polluters.

Chemical pollution became greater with the expansion of the oil industry and the development of new products and new processes which necessitate the use of additional chemicals in large quantities. Greatly increased volumes of sour crude oils are being processed and these require comparatively heavy chemical treatment.

The scientists discussed the effects of pollutants on surface waters, and described procedures and equipment used successfully for disposing of refining chemicals. These include caustic soda, sulfuric-acid sludges, phenolic wastes, hydrogen sulfide, spent catalysts, mercaptans and sulfide-bearing waters.

Three chemists of the Socony-Vacuum Oil Company, of the Augusta, Kans., division, F. M. Faulconer, D. L. McCann and H. L. Bedell, presented a method of partial conditioning of petroleum-refinery effluent for re-use and disposal as applied in the operation of a skimming and cracking plant.

The process involves collection, cold process-water treating and filtering, plus other treatment to remove all evidence of oil and most of the other contaminants. The result is water with little odor which contributes no deleterious effects to the local surface-drainage streams.

A new oil separator for refinery wastewater disposal was described by G. E. King of the Standard Oil Company, Cleveland, Ohio. It includes a distribution chamber and 20 final chambers. Between are submerged sluice gates and full-width weirs. The separator is equipped to collect, transfer and settle separated oil and sediment.

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