

worthy of note in this connection is the fact that plants of this genus are among the few Leguminosae the seeds of which are provided at maturity with an endosperm, and are therefore described in most systematic works as albuminous. This endosperm is reduced, in the ripened seed, to two horny, translucent layers parallel to the cotyledons, joined together by a small piece which forms a collar about the caulicle.

From the physiological point of view the green branches of plants in which the leaves are very much reduced, or absent, are so much leaf surface, just as in the cactus, which is entirely devoid of functional leaves, the green tissue supplies their want. Therefore we may regard the green bark of the palo verde as so much leaf surface. A transverse section cut through one of these twigs shows a highly organized system of green cells,

having an arrangement quite similar to that found in the leaves of many plants exposed to strong sunlight, as they are in the desert. The stomata are similar in type to those of many cacti, being immersed below the surface, each at the bottom of a pit. Although the twigs are slender and easily bent and so give readily to the wind, they are nevertheless very strong and tough, almost like strands of leather. This is accounted for by the presence of so-called bast, which in this plant is peculiar in that it traverses the pith longitudinally. This, however, is supplemented by similar strands found in the rind.

All three species are well worthy of cultivation, although I believe that the long-leaved species is the only one which has thus far been introduced into cultivation and is known throughout the most of the warm regions of the earth.

AMERICAN FORESTRY HONORED ABROAD

Forest Service Becomes a Member of the International Association of Forest Experiment Stations

THE Forest Service of the United States Government is to become a member of the International Association of Forest Experiment Stations. Other countries represented in the association are Germany, Austria, France, Italy, Russia, and Switzerland—the leading countries in the practise of scientific forestry. The purpose of the association is to standardize experimental work generally, so that the methods of investigation in each country will be uniform, and to collaborate in researches affecting two or more of the countries interested.

That the Forest Service should be able to enter this association on equal terms with the European countries through whose researches, conducted for many years, a science of forestry

has been built up is evidence of the rapid progress we are making in this science. Material development and the practical problems which it has presented have absorbed most of our energies, and our contribution to the world's progress along scientific lines has been in the field of invention and applied science rather than in discovery and research.

The science of forestry has until very lately been altogether foreign to us. It is hardly ten years since the first attempt to introduce scientific forestry upon American soil was made, and the opening of the Cornell School of Forestry in 1898 was a pioneer step in American education. Nor was it possible in this field to import a developed science and start abreast of Euro-

pean investigators by borrowing their results. Both the natural and the artificial conditions which determine forest utilization are so different from those found abroad that a new science had to be built up from its foundations.

Americans may well feel proud of the rapid progress made. That such results have been secured is primarily due to the liberality and foresight of Congress, which has steadily supported and provided for the work by increasing appropriations as success has been attained and capacity for expanding usefulness has been proved. The country is fortunate in the outcome, for it is now in position to utilize wisely one of its greatest resources and to do what may be done to avert the national peril threatened by forest destruction. We have now a science and practise of forestry based upon American conditions, and are ready to enter upon the stage of higher scientific research with the other nations represented in the International Association.

Affiliation with foreign workers will materially aid us on the way toward further goals. Better and better methods of practical management can be devised as knowledge of the underlying scientific problems becomes fuller. The United States will profit also through the criticism of its published results by the older and more experienced foresters of Europe, since a part of the plan of co-operation is the mutual exchange and discussion of forest publications. The conventions of the association will give opportunity for the discussion of international problems, for personal contact with foreign leaders, and for promoting the feeling of fellowship among workers in a common field which helps to draw the whole civilized world together.

Foreign forestry will profit from our investigations, because no other country has so wide a variation in climate or such a wealth of forest flora as America. As we advance in knowledge of silviculture we shall place at the disposal of Europe facts which

may well prove of importance for the management of European forests. New species will doubtless be made available for commercial use abroad, the vexed problem of the influence of forests on climate should be brought toward solution, and new methods of practise will be brought to light.

Official recognition of the progress achieved in experimental forestry in the United States was made in the invitation extended to the Forester by Dr. A. Bühler, Director of the Royal Württemberg Forest Testing Laboratory at Tübingen, Germany. In his letter Doctor Bühler said: "In inviting the United States to join the association I am but expressing the general desire. You have accomplished so much and have taken so capable a hold on investigations that the work of the association would be furthered by your membership."

The Forester's letter of acceptance, approved by the Secretary of Agriculture, is in part as follows:

"The Forest Service has always been deeply interested in the admirable work of the European experiment stations, which have been such an important factor in raising forestry from pure empirics to the position of a true science. Our own problems, though exceedingly vital to us, have until recently had only a limited, local interest, and for this reason I thought best to refrain from participating in the general scientific work of the International Association. Now, however, a number of wood-testing stations are well organized, other laboratory work is well under way, and the 127,000,000 acres of forest reserves with whose management the Forest Service is charged offer opportunities for many investigations which may contribute to the progress of our science.

"I shall therefore be very glad to have the Forest Service of the United States Department of Agriculture become a member of the International Association of Forest Experiment Stations, and promise as active participation in its work as circumstances will permit."