It should be added that asparagus, to be at its best, must be gathered only a few hours before it is cooked. In most cities and towns there seems to be an unlimited demand for asparagus, fine, medium, and even poor. Still good fresh specimens always command a much higher price than small wiry ones, or than asparagus brought from a distance.

The general ignorance which prevails in this country with regard to trees, and especially with regard to the simplest phenomena of their lives, is always a matter of surprise to the few persons who study the different phases of tree-life and look on the trees they pass in their daily walks, or in longer journeyings, as old friends and companions. We recall the instance of a person of more than ordinary intelligence and cultivation, possessing the instincts of a naturalist, shown in an unusual love of animals and in a fondness for studying the habits of bees, ants and other insects, and who, moreover, was bred in the country. This person, when past middle life, learned for the first time that Oak-trees had blossoms and that the cones of the Spruce had grown from flowers. Trees had been taken as a matter of course, and passed by year after year without a thought bestowed upon the secrets of their existence. The individual flowers of the Oaks and Walnuts, the Beeches and Alders, the Birches and Hornbeams, the Pines and Spruces, had never been seen, and the beauty of their marvelous structure had never been so much as dreamed of.

That ignorance of this sort is not unusual is shown by the fact that we find in common use the terms "flowering trees" and "forest-trees" employed as if some trees, like the Apple or the Locust, produced flowers and others growing in the forest did not, and this by authors from whom better things might naturally be expected. All this only goes to prove that we in America need more instruction about our trees than we are in the way of obtaining. Some accurate knowledge of the common trees which surround our homes and make up our forests should form part of the mental equipment of every educated man and woman. Knowledge of this character adds immensely to the pleasures of life. Once gained it is never lost; and the field is never exhausted, for there is always something new to learn about a tree.

This is a subject of wide-spread and practical importance. Trees collectively, that is when they form forests, have an important influence upon the destiny of the human race. Americans are destroying their forests with a recklessness unknown to any other people. This recklessness is the result, in a large measure, of ignorance, and if the value of our forests is ever really understood it will be through the intelligence of the individual trained to appreciate them. How can this intelligence, which, if once acquired, will, perhaps, eventually make the protection of forests possible through wise and far-seeing legislation, be developed? There is certainly no more practical way to begin than by teaching the children of the country something of trees. Knowledge in such matters, especially if acquired early, begets affection, and affection for the individual tree as a tree once fixed, it will be a comparatively easy matter to build up in a community, trained from childhood to love trees, an intelligent interest in the forest in its practical relations to humanity.

Field Notes from the Colorado Desert.

On the 15th of September I left San Diego by rail for Yuma, Arizona, to make botanical collections in the region generally known as the Colorado Desert, in south-eastern California. At Yuma I found that the season had been slightly drier than usual, and there was scarcely any vegetation except along the banks of the Colorado River. I had the pleasure of experiencing one of the heaviest rains of the season, a brisk shower that lasted about half an hour, accompanied by considerable wind.

Opuntia tessellata was fruiting on the hills near Yuma, and I have since found it in various portions of the desert. The fruit is small, dry, with comparatively few large seeds. This and one or two other species of the same genus were the only Cacti seen on either bank of the river, except a few transplanted in gardens and a single beautiful plant of Mamillaria, found on the sandstone hills south of Fort Yuma, in San Diego County, California.

From El Rio Station, on the Southern Pacific Railway, I walked southward over the hills bordering the Colorado River to Hanlon's Ranch, better known in former times as Hanlon's Ferry. The old station-house, on a rocky bluff at what was once the ferry landing, is now over a mile from the river bank, the river having cut its way to the eastward. This new-made land is subject to an annual overflow and is extremely fertile. It is grown up to a forest of Cottonwoods, Willows and Mesquite-trees of magnificent proportions, and the growth of underbrush and other vegetation is very luxuriant.

Mr. Hall Hanlon, one of the few remaining pioneers of early days, since the advent of the railroad has turned his attention to stock-raising and horticulture. He has been the first to demonstrate the practicability of cultivating the Date in the Colorado Desert. In 1884 he had fully a hundred Date-trees nearly ready to bear, but, unfortunately, an overflow of the river on his land and a combination of other disasters, nearly destroyed them. The Date comes into blossom in five years from setting on his ranch, and he had a supply of fruit in eight years from the planting of the seed. He has two varieties in bearing now, one with large yellow fruit, and a smaller kind with beautiful, rounder, reddish fruit, which at the time of my visit hung in tempting clusters from the trees. Hundreds of offshoots from his trees he has planted out, and in a few more years he could have one of the most profitable and novel of California orchards, or fruit ranches as they are generally called. Other experiments in the culture of the Date were soon to be made near Yuma, Arizona, in the Gila River Valley, which is very aptly called the Gila Desert to distinguish it from the Colorado Desert that lies west of the Colorado River.

Traveling westward from Fort Yuma I found an almost unbroken, barren plain, destitute of verdure until near Indio, in the north-eastern portion of the region. In the Cargo Muchacho Mountains, where several gold mines are being developed, I found it equally uninteresting from a botanist's point of view, except where the "tailings" and waste water from the quartz mill were allowed to flow. A few grasses, one or two introduced weeds and a number of wild flowers—several new to me—were thus caught out of season.

Indio, and the section of the desert to the westward, is probably the best known portion of the region as far as its botanical resources and horticultural possibilities are concerned. The Washington Palm-trees, on the open plains and on the sides of the mud hills to the northward, form one of the most interesting features in the landscape, since the Californian Fan Palm elsewhere is of a more retiring disposition, seeking the seclusion of rocky and almost inaccessible cañons. Some of the Palms grown in the grounds around the railroad hotel at Indio are of most luxuriant growth—a single leaf almost sufficient to shield a standing man from observation!

On the 1st of October I again set out for the southern borders of the desert with a two-horse team. The reports of the great overflow of the Colorado River, through the New River section, had been confirmed by reports received at Yuma, and it was with a view of securing the consequent vegetation that I undertook this trip. It has been six years since the last great overflow occurred, in 1884, and the chance offered by the June and July overflow was one not to be neglected. La Laguna Maquata, a shallow basin just south of the United States boundary, usually dry, was also reported full of fresh water from the same overflow, and said to be teeming with fish. No water has been known in this lake since 1884 either, and here was another opportunity.

At Mountain Springs we filled all our water-cans, fearing that this might be the last good water we should find, and it proved fortunate that we took the precaution. At Coyote Wells, fifteen miles distant, we found the water unfit for man or beast, but by digging a new well we were able to secure a limited supply of strong alkali water, which we ventured to give our horses. The only feed was some Gietta Grass, about two miles distant from our camp. Proceeding in a southerly direction from Coyote Wells we traveled over a sandy, rolling country to a point in the Maquata Basin between the Cocopah and the main peninsula-range of mountains. The western shores of the lake were dry and strewn with millions of fresh water shells, which encouraged us to expect to find some fresh water. Along the sandy arroyo leading to the lake were numerous beautiful Ironwood-trees, fifteen or twenty feet high, and nearer the shores of the lagoon were bush-like clumps

of Mesquites, around which the sand had blown into mounds or small hills. Nearer the lagoon the Mock Willows (*Pluchea borealis*) gave evidence of fresh water, which could, doubtless, have been obtained at less than twenty feet by digging. *Sesuvium portulacastrum* and a few other saline plants were also very abundant; but these comprised nearly the whole of the vegetation discovered along Maquata's shores.

A beautiful mirage led us away from the actual water, and upon learning its delusive character we became skeptical as to the existence of water in any part of the lake. Although I had often seen this phenomenon on the desert I had never before been led astray. In the evening, however, we were enabled to distinguish the true from the false, and found that the eastern part of the lake, for many miles to the southward, actually contained water. On the mesa west of the lake we made our camp, about three in the afternoon, where there was an abundance of Gietta Grass (*Hilaria rigida*) for our horses. Leaving my companion to care for the team, I started on foot to search for water in the cañons leading down to the desert from the main range of mountains, but failed to discover any up to seven o'clock, when it became too dark to proceed, and I was reluctantly compelled to retrace my steps as best I could. My landmarks, the mountains, were soon indistinguishable, but taking my bearings from the stars I got back to camp soon after eleven o'clock after an eight hours' tramp.

Before sunrise in the morning we were again en route to the lake, and after two hours' travel arrived near the edge of the water. With difficulty I reached the water through the soft mud, and found the water so shallow at that place that I had to dig a small hole before I could dip up any to taste—and then I found it to be nearly as salt as brine!

With our water supply nearly exhausted, the temperature at 105 degrees Fahr., and thirty miles from any sure source of water, we considered it only prudent to return to Coyote Wells while we could. For two days our food had consisted mainly of hardtack, and on our return to Coyote Wells the wind prevented our cooking a good meal until the following afternoon.

From Coyote Wells we have moved to Dos Cabesas, where there is an abundance of water, and we are partially sheltered from the wind and rain. It is necessary to pile rocks on the blankets to keep our bed from blowing away with us, and the wind blew my loaded wagon a considerable distance during the night. The sun is shining brightly as I write, but before I finish this sentence the black clouds hanging over us to the westward will have flung us in the shade again. From tropical heat we now find a fire-place a comfort.

Whether reports concerning New River are equally as trustworthy as those relative to Lake Maquata we hope to decide later, but it is necessary to haul water for fifty miles at least to settle the question, and to be prepared to return if we do not then find it. These are some of the pleasures of botanical exploration in our great arid regions.

Dos Cabesas, Colorado Desert. *C. R. Orcutt.*

Lumbering in Michigan.

SIXTY years ago Michigan was almost entirely a wilderness, and a good portion of it was covered with virgin forests. Nearly all of the southern half of the southern peninsula abounded in deciduous-leaved trees, while north of this were large tracts of Pines and other conifers, or a forest of conifers and deciduous trees mixed in varied proportions, or there were some large areas consisting entirely of deciduous trees.

The pioneer, finding no market for his timber, used a small portion only of the very choicest for his limited needs in building and fencing. He cut and burned, hewing for himself a home out of the forest, making room for cultivated fields in place of trees. Gradually, but slowly, a market was found for timber. At first, only the best cuts of the choicest trees could be sold at any price. In southern Michigan, about the year 1850, I drew for my father many loads of the choicest clear stuff of Whitewood or Yellow Poplar (*Liriodendron Tulipifera*) fifteen miles, where it was sold at $5 per 1,000 feet, and the pay taken in goods at a country store. Even this market was limited, and was found in the Oak-openings. There was not much money in lumbering in those days. The trees, though, had to be got out of the way and made to bring what they would.

It was scarcely more than ten years later (1860) that in the same region farmers had nearly ceased burning log-heaps and had begun to make use of all the timber taken from new land for lumber, rail-fences, fire-wood for themselves or their neighbors or for the nearest village or railway. This was in a country long since noted for its good land and prosperous farmers. In fact, Lenawee County, Michigan, is known to be one of the very best "all-round" counties in the United States for diversified agriculture or mixed husbandry.

In newer portions of the state, many parts of which for some reasons were less suited for agriculture, the removal of the timber has been at a much slower rate. It is now as rare a thing as it was common once to see Hemlock-trees felled and left to rot or burn on the ground, simply to secure the bark for the tannery. The hard wood is now, in 1890, nearly all saved, even in the least settled portions of the state, for lumber, for the railroad or for charcoal. Still there are a few places, remote from market, where the tops, butts and deformed sticks of soft wood or hard wood are not very closely used up, but are allowed to decay on the ground.

When good farming land, or poor land that is covered with desirable timber, has once passed from state control the owner feels that something must be done with the timber very soon to prevent a losing investment. It has usually been the experience of Michigan men that it has not been profitable to hold timber for higher prices, and few people will attempt to hold it simply for the good of the township or state or for posterity, under such circumstances. Had a much larger proportion of the timbered land been held and protected by the Government for a longer time the state would have been much better off in the end. Less timber would have been destroyed, the land that was improved would have been better worked at a greater profit. This is a lesson which should be heeded in the more recently settled portions of the country.

There is too much risk from fire in most places in Michigan to make it wise to hold for a very long time any large amounts of land covered mainly with evergreen trees. Where there are a few evergreens mixed with forests of deciduous trees the risk is very greatly reduced.

The illustration on page 563 shows what remains after fire, following the axe, has run through the woods and consumed the smaller branches. Sometimes the logs are brought together in heaps and burned, or allowed to gradually disappear by a combined process of decay and repeated burning.

Agricultural College, Mich. *W. J. Beal.*

The Lakeside Daisy.

AN interesting item in the botanical record of the season is the finding in Ohio of an Actinella, which seems to have strayed away from its home in the west. Mr. Clarence M. Weed, of the Ohio Experiment Station, gives the following account of the matter, which we take from the *Journal of the Columbus Horticultural Society*. Accompanying the article is a good figure of the plant, *Actinella acaulis*, from a drawing by Miss Freda Detmers.

Early last May while collecting botanical specimens in northern Ohio, on the limestone plains of the Sandusky Peninsula, near Lakeside, I came across many large patches of a very pretty bright yellow flower, which formed by far the most striking element of the local flora. It proved to be *Actinella acaulis*, Nuttall, the ordinary home of which, according to Gray, is found on the "Rocky Mountains and bordering plains and hills, Dakota to Montana, and south to New Mexico, western Nevada and Arizona."

Not only is this particular species a western form, but Actinella as a genus is essentially western. Its representatives occur especially in the rocky prairie and mountainous regions of the extreme western states: Dakota, Montana, Colorado, Texas and New Mexico are the homes of many species. According to Gray's "Synoptical Flora" the only known occurrence of a member of the genus east of the Mississippi River is that of *A. acaulis*, variety *glabra*, which was found many years ago on "an ancient mound at Joliet, Illinois," and its occurrence was said to be "probably adventive."

In northern Ohio *A. acaulis* is thoroughly established, and evidently finds on the barren limestone plains, with their two or three inches of soil, a congenial habitat. Dr. C. E. Bessey tells me that in Nebraska it occurs in a somewhat similar situation, being found on the rocky buttes where there is very little soil.

No one about Lakeside, so far as I could learn, knows anything about the time the plant was introduced. The only reply to my question as to how long the plant had been there was that it had been noticed as long as the speaker had lived there. I have found it nowhere in the region except about Lakeside. The Lake Shore Railroad is about ten miles south of the place and a branch road now runs up. But the latter has