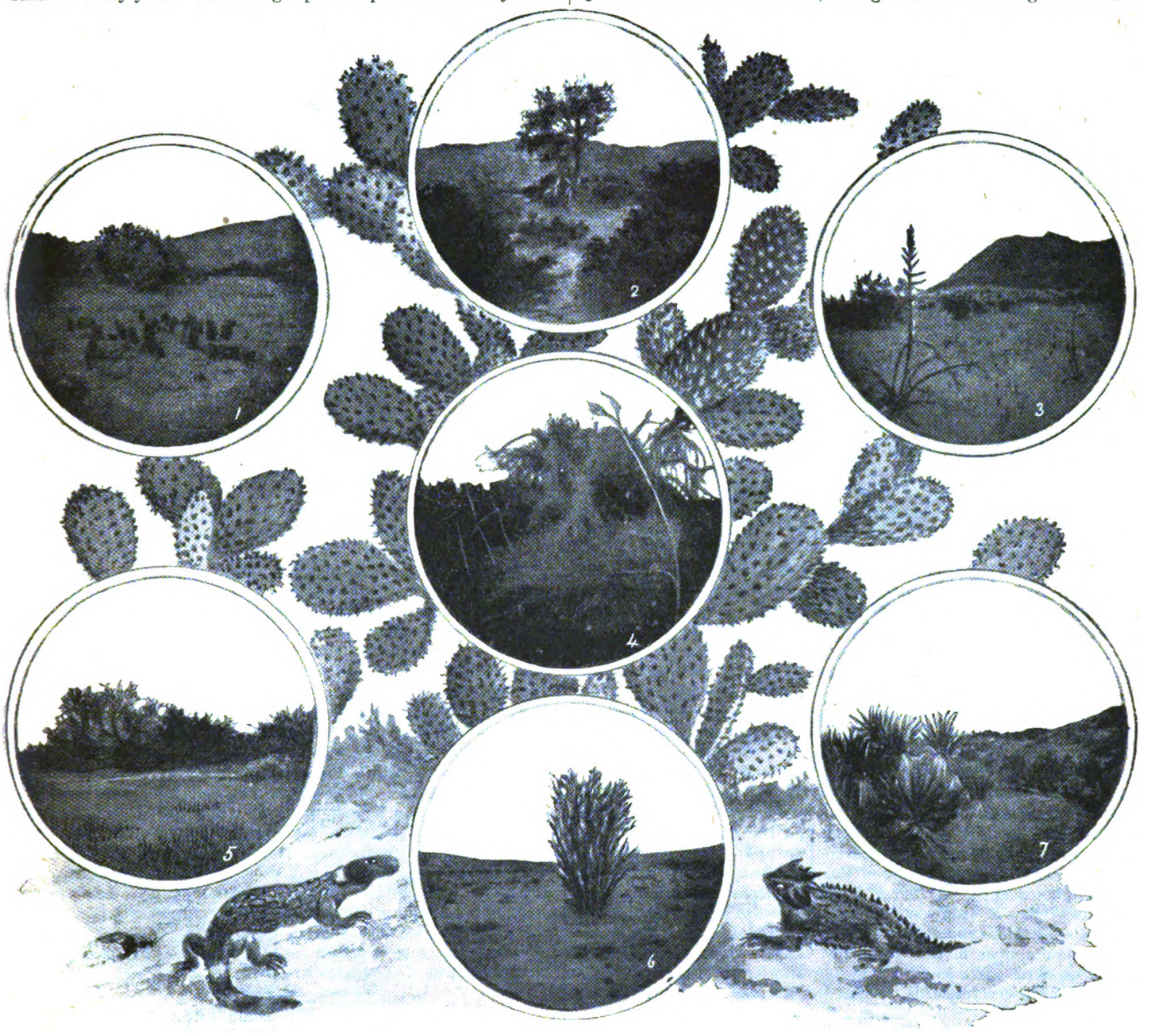
THE COLORADO DESERT.

C. R. ORCUTT.

The arid lands of the Southwest furnish the agriculturist some interesting problems for solution. Approaching California by the "Sunset Route," one passes through a weird country that one cannot well appreciate without seeing. At Yuma, Arizona Territory, the "Big Muddy of the West," El Rio Colorado, is reached and crossed, and the traveler enters that almost mythical region known as the Colorado Desert. For miles the train passes drifting mounds of sand of snowy whiteness, fairly blinding in the glare of a bright sun, and here it is no idle boast that there are "fourteen months of sunshine every year." Even longer periods pass without any rain.



VIEWS OF COLORADO DESERT SCENERY.

At Salton, the bed of the ancient arm of the Gulf of California is reached, this little station itself being 250 feet below the sea level. The water marks of the ancient shore line may still be easily discerned, following along the base of the adjacent mountains. Portions of this depression are 300 feet below sea level, and, until 1890, the whole was designated as the Dry Lake. In 1890, the overflow of the Colorado river again reached this basin, and converted it, for a time, into a broad, shallow lagoon, which has become famous as the "Salton Sea." Indio, a little further west, is a railway eating station, and is twenty feet or so above sea level. The soil is rich and deep, having been almost wholly formed by the sediment deposited by former overflowings of the Colorado river, which, forty years ago, according to old emigrant traditions, was a frequent, if not an annual, occurrence. Fifteen miles to the southwest lies the base of the main mountain range, while about five miles to the north is the low range of barren hills, an extension to the southeastward of the San Bernardino range, and of an especially forbidding aspect. At the base of these hills, on a little bench, or ridge, from which a few alkaline springs contribute small streams to the thirsty plain below, is a grove of native palm trees, the California fan palm, *Washingtonia filifera*. On the plain, a few scattering clusters of trees are also growing, in slightly sheltered depressions, where the water rises near to the surface. Around the station building have grown the most luxuriant specimens of this palm that I have ever seen, a single leaf often being more than sufficient to shield a man from observation or from the glaring sun. Other vegetation thrives with luxuriance, when given abundant irrigation and needed protection from the scorching winds that prevail, at some seasons. An orange grove, recently planted, seemed to be thriving at the time of my last visit. In April, the plain was bright with patches of flowering annuals, or scattering shrubs, while numerous brilliant insects practiced deception, frequently palming themselves off as parts of some gaudy flower, and thus seeking to avoid detection. In June and July, the extreme temperature of 140° F. is frequently recorded at Salton, and, in some of the isolated, rocky cañons along the border of the desert, this temperature is occasionally greatly exceeded by radiation from

the rocks and sand. In verity, the Colorado desert can claim to be one of the hottest portions of the earth, in the summer season, exceeding the tropics, even, in the intensity of heat. In the winter, the nights are often cool, and ice is frequently found. Many varieties of fruits arrive at maturity much earlier in this region than on the west side of the mountains. The date comes into bearing at five years. Figs and grapes ripen their fruit earlier in the season, at a period when they can command fancy prices in market, but, as yet, few attempts have been made at this business, as the difficulties now to be overcome are discouraging to a man of small means, and capital is distrustful of the "Desert."

West of Indio, on the Southern Pacific railroad, is a station called Seven Palms, but the seven palm trees are several miles to the north, with small patches of salt grass surrounding the springs, which here rise to the surface on the uneven plain. These springs are now fenced in by enterprising cattle men, who, during the winter, pasture several hundred head of cattle on the surrounding herbage. There is little grass, but a number of shrubby, or suffrutescent, plants furnish forage in abundance during the season, when cattle can survive the climate. During the hot season, or as soon as the bushes become too dry for pasturage, the cattle are driven back to the mountain valleys east of San Bernardino, a journey of two or three days for a horse.

The Seven Palms station stands out on the plain, in a most unsheltered position, and is right in the draft that passes through the celebrated San Gorgonio Pass, that connects the desert with the fertile valley of San Bernardino. The whole year though, almost without intermission, the wind blows here a steady gale. The sand is drifted over the railroad track, and a gang of men is kept constantly at work, at some seasons of the year, keeping the rails clear of the rapidly forming drifts. The men have to work with cloth helmets, to protect their faces from the cutting sand, as it is continually driven by the wind. The window glass on the exposed side is etched, as if subjected to a regular sand blast in a furnace. Tin cans, lying on the plain, are polished in a curious and beautiful manner, while rocks are either polished, or curiously sculptured, and eroded into fantastic forms.

Some of the shrubby plants here were scorched and burned, and often more than half cut in two by the driven sand, still holding a precarious existence in the baked soil underlying the sand. The bark cut away, and the wood burned and blackened on the windward side, it seemed strange that they could still retain a spark of vitality. No annuals seemed to attempt the unequal struggle for life, except in particularly sheltered situations, or among the sand hills, where the full force of the wind could not strike them.

These stray glimpses can give but a faint idea of this vast region. The Colorado Desert comprises nearly twelve million acres of land, much of it, as before said, of surprising fertility. The surrounding mountains are rich in minerals; the New River section is covered with a dense jungle of almost tropical rankness of vegetation, while some of the cañons, filled with palm trees, rival, in grandeur and beauty, the famous Yosemite Valley. The history of the Indian tribes that occur within its boundaries, the traditions and superstitions of this region, are yet to be written. The primitive agriculture of the Cocapa, and the explorations of the many prospectors who never returned, are alike fascinating. [Our illustration presents a number of Colorado Desert scenes, engraved from photographs. 1. Sand Food, *Pholisma arenarium*, near Coyote Wells. 2. Ironwoood tree on the Cocapa Plains. 3. Desert lily, *Hesperocallis undulata*, with buttes in the distance. 4. Gourds on mesquite trees in the New River tangle. 5. Mesquite glades. 6. *Fouquiera splendens*. 7. *Nolina Bigelovii*. Below are the characteristic desert lizards, the Gila Monster, and the Horned Toad.]

ORNAMENTAL SHRUBS FOR AUTUMN EFFECT.

L. H. PAMMEL, IOWA EXPERIMENT STATION.

We have a large list of ornamental shrubs that are beautiful during the spring and summer months; but the number of plants that add greatly to the beauty of the grounds in the autumn is not large. One of the most handsome of autumn plants is the Chinese Barberry, *Berberis Thunbergii*, which is grown more extensively in the East than the West. It is a low-growing plant, not more than three feet high, forming a rounded, compact mass. It has small and thick rounded bright green leaves, making a beautiful object in the summer. The plant is valuable not only singly in the lawn but for low hedges also. In the autumn, however, the leaves change to a light red color. From a distance I have often mistaken the leaves for the bright red fruit. The fruit also hangs on well into the winter. The flowers are small and inconspicuous, borne singly in the axils of the leaves. None of the other species of Barberry are as pretty, with the possible exception of the purple leaved form of the common Barberry of Europe, *Berberis vulgaris*. While many species of Barberry on the College Grounds at Ames are affected with the Cluster Cup Fungus, *Æcidium berberidis*, the *Berberis Thunbergii* is free. The shrub is easily multiplied from seed.

Another beautiful shrub is the East European form of the common Privet, *Ligustrum vulgare*, which produces its white fragrant flowers in late summer. In the autumn it contains numerous clusters of blue fruit. The chief interest in this connection is that the privet holds its green leaves well into November, long after most plants have lost their foliage.

Two other plants are especially desirable for winter and fall ornamentation; both belong to the Staff-Tree Family, or *Celastraceæ*, a small order of plants represented in North America by only about twenty to twenty-five species. The Climbing Bittersweet, *Celastrus scandens*, is quite widely distributed along streams in the Northern United States, and has attracted some attention as a cultivated plant. The orange-colored pod and the scarlet axil make it a most striking object during the fall and winter. The plant is imperfectly dicecious. So in selecting plants the pistillate should be sought, or to secure full fertility both staminate and pistillate plants have to be grown.

Related to the above plant is the Strawberry Bush or Burning-Bush, Wahoo, *Euonymus atropurpureus*, Jacq.—a common plant in the Northern States—the axil of which incloses from one to four seeds in each cell, and which, as well as the fruit, is bright red. The species has enjoyed some reputation as an ornamental plant, but it should be planted more generally. The closely related *E. Americanus* is not such a common species. It occurs from New York to Illinois and southward. The axil and pod are a beautiful red.

OUTDOOR FERNERIES.

MARTHA C. RANKIN.

If the people who object to weeding and fussing over flower beds, in the hot sun, would devote their energies to ferns, they would be well repaid. Just where ordinary plants cannot live, ferns and their wood-friends will grow and flourish. Many a damp, shady corner of the yard, which is now an eye-sore, may be turned into an eye-rest by the introduction of a dozen thrifty roots of ferns and their neighbors; for the plants which grow side by side in the woods may be safely transplanted together. Indeed, with every fern taken up there will come also either seeds or roots of several other plants, most of which may be trusted to grow and thrive. The hepatica, wind flower, partridge berry, pitcher plant, lady's-slipper, Jack-in-the-pulpit, and many other common plants will almost surely live and blossom, and will add variety to the bed.

To ensure perfect success with ferns, have a load of wood-soil or leaf-mold carted to the spot intended for the bed, before transplanting the roots. But if this is not practicable, do not be discouraged, as ferns, if well watered, will grow, though they have no more wood-soil than was taken up with their roots. One plant is sufficient for a beginning. Get that, and you will soon be so interested in its growth that you will want to add many others. Interest the whole family in the fern bed, and let each member contribute something; then all will enjoy it, with a sense of ownership, and there will be no difficulty in getting it filled. Whatever dies may easily be replaced; but with a little care and judicious watering, most of the plants will live and thrive.

BUDS AND BLOSSOMS.

However beautiful your surroundings may be, flowers will enhance their beauty.

Do not say you cannot afford to have flowers in your garden, rather say you cannot afford to be without them.

Do not buy cheap seeds; buy good seeds cheaply if you can. But bear in mind the best is always the cheapest, at any cost. Merit is the result of work.

A row of cannas in the back yard makes a beautiful screen. The plants take up no more room than burdocks, and they are a far better investment than fences.

The finest bed of flowers we have seen last summer was the result of a paper of single dahlia seed sown in the hotbed, and the seedling plants transferred to a carefully prepared border in June.