

Correspondence.

The San Diego Shake-up.

To the Editor of the Scientific American:

This city has been treated to a series of earthquake shocks so frequently of late that the condition is regarded as almost chronic. Near midnight February 23, the first shock, lasting 70 seconds, cracked walls of buildings, and people were thoroughly frightened. Six or eight more shocks were felt that night, the second shock occurring just thirty minutes after the first one. Nearly every night since there have been one to three slight shocks. So severe was the first shock that the undulations gave many all the feelings of seasick patients. Along the Pacific coast, from Mexico to British Columbia, slight shocks were felt, especially in Oregon and Washington.

B.
San Diego, Cal., March 2, 1892.

Bear Grass.

To the Editor of the Scientific American:

I take the liberty of inclosing to you a sample of fiber from a single blade of bear grass, which grows in quantities here and is susceptible of easy propagation. Please write what your opinion of the fiber is, and if its cultivation and preparation might be made profitable.

ARTHUR SHERRY.

Fayette, Miss., March 9, 1892.

Reply by Prof. C. V. Riley.

The bear grass mentioned by Mr. Sherry is the common *Yucca filamentosa*, grown in the North as an ornamental plant under the common name of Spanish bayonet or Adam's needle. Its fiber is fairly good, but not as strong as certain other fibers. It has not been grown commercially, and is not equal to ramie or sisal.

Occupation for Old Age.

To the Editor of the Scientific American:

In answer to your correspondent, John W. Blinn, "Occupation for Old People," I would suggest, if possible, get twenty acres of land and learn to cultivate the soil. I should rather have twenty-five acres of land in central Illinois to raise a family than to be the best mechanic in Chicago.

Working on land where nature blooms and blossoms should be a pleasant occupation to an old man who has not lost his physical powers.

All this talk about the poor farmer, his hardships, discontent, and unhappiness has filled the public mind with the thought, "Anything but a farmer's life."

Let a man walk around New York and see families living in one room, seeing the children play on the stone sidewalk, half naked, their bare feet never touching a blade of green grass. He must feel that a child born on a farm is blessed in the start.

My advice to a mechanic: Save a portion of his wages, so when old age drew near he could own a small farm and be an independent man.

SAMUEL W. ALLERTON.

Chicago, March 7, 1892.

Sugar in Mortar.

To the Editor of the Scientific American:

Having devoted nearly thirty years of my life in all quarters of the world to the study of limes, cements, asphalts, "natural and artificial," I desire to contribute a few words on the subject of "sugar in mortar," referred to by your correspondents. Saccharine mortar is not new, having for many years been used in the interior of India. It is there composed of lime "carbonate" and clay brought to a powder, well burned, and mixed with a sand of a silica character. For mortar it is tempered with a mixture of water, to which is added molasses, with the object of preventing a too rapid setting of the aggregates in that torrid climate, as retarding the drying gives much greater ultimate strength. For rendering of walls and ceilings they calcine shells and limestone, reducing same to powder analogous to our cements. This is mixed with water and a sap of the character of sugar, which is extracted from the palm, and a proportion of short jute or tow. The cohesion of this material is very great, and it becomes sufficiently hard to take polish.

J. FOTRELL,

Inventor and patentee of hygienic concrete.

New York, March 18, 1892.

Red Bud and Cut-worms.

To the Editor of the Scientific American:

I have on my place what is called red bud or leather wood, a bush about four and one-half inches down and growing in bunches. Could you give me any receipt for killing that shrub, as it is so tough an ax has no effect on it? And a receipt for killing or ridding cut-worms from the garden ground and not injure the young plants, etc.

A. C. FREELAND.

Anderson, Shasta Co., Cal.

Reply by Prof. C. V. Riley.

The California red bud of which Mr. Freeland writes is congeneric with our Eastern red bud or Judas tree, and is known to botanists as *Cercis occidentalis*, Torr.

I am afraid that Mr. Freeland has exaggerated a little in saying that it cannot be cut with an ax, although I am aware that it is very tough. I regret that I cannot suggest any way of ridding his land of this plant except by systematically cutting it out.

His question as to ridding garden ground of cut-worms is more easily answered. The plan which I originally proposed in 1882, and which has become known as the poison trap or bait system, has come into extensive use and is very successful. It consists in cutting grass, weeds, or any green growth in the early spring, doing it up into loose bundles, and thoroughly spraying with Paris green. These bundles are then scattered at regular intervals through the infested fields. This should be done in early spring, before the crop is set out or has come up. The cut-worms will feed upon the poisoned vegetation and will be destroyed in great numbers.

A Volcano Near the Gulf of California.

To the Editor of the Scientific American:

Prospectors recently returning from the southeastern part of San Diego County report a distant illumination of the heavens by night and an inky black cloud by day, seemingly in the vicinity of the confluence of the Colorado River and the Gulf of California, where there is an unfrequented country, wherein the Cocopah Mountains are said to present many phenomena, among them being mud springs and hot sulphur streams. These reports come from several sources, and indicate the existence of an active volcano. As the earthquake shocks in the latter part of February were most severe in the direction of the country where the volcano is supposed to exist, it is possible that the subterranean disturbance found vent there. A rancher in the Campo country says he was in the desert many miles east of Campo looking after cattle about the time of the earthquake. His horse stumbled on the edge of a crevice in the earth, some 18 inches wide. The rancher says the crevice was recently formed, evidently caused by the earthquake, and apparently bottomless. In many places the surface of the earth was broken. In a deep canyon through steep walls of rock, where the old Yuma stage road passes to the desert, the road was completely blocked by masses of rock which had been rolled down on to it.

M. Y. B.

San Diego, Cal., March 12, 1892.

A Florida Phenomenon.

To the Editor of the Scientific American:

I arrived here about six weeks ago and have since visited on several occasions the most rare and peculiar phenomenon.

There is a prairie within three miles of this place that is fifteen miles in length, with an average width of five miles. Twelve years ago it filled with water to a depth of 8 to 20 feet, varying according to high and low ground.

This water stood undisturbed for this twelve years space of time until last August, when it suddenly disappeared entirely in two days, leaving two small holes of water, not exceeding ten acres area, and a few ponds here and there of sizes too insignificant to mention.

The soil here is principally sand underlaid at varying depths by very soft sand and limestone. There is some flint at great depths.

Near the location where the water is thought to have made its exit the country is literally dotted with deep holes, varying from 10 to 40 feet in depth; the sides are steep and precipitous. These holes are commonly known here as sinks, and are sometimes formed in a single night.

For days after the escape of the water from this prairie the stench of putrid fish was intolerable.

The farmers hauled them off in wagons for fertilizers.

On the prairie anywhere turtle shells can be seen, with here and there the skeleton of some unfortunate alligator that has been killed by some marksman or by some stray hunter.

HARRY BOMFORD.

Gainesville, Fla., March 8, 1892.

Californian Agriculture.

To the Editor of the Scientific American:

In the SCIENTIFIC AMERICAN for December 26, 1891, Mr. J. E. Emerson says that in 1853 agriculture in California was but in swaddling clothes. This babe has grown amazingly, and is even now a prodigy for which maturity promises much. In 1877-78 the wheat acreage in this State was 1,800,000 acres and the yield 16,000,000 cents. In 1890-91 the acreage had increased to 3,300,000 acres, yielding 30,000,000 cents. In 1878 new wheat at tide water sold for \$1.70, and in 1891 for \$2.02½. More than one-fourth of the entire barley crop of the Union is raised in California, the national product being over 16,000,000 bushels. The corn crop of this State is 5,000,000 bushels. Beans are now a California specialty. She leads the world in producing lima beans. Last year 50,000 tons were harvested, and solid train loads of beans were sent East for consumption in Boston and elsewhere. The ground is so dry that poles are not needed to keep bean vines dry. This saves 50 per cent in the cost of production, com-

pared with the cost elsewhere. Nine-tenths of the bean crop is grown without irrigation.

The first attempt to make beet sugar in this State was at Alvarado, in 1869. In 1888 a second beet sugar factory was established at Watsonville, Santa Cruz County, and in 1891 a large establishment opened at Chino, San Bernardino County. The United States government has paid these concerns a bounty of \$162,000 for one year's output. The saccharine percentage of California beets is 16 to 17 per cent, while the best European beets average 12 to 14 per cent. As to the possibilities of sugar beet culture in California, Professor Hilgard says there are 190,000 acres in Alameda and Santa Clara counties well adapted to this culture, each acre of which can readily produce 4,000 pounds of refined sugar. This would give a possible production in two counties alone of 760,000,000 pounds. The experience at Chino proves that there is a large area in the extreme southern part of the State which is well adapted to beet culture. California is the largest contributor to the 62,000,000 pound honey supply of this country. From one hive here 600 pounds of honey was taken in a single season. Records of 300 or 400 pounds are not uncommon. Experiments are being made in growing tobacco, cotton, ramie, flax, silk, and hops. Those who have raised it say that California tobacco is equal to any. The production of ramie and the manufacture of fiber and fabrics therefrom bids fair to become an important industry on this coast.

San Diego, California.

M. Y. BEACH.

Leaf-cutting Ants.

To the Editor of the Scientific American:

Would you be kind enough to give me a remedy against cutting ants? We are troubled a great deal by them. They get into our gardens, vineyards, and orchards and strip all plants of their leaves. There are a great many of them here, and want to know what is the best way to get rid of them.

JNO. G. KENEDY,

Alice, Nueces Co., Texas.

Corpus Christi, Texas, Feb. 29, 1892.

Reply by Dr. C. V. Riley, Entomologist, Department of Agriculture.

To the Editor of the Scientific American:

In reply to the letter of your correspondent, Mr. John G. Kenedy, I would state that no systematic investigation or experiments have hitherto been made as to the best of the different remedies against the leaf-cutting ant (*Oecodoma fervens*), and in view of the serious damage constantly caused by these formidable insects the entomologists of the agricultural experiment stations in the Southwest have a good opportunity of experimenting on the subject.

The most important point in the warfare against these ants is to discover their nests, which are large subterranean structures, extending, in powerful colonies, from 10 to 15 feet below the surface of the ground and having several entrance holes. From the latter the ants move after dark along well-defined pathways to the orchard or garden they intend to raid. If the country be open, it is not a difficult matter to follow up the moving columns of the ants with the aid of a lantern, and thus to discover the nest, although the latter is not rarely several hundred feet distant from the tree or vine which the ants defoliate. If, however, the nest is in dense shrubbery, it is usually extremely difficult to locate it. The nest once discovered, its inhabitants can be exterminated by pouring bisulphide of carbon into the entrance holes, say at least one pint in each hole if the colony is large. Should there be no bisulphide at hand, the application of cyanide of potassium dissolved in water may be tried. Pouring kerosene or boiling water into the holes, or building large fires over the nest, are probably less efficacious remedies, but will, no doubt, help to lessen the numbers of the ants, or at least to discourage them for a time from further raids.

During my stay in Texas, in 1879, I witnessed a successful method of protecting a vineyard from the attacks of the leaf-cutting ant. The vineyard of Mr. Kessler, near Columbus, is surrounded by extensive and very dense shrubbery, which was full of the ants. At first these did great injury, but owing to the nature of the ground their nests could not be discovered. Mr. Kessler finally fought them in the following way: Armed with a lantern and a large bottle containing a solution of cyanide of potassium in water, he made every evening the circuit of his vineyard. The columns of ants moving from the woods toward the vines could thus readily be found, and across each of their pathways a strip of about 3 inches in width and 5 inches in length was moistened with the cyanide solution. The ants never went around the poisoned spot, but always attempted to cross it, when they were at once killed by the poisonous fumes. This performance was repeated night after night, except in very rainy weather, and the vineyard effectually protected.

C. V. RILEY.

THE city authorities of Chicago have granted permits to the Chicago City Railway Company to use overhead trolley wires. This will enable the company to provide abundant facilities for the transportation of visitors to and from the great exhibition grounds.