The Striped Cucumber Beetle.

F. H. Hall of the Geneva, N. Y., Experiment Station says:

Poisons can be used with success against these beetles for only a short time in the spring, when they begin to feed; and again, in the fall, against beetles of the new brood. This fall poisoning will succeed only where there is not an abundance of wild fall flowers; for the beetles will desert any poisoned crop for the unpoisoned flowers and will feed upon the flowers to a considerable extent, any how, if they are to be found. Many poisons were tested upon the cucumber fields of Long Island, during 1897 and 1898, including Paris green, laurel green, green arsenite (arsenite of copper) and lead arsenite. These were applied dry, in water, in Bordeaux mixture, and in resin-lime mixture, alone; and in various combinations. Green arsenite, dry, gave best results. It was found a waste of the poisons to apply them in Bordeaux mixture, as the mixture so repelled the insects that they would not eat the sprayed vines to secure the poison. These poisons, applied in water, are liable to burn or stunt the plants. It is necessary, then, if we wish to poison the beetles, to use a trap crop to attract the insects and to apply the poison to this crop instead of to the plants we design to protect.

On small areas it may be advisable to shut in the small plants of the growing crop by the well-known cloth-topped boxes; by the tent-like cloth covers spread over arched hoops or wires; by boxes made from a rectangular piece of cloth and two short 6-inch boards with cleats attached to insert in the soil and hold the boards upright; or even 6-inch wire plate-covers. Covers, however, are too expensive on large areas and they have the disadvantage of frequently making the plants weak so that winds will snap them off or twist and ruin them when the covers have to be removed. If covers are used alone their removal leaves the unprotected vines not only for feeding places but for breeding places for the beetles.

Bordeaux mixture, if thoroughly and frequently applied makes as efficient a protection as the covers, is much cheaper and at the same time protects the plants from diseases. This mixture (1-to-11 formula) should be sprayed upon the cucumbers when they are just well up, again when they show the third leaf and the third time just before the plants commence to form runners. The early application can probably best be made with a knapsack sprayer and later ones by any good pump sprayer. The three applications should not cost $2 per acre.

The Bordeaux mixture is a much better repellant, according to station tests, than kerosene, turpentine, tobacco dust, cow-manure, burdock infusion, slug shot, bug death or any other known compound. Indeed, all materials of this class, supposed to drive away the beetles by their distasteful odor, proved failures when used alone. Air slaked lime, dusted over the vines, will make them unpalatable to the beetles, but the lime is liable to stunt the plants. It may be used, with care, by those whose crop is not large enough to warrant purchase of spraying outfit.

All of these appliances or applications, covers, Bordeaux mixture or lime, merely protect the young plants until they are strong enough to stand the injury from the beetles; they do not kill the insects. To do this, trap crops are needed. As the squash is the beetle's favorite food plant, this vegetable should be planted—in single rows along the margins of small patches, in several rows around large fields—about four days before the cucumbers or melon seeds are sown. When these trap plants are up and the beetles appear about them dust about half the plants with green arsenite, reserving the other half for use if rain or heavy dew makes the poison soluble and kills the vines first treated. The beetles, attracted by their favorite tidbit will feed upon the squash vines and be poisoned by the arsenite. When the cucumbers or melons are up, unless they are protected by covers, spray with Bordeaux, and poison more of the squash vines. When the beetles commence to pair the squashes may be cultivated up, leaving only a few vines for the beetles to feed upon at flowering time, as the insects prefer the squash flowers and will not molest the others.

Beans may be used with some success as a fall catch crop, where wild flowers are not too plentiful. They should be planted on the cucumber or melon fields; and when the beetles leave the old vines to feed upon the fresh bean plants, they should be treated to liberal doses of poison as well.—F. H. Hall of Geneva, N. Y., Experiment Station.

American Grown Tea.—Secretary Wilson has believed for some time that we should grow some of our own tea in the United States and he proposes to convince the people of the south that they can keep in the country and themselves got a good share of the $10,000,000 sent abroad for this article annually. The secretary has just returned from a visit to the tea farm of Dr. Shepard, at Summerville, S. C., where are in cultivation about fifty acres of tea. Last year these yielded about 3,500 pounds of superior black tea, which sells readily, it is stated, at $1 a pound. The average cost of tea brought from Asia is about 14 cents a pound and it may thus seem impossible for us to compete with the cheap labor of the Orient. Mr. Wilson states that he would not attempt to grow teas in competition with these poor grades, but only fine teas.—Ex.

Fungi Destroying Trees.—It is not only cultivated plants and trees which are subject to destruction from insects and diseases. Some of the fungi which attack the southern species of pines are causing great damage among these trees. One of these kinds of fungi attacks only the older trees, entering through a knot, and causing disintegration of the heartwood and eating it full of holes. Another fungus enters the tree through the roots, passing up into the trunk and destroying it.

Cotton Area.—The crop circular of the agricultural department for June indicates among other things a reduction in the area of the cotton crop as compared with last year of about 8 per cent. Reports have been more or less conflicting but there seems to be no doubt that there has been a substantial reduction in area.

THE GREAT WALL OF CHINA TO BE DESTROYED.

Greatest and Oldest Wonder of the World to Vanish in the Light of Higher Civilization.

Now that the removal of the Great Wall of China is contemplated, upon the recommendation of Li Hung Chang, it is a curious reflection that the suggestion of the economic uses to which it may be put presented itself to the mind of the distinguished Chinese statesman through his knowledge of the levee system of the Mississippi, says Philadelphia Times. It is to dyke the rebellious Yang-tse-Kiang that this great wall, which has endured for a century more than 2,000 years, is to be pulled down.

The Great Wall of China, known as the eighth wonder of the world, was completed 211 B. C. Several millions of men, it is said, were employed for ten years in its construction, and half a million of these are said to have perished while the work was in progress.

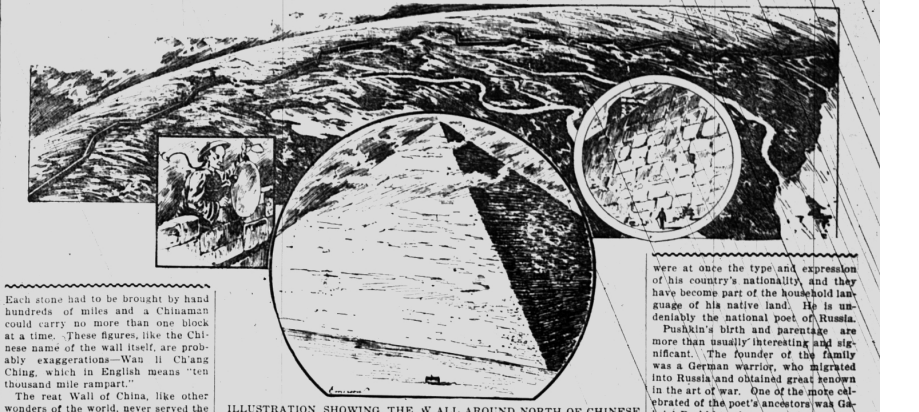

ILLUSTRATION SHOWING THE WALL AROUND NORTH OF CHINESE EMPIRE.

Each stone had to be brought by hand hundreds of miles and a Chinaman could carry no more than one block at a time. These figures, like the Chinese name of the wall itself, are probably exaggerations—Wan li Ch'ang Ching, which in English means "ten thousand mile rampart."

The real Wall of China, like other wonders of the world, never served the purpose for which it was intended. It was built by the first universal emperor of China, Shi-Hwang-Ti, to prevent the barbarians on his northern and northwestern frontier from making incursions into his dominions. Like Weyler's less stupendous and equally useless trochas in the island of Cuba, it always failed to keep the barbarians out when they chose to scale the great rampart and invade the Celestial Empire.

For many centuries it has served no purpose whatever, not even nominally, unless it was to embellish the school geographies of the western barbarians. Few travelers were ever permitted to visit it and there are no authentic descriptions of it in its present condition. Indeed its very existence has been denied. A dozen years ago a paragraph was printed in nearly all the newspapers of Europe and America declaring that it was a myth. While this was not true, it is not so interesting to know that the great wall is as that it is to cease to be.

According to the usually accepted accounts the Great Chinese Wall is 1,255 miles long, but as it follows the undulations of hill and vale—"scaling the precipices and topping the craggy hills of the country," as Lord Jocelyn described it sixty years ago—its actual length reaches 1,500 miles. It is not all solid masonry, as has often been supposed. It is formed of two strong retaining brick walls, the intervening space filled with earth and stones. The breadth at the base is about 25 feet deep and at the top 15 feet. Six horsemen can ride abreast upon its summit. In height it varies from 15 to 30 feet. At a distance of about one hundred yards apart there are towers, many of them 40 feet high.

"The surface of the wall for the greater part of its length was a covering of brick. As the six horsemen never rode abreast along this rampart to any extent the top of the wall became overgrown with grass and it is probably in this condition at the present time.

It is not easy to estimate the number of bricks in such a wall even approximately. If the wall was regularly built through its entire length and the dimensions of the two retaining walls and the brick covering were known this would be comparatively easy. But as a matter of fact it is much more strongly built in some parts than in others. Parts of it indeed may be solid masonry. Its eastern parts are more grandly built than those west of the Ho river. In some parts of the country, where stone was more easily procured than bricks, the sustaining walls were built of hewn stone. Whether brick or stone these walls were more thoroughly and expensively built than any great embankment or tunnel produced by modern engineering, and have endured longer than walls built during the present time will last.

An appropriate estimate of the masonry in the Great Wall of China from such data as is obtainable—a wall that would extend from Philadelphia to Omaha if it could be lifted from its place and transferred to the western hemisphere—would make it measure the extraordinary total of 3,012,000,000 cubic feet.

These figures indicate an immensity so great that the mind is unable to grasp the full meaning of the idea it conveys. Assuming that the bricks are of the ordinary size of modern bricks this would make a grand total of 64,456,000,000 bricks in this one stupendous work. The immensity indicated by thees figures is equally beyond the grasp of the human mind. The only way to obtain any adequate idea of the immensity of the wall is to compare it to some familiar building of great size. The Public Building, in Penn Square, as a fit example for comparison. That great structure as it stands contains 1,125,744 cubic feet of masonry. The masonry of the Chinese wall would make a structure thirty times as long and thirty times as high.

The accompanying illustration shows what a speck the present structure is in comparison with the space that would be occupied by a building increased thirty times its length and height.

It is equally difficult to conceive the number of laborers that would be required to construct such a work in ten years. Judging from the history of our Public Building Commission during the last quarter of a century the work would still be incomplete if it had been intrusted to a similar commission by Shi-Hwang-Ti, 211 B. C., regardless of the number of men available for its construction.

The Chinese wall is one of the eight wonders of the world, with which the world will willingly part. Useless as it has always been, it is gratifying to know that the material it contains is to be turned to some practical use at last. If the Chinese rivers that so often prove destructive to everything near them, can be confined within their banks by the contemplated building of a new Chinese wall, it may be said that Shi-Hwang-Ti after all builded better than he knew.

The undertaking of A. D. 1899 is certainly greater in importance and not inferior in immensity to that of 211 B. C.

It would prove the revivification of China if the Chinese Government and people can remove within twice ten years the great landmark of isolation that has stood for the long period of twenty-one centuries, and use it to curb the rivers that so often work death and devastation in the northern part of China. And it is especially gratifying that this mighty stride toward a stronger civilization is wholly of Chinese initiative.

GREAT RUSSIAN POET.

A hundred years ago Russia gave birth to one who was destined to become the brightest star in her sparsely studded galaxy of poetic genius. Pushkin and Micklewitz share the honor of being the two representative poets of the Slavonic race, and the only poets of their country who have attained world-wide celebrity. In the productions of this strange genius, Pushkin, Russian poetry first became an independent power. His writings were at once the type and expression of his country's nationality, and they have become part of the household language of his native land. He is undeniably the national poet of Russia.

Pushkin's birth and parentage are more than usually interesting and significant. The founder of the family was a German warrior, who migrated into Russia and obtained great renown in the art of war. One of the more celebrated of the poet's ancestors was Gabriel Pushkin, who espoused the cause of Demetrius the Pretender, that unfortunate impostor who so nearly became emperor of all the Russias. This ancestor plays an important part in the poet's historical tragedy, "Boris Godunoff." But on his mother's side Pushkin's descent is still more peculiar. His mother was the granddaughter of an African who was brought to Russia by Peter the Great, who gave him the name of Hannibal, and placed him in the navy, where he rose to the rank of admiral. Thus the poet blended in himself the cold temperament of the Teuton with the fiery, untamed spirit of the children of the desert. To this ancestor he dedicated more than one of his smaller works, and he makes frequent and proud allusion to his African descent.

His education was erratic, many teachers having him in charge. A young Scotchwoman taught him English literature, and a Russian woman trained him in the literature of his own country. Pushkin was a poor scholar, though he read widely. He was irascible, gloomy and imperious. His poetry was the first ever read by the peasantry, and he was worshiped throughout Europe by the lower classes as well as being a favorite with the nobility. He died at 38, being killed in a duel.

IN MANILA WHEN FILIPINOS FIRED IT!

It is evidently an English officer who sends from Manila to the British Navy and Army illustrated a graphic account of the attempt of the Filipinos to burn that city. He says in one part of his story: "At 2 a. m., bugles on the insurgent side sounded 'Fall back!' and the Filipinos retreated as the fires, burning furiously to the west and south, drew closer around the city. It was hopeless to attempt to put them out. But as the natives, relying on the set of the wind, had started operations from their own quarter, it was decided to let them have the full benefit of their bonfire. A long barrier was made and soaked through and through with water, and buildings that looked likely to carry the flames were razed to the ground or burnt as they stood. Thus a non-inflammable zone was created, and across this belt the flames could not leap. Any bits of stone wall or other non-combustible structures were used as a foundation for the barrier, and the trees or woodwork were removed or burned.

"Then the Americans advanced on Tondo and completed the Filipinos' handiwork. Wherever a section of the native quarter was not burning they started a fire. Occasionally an organized band of Filipino riflemen barred the way, and there were several fights—hot fights from all points of view.

"At last the whole body of them broke and fled as fast as their legs could carry them in the direction of Maepajo village, where they had intrenched the bridge and the further side of the river. Others made for the fortified village of Guadaloupe. The great fire which was to have burned us out of Manila began and ended in Tondo. The population of Tondo in normal times was from 60,000 to 80,000. The population now is nil. Tondo was razed to the ground, and the only Filipinos who remained in it were dead. As for Guadaloupe, it was occupied by 4,000 of Aguinaldo's troops, plus the fugitives from Tondo. Gen. King marched up a week later with the Utah volunteer artillery, and the California, North Dakota, and Oregon volunteer infantry, and, planting his men on three sides of the village, blew the place to pieces. The field guns used on this occasion were for the most part not American, but Spanish, of the Nordenfeldt make. They were taken from the city walls of Manila, and are not of the very latest pattern. The Yankee artillerymen, however, make the best of them they can."

THE DEAD AT TONDO.

LAPLAND RYE CAKES.

Looked back at from a distance, says Cutcliffe Hyne in "Through Arctic Lapland," the rye cakes of Lapland do not carry pleasant memories. In fact, of all the foods that ever got past my teeth—and in rambling about the back corners of this world I have come across some uncanny morsels—the bread of Arctic Lapland carries the palm for general unsatisfactoriness.

The grain is sown and suffered to come up as the weather and the weeds permit. When it is as near ripe as it chooses to get, it is reaped, and with the husks, the bran, the larger part of the stalk and a fair percentage of the companionable weed, it is chopped into meal. It is not ground; it is more hay than anything else. Baking days come seldom, and a large supply is baked at once.

The dough is pawed out into disks a foot in diameter and from five-eighths to three-quarters of an inch thick. Each disk has a hole in the middle, and when the cakes are baked they are strung on a stick and hung up on the rafters for use as required. Age neither softens nor hardens their texture.

There are two varieties of these delectable cakes. One sort is like India-rubber, and on this we could make no impression; but with the other kind, which is of the consistency of concrete, we could, as a rule, get on quite well if given time. It was flavorless, unless packed with stale fish.

It was not strengthening, either, as the system could assimilate very little of it; but still, there was no denying that the cakes did fill the stomach, and for this purpose we employed them ravenously whenever they came in our way. There is no ache so bitter as that of an empty stomach.

Willie Knew.

Teacher—Willie, where is the capital of the United States? Willie To-date—In the trusts.—Town Topics.

Designated.

"Phwat koind av a horse is a cob, Larry?" "Was thot's raised futoirely on corn, Diny."