

dition of the atmosphere. It is proposed by Prof. Gray to station a series of submerged bells at regular intervals along the coast, which will be rung electrically from a shore station. It is claimed that a vessel provided with receiving instruments would be completely safeguarded against running ashore during foggy weather. The device may also exercise an important influence on the future of submarine warfare, for the reason that, even in the case of the ordinary torpedo boat, running at the surface, the throb of the engines may be distinctly heard with this device at a considerable distance. It is claimed, moreover, that the sounds will be even more distinct in the case of a completely submerged vessel.

SOME OF THE SINGULAR FOODS OF THE FILIPINOS. BY GEORGE D. RICE.

Your correspondent having had the privilege of investigating the kinds of foods eaten by the native people of the Philippine Islands, some interesting information may be given concerning the way in which the Filipino makes up a good dinner at low cost. Probably the most common article of food that would not be desired by Americans or others than the Filipinos is the grasshopper. In these islands the grasshoppers not only grow in great numbers, but the size of the insect is large. There are those who make a business of catching the grasshoppers during the best season for them, which is in May, June, July and later. At first the grasshoppers begin to appear in swarms, but of small size. As the grasshopper grows the proportionate increase in size of the swarms is noticeable. At first the clouds of hoppers passing overhead seemed something like a hazy atmosphere; after a few weeks growth the clouds of hoppers become dark and heavy. They fly in large numbers, and the day is darkened as soon as swarms of hoppers appear in any vicinity. They usually light in the pastures, where they live on the smaller insects, the grass, the vegetation in general. When a swarm of full-sized grasshoppers lights on a farm or other productive land the vegetation is almost completely eaten off. In the meantime, however, the owner of the land, with all his neighbors, have been hard at work catching the grasshoppers.

The mode of catching the grasshoppers in the Philippines is interesting. There are always two or three bellboys stationed in the towers of the big church of each city, town or barrio of the Philippine group, these boys being there for the purpose of sounding the various signal bells. There are certain strokes for funerals, others for births, and at present there are signals for the approach of an army. These boys in the tower keep a sharp lookout for indications of the approach of grasshopper swarms. During the hopper season they are particularly active, and announce the approach of the swarms as soon as seen, for the grasshoppers often merely pass over a town, but usually low enough to permit the natives to catch many of them. As soon as the bellboys see that there are some scattering grasshoppers in the air, as an advance guard to the main body, they sound the hopper signals on the bells and hundreds of expert grasshopper catchers with their nets turn out.

There are several methods used by the natives for catching grasshoppers. The most effective is the net. This is a large butterfly net, arranged with netting placed over a hoop, and to the latter is fixed a long handle. The native takes this handle, and with the mouth of the net toward the grasshoppers he rushes forth, bagging considerable numbers at each run. The grasshoppers always go in swarms, except the advance guard and the stragglers, and if anything occurs to disturb their flight they get confused and tumble into bags readily or fall into the open mouths of nets. They fly so closely that they cannot well escape, as when they turn slightly out of their course they come into contact with other grasshoppers next to them.

The padder method for catching the hoppers consists in using a long stick to the end of which is fixed a piece of flat wood, about ten inches in diameter. If the grasshoppers pass over one's own property, then it is safe to use this affair, for then all of the grasshoppers which are killed by swinging this instrument through the clouds of insects as they pass, are dropped to the ground, where they may be selected and picked up later on after the sun has thoroughly dried them out. Another method consists in exploding cartridges in the midst of swarms of the insects, for the shock stuns quantities of the grasshoppers, and after an effective explosion the ground is covered two or three inches deep with the grasshoppers for a distance of from twenty-five to thirty feet square.

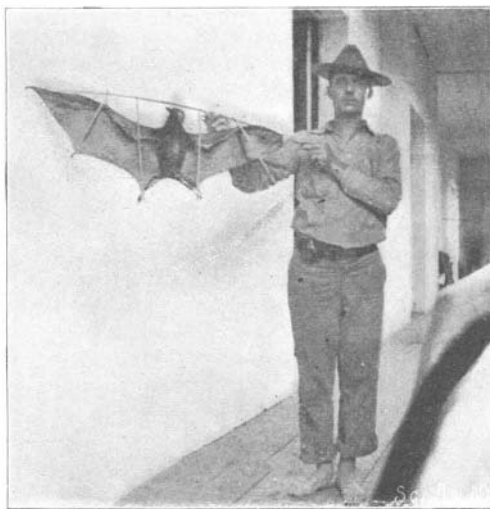
Grasshopper catching is a profitable business in the Philippines. Grasshoppers sell at \$2 per sack, gold, in the larger cities of the islands, where the people do not have a chance to get at the insects in the fields. The sacks of the islands hold about a bushel. The grasshopper is a regular article in the markets for the entire year, as after drying out the hopper can be kept indefinitely. It is in the operation of drying that

the grasshopper is made eatable. I never saw a native eat a green grasshopper, but I have seen them eat the dried ones by the pocketful on the street or in company at entertainments, and by the dish at the table at their homes. Your correspondent has tried the prepared grasshopper, and has experienced no serious results. The hopper is first so thoroughly dried out in the heat of the sun or in the bake oven that there is nothing left that is really objectionable, and a nice, crispy article of food results. This tastes sweet of itself, and something like ginger snaps. The natives usually sweeten the grasshoppers more by using a sprinkling of brown sugar. Then the confectioners make up grasshopper with sugar, chocolate trimmings and colored candies in such a way that a very nice tasting piece of confectionery is obtained.

The housewife of the Philippines takes considerable delight in placing before you a nice grasshopper pie or cake. The grasshopper pie is the most wonderful dish, as the big hoppers are prepared in such a way that they do not lose their form or any of their parts. Care is taken to keep the grasshoppers intact, and they are artistically arranged on the top crust of the pie, while on the interior are some of the broken hoppers mixed with special foods. The grasshopper cake has the grasshoppers sprinkled through it, and resembles plum or raisin cake.

In some sections of the islands the natives grind the crispy hoppers into a fine powder, and this powder is used for making articles of food, and in some places it is reduced to liquid form and taken as an article of drink.

Another article of food which is relished by the natives is procured by collecting large quantities of moths from the rocks of the mountainous regions. In several spots in the mountains in Panay and other islands of the southern portion of the Philippine group I saw moths existing so thickly in the rocky tissues that they could be scraped off into buckets by the quart. The moths seemed to mass in the crevices, and there hang. One could get a barrel of the moths



GIANT BAT OF THE PHILIPPINES.

in a very short while. The natives have not failed to investigate the worth of the moth as an article of food, and they use the insect in large quantities. Their mode of catching consists in going to the hills in parties of a dozen or more with the proper bags and articles for collecting the moths. The scraping process is used in some sections of the islands, while in Negros Isle particularly I noticed that they adopted a different scheme. Here they spread a bamboo mat on the ground beneath an overhanging colony of the moths, and then proceed to disturb the insects with the point of a spear or piece of bamboo. The little insects lose their hold and drop to the mat. They are slow of action and before they can crawl away the game is bagged.

The dainty natives will not eat the wings or the heads of the little moth, and so they now take steps to remove these objectionable parts. This operation consists in creating heat to such an extent that the tissues in the heads and wings become baked and crumble off. The natives accomplish this end by cutting holes in the earth, in which hot fires are burned until the earth is quite hot. Then the hot coals are taken away and the moths are put into the highly-heated openings. The intense heat crisps the head and wings to ashes, so that when removed from the hole and subjected to a sifting operation through netting, the powdered parts are sifted off, leaving only the body. This process also does away with the legs. Often the moths in their present stage of preparation are eaten with some sugar or with other articles of food. Again the moths are used in conjunction with other mixes of food in the form of pudding and prepared dishes. The cocoanut is liberally used in mixtures with the moth and cocoanut cake and pie, and moth fillings are common. Then in some instances the moth is again baked and reduced to powder by

pounding in rice pounding bowls. The powder obtained in this way is sweetened and used in various forms.

The horrible bat of the islands, which here grows in many cases to the size of the American chicken hawk, is also eaten in some sections of the Philippines. The best classes of natives, however, do not eat the bats. The mode of catching the bats is peculiar. The cities towns and barrios of all of the islands of the Philippine group are quite overrun with bats, which fly through the streets at night in large numbers. They fly slowly and seem incapable of dodging articles in their path. Therefore, the native takes a long pole, puts a sort of combination hooked arrangement at the top and takes position in a street, and with the pole held erect waits for bats to come along and bump into the hooked portion. As the native sees a bat coming he plans to have the hook in its path, and as he moves the pole, so as to bring the hook into contact with the head of the bat, the latter usually strikes it with a bang and drops to the earth stunned, when the native proceeds to promptly put the bat to death. After standing in his position for an hour or more, the native has a little pile of bats at his feet. These he takes to the market the next day and receives about two cents each for them. The bats are eaten only in small part. The wings, head, and, in fact, all but a small portion of each side is thrown to waste.

Iloilo, Isle de Panay.

SCIENCE NOTES.

Sixteen hundred persons in the crowds which assembled in London on the return of the volunteers from South Africa received injuries which required medical attendance.

A magnificent marble sarcophagus has been unearthed at the village of Anhar, which is situated near the site of the ancient town of Iconium. The tomb is freely sculptured with flowers, animals and figures of exquisite workmanship, and is stated to be far superior to another similar one at present treasured in the Stamboul Museum. The period to which it belongs has not yet been determined. It weighs nearly thirty tons, and is to be conveyed to Stamboul as soon as suitable transportation facilities have been organized.

The establishment of a royal mint in Canada will make the fourth branch of the English mint in operation outside London. The other three ramifications are located in Australia, at Melbourne, Sydney and Perth respectively. According to recently published returns, the value of the gold coin output from these four mints during 1899 was as follows: The Royal Mint, London, \$12,601,555; Melbourne, \$28,138,835; Sydney, \$16,620,000; Perth, \$3,458,530. It has also been mooted that the government proposes ultimately to establish another branch in the Transvaal.

The solution of the sugar bounties problem which has been such an acute question among certain of the European powers for some time past appears to be in sight. It is stated that as a result of the negotiations between France, Austria and Germany, the two latter countries will renounce their bounties if France, whose bounties are greater, will consent to a commensurate decrease. Further negotiations will be suspended until England consents to give up all compensating taxes, in which event the conference will resume its work at Brussels, in order to formulate a scheme to control internationally the sugar tariffs.

The prizes in connection with long distance ballooning in Paris have recently been awarded by the Aerostatic Society. Comte Henri de Vaulx was awarded the grand prix for his two lengthy excursions into Poland and Russia respectively, while he also carried off the gold medal for record ballooning. The second prize was secured by M. Balsan, who followed very closely behind the first prize winner, while he also secured the silver clasp. The competition was adjudged carefully by a number of aeronautical specialists, including Major Bourgeois, an expert from the War Office, and the distances were rigorously calculated.

At the Anthropological Institute in London Prof. E. B. Tylor recently lectured upon the existing native race in Tasmania, and formulated evidence for the purpose of showing that it represents a period contemporaneous to the stone age, but below even that of pre-historic man in Europe, at the period of the mammoth. He stated that the natives are contemporary with the lowest available record, but they possess the arts of house and boat building, fire making and cookery, basket and leather work, rude tools, and weapons, combined with a mythology including star myths and nature spirits—an animistic religion culminating in polytheism. Prof. Tylor considers from the results of his investigations and study of the race that the Tasmanians present a picture of man's life on earth which, although not primitive, is probably the earliest that is based on direct anthropological evidence.