

# THE APPLE CROP.

## COME SUGGESTIONS ABOUT UTILIZING THE ENTIRE HARVEST.

Methods of Western New York Growers to Use the Various Grades—Evaporation, Canning and Cold Storage.

Apple growers in Wayne County, N. Y., writes C. N. Perkins in the American Agriculturist, have hit upon methods whereby their entire apple crop is utilized. Wayne County is one of the largest apple growing sections of the country, but apple growers did not begin to utilize the entire crop until low prices and insect ravages, causing a large per cent of inferior fruit, caused them to do so. All fruit is carefully graded and used for cider, evaporator, canning or cold storage purpose. Ordinary cider ferments rapidly, so it is filtered through a sand lacking in iron that is obtained in Massachusetts, and comes out as a sparkling champagne that will keep for a year without fermentation. This cider champagne is largely exported and commands a high price.

The next grade of apples are evaporated, and of these enormous quantities are used, which bring to Wayne County apple growers over \$1,000,000 annually. In evaporators, there are many makes on the market. A good machine, capable of evaporating fifty bushels per day, can be bought for \$75 to \$125, and a one hundred and fifty bushel daily evaporator for \$300. Cost of evaporating will average one and one-half cents per pound, and five to six pounds of evaporated fruit can be had from a bushel of fall fruit, and six and one-half to seven and one-half pounds from winter fruit. The big surplus this fall makes prices unusually low.

A finer grade of apples than those used for evaporating, but not perfect fruit, is used for canning. For evaporation, apples are cored, peeled and sliced by machine, but for canning they are cored, peeled and cut in halves or quarters. They are washed, boiled in a syrup and packed in gallon cans. To fill a dozen cans, one and one-half bushels of fruit is required, which can be bought for twenty-five cents. This fall many apples are being canned in hopes of a short crop next year and good prices for canned fruit fifteen or eighteen cents a can. In the process of evaporation and canning, skins and cores are bleached and used for jelly purposes, being seasoned and sold as jelly of almost every variety of fruit on the market. Among the poor of Europe, apple jelly displaces the use of butter.

For packing in cold storage, only the very best, perfect and sound apples are selected. Immense quantities of such fruit is now going into cold storage in the belief that the market will be better from March to June. The apple crop has got to be marketed in the most attractive appearance, or the orange will seriously compete with it as a winter fruit. Co-operative cold storage houses should be constructed and owned on the same business lines as are co-operative creameries and cheese factories, and if fruit growers would thus combine in the marketing of their fruit, English buyers could as easily be attracted to American apple cold storage houses, as are English buyers to Utah or Little Falls cheese markets. Such houses should be of 10,000 to 20,000 barrel capacity. A building forty by six hundred feet will store 4,000 barrels apples and cost from \$1,000 to \$1,500, depending on the section where built.

For cold storage of fruits, ice is not used, the building being constructed to use air by opening the building to cool outside air nights, and closed during the day. Cold storage is used only to bridge over the keeping of fruits for a time and to thereby exclude frost. The price per barrel on apples will be increased from fifty cents to \$1.50 each season, and the advanced price more than pays for the buildings each year. The marketing season could be extended from October to June. In European markets a big red apple brings more money than an orange.

### Artificial Cotton.

Artificial cotton, says a Paris journal, resembles the natural product in this, that both are formed of cellulose nearly pure; and as nature has prepared cotton by means of the elements of the air and soil forging the cellulose in fine fibers by means of secret forces, and offering it in the state of wool to be transformed into what is required of it, so the chemist in his laboratory takes the natural cellulose of the tree and separates it from the substances with which it is combined, transforming it into threads by means of suitable appliances. For this purpose fur wood is employed, this being submitted to a series of mechanical and chemical operations, and the threads are drawn out, after ward being rolled on bobbins; the material when manufactured resembles ordinary cotton, though having a slight defect which can be easily corrected—that is, it is a little less solid than natural cotton. On the other hand, however, the new substance is worked and woven easily. It can be dyed as readily by a natural cotton and when passed through a weak solution of tannin and certain other reagents it will take every shade of artificial colors, and can be dressed and printed on just as are the tissues of natural cotton.

### The Czar's Private Yacht.

The Russian Czar's private yacht is said to be comfortably in the dining room a party of eighty persons. It has also a library and music and billiard rooms fitted up most gorgeously, and a kitchen whose arrangement is most elaborate and complete.

## A UNIQUE DISTINCTION.

New York's 15,000 Hall Bedrooms and Their Occupants.

That which distinguishes this city from all others is the hall room. London has nothing like it, nor has Paris. They do not exist in Boston, nor yet in Philadelphia. The typical New York house has five; these would be six, but the space for one has been appropriated by the bathroom. There are 300 on each cross-town block. In a solid section extending from Washington Square to Fifty-ninth street, and within the limited confines of Fifth and Sixth avenues, there are, roughly estimated, fifteen thousand hall bedrooms. Taking this as a unit of measurement, the alert mind can readily figure the hundreds of these coffin-like enclosures that rise tier on tier on Manhattan Island.

The moral and social significance of the hall room is even more impressive. The manifest destiny of a New York house is that sooner or later it shall become a boarding-house. The history of block after block enforces this view. In that case to the poor, the lonely, the forlorn, the hall room will fall. Of this the architect, the plumber, the gas-fitter, seem to have had prescience. The water pipe ignores it; the slenderest rill of gas alone enters it; the steam pipes hurry by it; the tin furnace pipes go out of their way to avoid it. No register opens genially upon it. It has never known a fire of its own, or cheerful grate, or sullen stove. Even the range fire will stretch its warmth-giving length in any other part of the house in preference. In summer it is hot and stifling. In winter it is cold and cheerless. In all seasons it is either unventilated or swept by perilous draughts. It is the Pariah of the community of rooms, the Cinderella of the domestic roof.—Scribner.

### Indians as Stock Raisers.

Judge D. M. Browning, Commissioner of Indian Affairs, has been visiting a number of the coast Indian agencies and came to Salt Lake from the Fort Hill Reservation.

"My observations on this tour and the experience of the Bureau generally show that the Indian service is improving," the commissioner said. "The Government is endeavoring, as far as possible, and as far as treaty stipulations will permit, to make the Indian self-supporting. Of course, the task is a difficult one, and many failures must result before the desired conditions are brought about, but we are satisfied with the progress being made. It is not expected that many Indians will become professional or business men, but it is believed that they can be taught to be fairly good farmers and stock raisers. Gradually the lands of the tribes are being apportioned in severity and the tribal relationships broken up. Where the lands are fit for agriculture the Indians are given implements, wagons and seeds. They are aided in the construction of houses, and then allotments are fenced. In the dry districts, where stock raising only is possible, a few head of cattle are given each Indian and the sale of their stock is prohibited until they have a certain number. This plan has worked quite satisfactorily on the Sioux lands. When a contract for beef has been awarded and purchases under it are to be made, the Indians are invited to sell surplus cattle to the Government at the contract price. Not long ago at the Pine Ridge agency 600 head of cattle were bought from Indians on these terms, and the red cattlemen were naturally much pleased with their success as stock raisers. I believe the Indian problem will take time, but the day is coming when the distribution of rations will cease and the Indian, having become self-maintaining, will no longer be a ward of the nation.—Salt Lake (Utah) Tribune.

### Rooster and Rat in a Deadly Duel.

Mr. Eugene Polley, who lives at 1039 North Carey street, has a little white bantam rooster that is a fighter. The bantam has a mate, a little white hen, not much larger than a pigeon.

When she went to her nest one day last week to lay her daily egg a big rat flew from her nest and the rooster went to her rescue. The little fellow valorously attacked the rat, and after a hard battle, which lasted for half an hour, the rat was killed.

The rat tried to escape, but Mr. Charles Bosson, Mr. Polley's brother-in-law, who witnessed the combat, would not let it out of the coop, and it had to fight until its death. The rooster was the aggressor, using his spurs to great advantage and bringing his bill actively into play. The rat was almost pecked to pieces, while the rooster lost a part of his comb.—Baltimore (Md.) Sun.

### "Jenkins."

A game called "Jenkins" was proved very interesting. The players are seated around a table upon which they can rest their hands, an equal number being opposite the other. One of the players on one side holds a quarter, which is exchanged from one player to another beneath the table until the opposite side orders "up," whereupon all the hands are raised, tightly clenched. Then they are ordered "down," and must be lowered smartly, noiselessly, and placed palm downward upon the table. The hands must now be ordered taken up singly, the object being not to order up the hand beneath which the quarter rests. It will at first be found a little difficult to hold the money in the palm, that it may not jingle when the hands are lowered upon the table, but this is easily accomplished with a little practice.—New England Homestead.

## PHILIPPINE ISLANDS.

A Group Larger Than Cuba and Important to Spain.

People who have been reading considerably of late about the rebellious spirit that has broken out in the Philippine Islands, in imitation of the spirit that has been manifested in Spain's other island province, Cuba, for two years, have generally a mistaken idea as to the size and importance of these Asiatic islands, mislead by Spain ever since they were named from Spain's bigoted monarch, Philip II, three hundred years ago. The idea is common among all but experts in geography that the Philippine Islands constitute an insignificant group with but a narrow area and few inhabitants. The fact is that the Philippine group has an area of 115,582 square miles. The island of Cuba has but 43,319 square miles. One island, Luzon, of the Philippine group, is more than 400 miles long, and in some places about 150 miles wide. Mindanao, another of the group, is nearly as large as Cuba. Mindanao has 36,000 square miles more than Cuba. For fully two years the people on the island of Cuba have kept the trained soldiers of Spain in check and the entire Cuban population is only about 1,500,000. The population of the Philippine Islands is about 8,000,000, or more than five times as great as the population of Cuba. The revolt that the Spanish government is now confronted with in these Asiatic islands has, therefore, a more serious aspect than has the revolt in Cuba. The trouble is emphasized for the Spanish government by the fact that the revolutionary Carlists are again in the saddle.

Spain can ill afford to lose the Philippine Islands, for they are richer if possible, in agricultural products than is Cuba. In spite of the rascally and incompetent government which Spain affords these islands, their exports amount to \$16,000,000 annually and the imports to \$15,000,000. The latitude of Cuba is from 19 degrees to 25 degrees; of the Philippine Islands, from 5 degrees to 19 degrees. The climate of both provinces is therefore the climate of the tropics. The islands are subject to earthquakes, monsoons and high temperature, but vegetation grows in them spontaneously. Every kind of tropical fruit and plant common to Cuba is common to the Philippine Islands.

It is no wonder that the enterprising Japs have centered their covetous eyes on these islands and are now intriguing for their possession. The Philippines are close neighbors to Formosa, and their inhabitants are much more tractable than are the inhabitants of the island that Japan has been trying to subdue for the last two years. The Philippines would make capital colonies for Japan's overflow. There are 1,200 of the islands, only 408 of which are now inhabited.—Cincinnati Times-Star.

### Device for Seeing at a Distance.

City Clerk Lamborn of Alameda, according to the San Francisco Call, has been made the custodian of a scientific secret that will stir the whole speaking world. A wealthy resident of that city, who has been conducting his experiments in secret for several months, claims to have discovered a method by which one person, when speaking at a telephone, can see the person to whom he or she may be speaking. The new invention, when it becomes common, will certainly be a great moral agent, as it will make it impossible to continue the present practice of disguising the voice to create the impression that some one other than the speaker is carrying on the conversation. Mr. Lamborn is under a pledge not to divulge the name of the inventor, but vouches for the accuracy of the electrician's claim. The machine has been tried in Alameda, it is claimed, and has worked perfectly. While carrying on a conversation with some one over a telephone, the inventor has seen quite plainly the face of the person to whom he was talking. There is still some doubt as to the efficacy of the machine over long distances. The inventor has worked for a long time on this patent, and has spent considerable money on it. It consists of an attachment to the telephone that reflects the face of the speaker. Considerable incredulity has been expressed concerning the success of the scheme to make the telephone carry the impression of faces, but Mr. Lamborn is confident, and declares that several people in Alameda have witnessed its success at short distances, and that when a long-distance wire has been obtained the experiment will be completed and the secret given to the world together with the name of the inventor.

### Clouds Bring Out Odors.

A garden full of flowers is more fragrant when shadowed by a cloud than when bathed in sunshine; at least, that is the conclusion to which the recent experiences of M. Mesnard led. He asserts that it is light, and not, as commonly believed, oxygen, which exerts the greatest influence in destroying odors. According to the same authority, the intensity of the perfume given off by a flower depends upon the relation between the pressure of water in the cells of the plant, which tends to drive out the essential oils that cause the odor, and the action of the sunlight, which tends to diminish the water pressure in the cells. Sprinkling the plant increases the turgescence in the cells, and so augments the perfume. A cloud passing over the sun arrests the action of the light, thus permitting an increase of turgescence, and, as a consequence, a more copious production of perfume. At night the air around a flower bed is heavy with odors, because then their emanation is not opposed by the sunlight.

## Hardships of Telegraph Poles.

"Yes," said Joseph Donner, superintendent of telegraph for the Southern Pacific Railroad, "telegraph poles along the line have a hard time. Particularly in this so-called West, where the poles are costly and stations are few and far between. Now, out in the Arizona desert, the poles are played the deuce with generally. There is a sort of wood pecker that picks the poles absolutely to pieces, thinking there may be insects inside of the wood. They hear the humming, and haven't sense enough to know what causes it. Then near the hills the black bears imagine that each pole contains a swarm of bees and they climb to the top and chew the glass insulators to pieces; but the sand storms are the things that create the most havoc. When the winds blow strongly the sand is drifted at a rapid rate and the grains cut away the wood at a fearful rate. It was a common thing to have an oak pole worn to a shaving in a day's time, while I have seen poles just ground to the surface of the earth during a single storm. Things got so bad out there that the company decided to substitute steel poles for the oak and cedar, but that didn't remedy the evil at all. The sand just wore away the metal on each side of the pole until the centre was as sharp as a razor, and all the Indians used to shave themselves on the edge. We finally managed to fix things. The pitch caught the sand, and now every pole is about two feet thick and as solid as a rock."—New Orleans Times-Democrat.

### A Long and Cold Winter.

A recent re-reading of the "Natural History of Seberne," by Gilbert White, brought to fresh notice one of his observations concerning weather. Quoting from his notes, Letter LXII, for the year 1776, remarkable for its severe cold, he writes: "The first week in January was uncommonly wet and drowned with vast rains from every quarter; from whence it may be inferred, as there is great reason to believe is the case, that intense frosts seldom take place till the earth is perfectly glutted and chilled with water, and hence dry autumns are seldom followed by vigorous winters."

The autumn preceding January, 1768, was very wet, and particularly the month of September, during which there fell six inches and a half of rain. And the terrible long frost in 1739-40 set in after a rainy season and when the springs were very high."

Hence we may conclude, if White's observations are to be trusted, that, after such a rainy September as this last has been, we have a long and cold winter before us.—Boston Transcript.

### Weight of an Elephant's Brain.

A curious statement appears in the London "Veterinarian" on the relative weight of the body and of the viscera of an elephant. The one dissected was 10 feet in height, 22 years of age and weighed three tons. The relative proportional weight of the viscera was as follows: Brain, 12 pounds; lungs, 47 pounds 6 ounces; heart, 17 pounds 9 ounces; liver, 33 pounds 12 ounces; spleen, 6 pounds 9 ounces; right kidney, 7 pounds 2 ounces; left kidney, 5 pounds 10 ounces; length of the alimentary canal, 106 feet.

The female which died last year in the Berlin Zoological Gardens was found upon dissection to give the following proportional weights: Heart, 25 pounds; lungs (much congested), 107 pounds; liver, 50 pounds; spleen, 9 pounds; kidneys, 8 pounds each; alimentary canal, 123 feet; largest intestine, 25 feet in length and of capacity sufficient to hold 151 gallons of water. A curious circumstance was noted in each of these cases; the general absence of fat. In the male there was none whatever (although he had died suddenly of fright during a thunderstorm, and while in perfect health) and in the female only about 12-12 pounds.

### The Russian Imperial Train.

The Russian imperial train consists of eleven immense carriages, and its weight is upward of 430 tons. There is a corridor connection throughout, with a complete system of electric bells, and the electric light illuminates the train both inside and outside. The two kitchen carriages are in front, while the luggage vans are at the back. The emperor's two saloons are placed in the center of the train. The drawing room has furniture of walnut wood, upholstered in pompadour blue and white, and the walls are hung with rose silk. The dining room, which is hung with chamois cloth and upholstered in Russia leather, contains a well-stocked bookcase and a large writing table. The emperor's bedroom is hung with salmon color, while that of the empress is sumptuously furnished in light-blue satin. There are dressing rooms and bath houses and a smoking carriage. The train travels at the uniform rate of thirty-five miles an hour during the day, and twenty-two miles an hour from 11 at night until 6 in the morning. The carriages are so constructed that jolts are unknown, the motion being almost imperceptible.

### Burial Mounds in Siberia.

Boran de Ray, a French archaeologist, has been digging up the Kurgans, or old-turtle-back burying mounds, near Tomsk in Siberia. Some of these, dating from the Russian conquest of Siberia, contain beads, earrings, knives with artistically carved bone huts, copper kettles, rings, bracelets and ornaments of silver. The oldest mound was five or six centuries old. The mounds that were built only 300 years ago showed a much poorer stage of civilization, very few metal objects being found, and the metal heads and knife blades being made of bone.

## NOTES AND COMMENTS.

As soon as the vast railway enterprise which Russia is projecting through Siberia is completed, it will be impossible to make a tour of the world in the brief space of thirty-two days. Prince Michael H. Koff, the Russian minister of transportation, who recently spent several weeks in this country making a thorough inspection of our various railway systems, is authority for this statement. At present it requires something over two months to make a complete circuit of the globe. It is not without extreme difficulty, however, that even this record is made. The trans-Siberian railway, which will doubtless be completed before the present century expires, is to cover a distance of 7,500 miles. It will cost a fabulous sum of money to carry out such a mammoth undertaking, but the result of the enterprise, if successful, will be a complete change in the route over which the world's commerce has traveled for years. Still another effect which this great enterprise will have upon the world's progress will be in the enlarged commercial opportunities which it will give to Russia. It will, furthermore, enable that empire to dispute with England the supremacy in mercantile affairs which she has so long enjoyed. To pleasure-seekers, this railway, projected through the north of Asia, will open a vast area of country hitherto unknown and unexplored. That Russia will succeed in her vast undertaking is evident, not only from the millions in her treasury, but also from the zeal with which she has started upon the great enterprise.

In 1834 there was probably not even a semi-millionaire in New England. There were but thirty-five persons in Boston whose property was assessed at \$150,000, and they were regarded as rich men. At that time, by a rich man was meant a man worth \$10,000. How great is the change in private fortunes since then is shown by the classification of "the classes and the masses" recently made by one of the leading American newspapers. According to this, the "upper class" in American society consists of those whose income is above \$100,000; the "upper middle," of incomes from \$6,000 to \$100,000; the "lower middle," from \$1,000 to \$6,000, while the "lower class" consists of those whose whole income is below one thousand. As applied, writes Thomas W. Higginson in the Bazaar, this practically keeps farmers, mechanics and all day laborers in the lower class; ordinary professional men, shop keepers, head clerks, judges and congressmen in the lower middle; the best paid men of these pursuits in the upper middle; while the higher class includes only great speculators, or mine owners, or owners of real estate, or employees of labor on a large scale—or else the children and heirs of these last classes. Of course the whole classification is frankly based on wealth alone, leaving birth, education or character out of sight, except, perhaps, as recognizing that brains at least have some share in money making.

At last some details are forthcoming as to the cause of the Italian defeat at Adowa, Abyssinia. From the official report as to the circumstances which led to the catastrophe to the Italian army it appears that two reasons may be assigned, viz., a topographical error made by the commanding general in the sketch of the locality, and which made General Albertone's brigade appear nearly four miles ahead of its actual position, and non-compliance with orders received on the part of the vanguard of this brigade, who, instead of taking up a position as ordered by General Albertone, at the mouth of the defile through which the brigade was to arrive, proceeded at once to attack the outposts of the enemy. This shows on what seemingly trifling circumstances the issue of battles may sometimes depend. In the opinion of a French critic, but for the topographical error the premature attack on the part of the vanguard could not have occurred, and the fight would not have been nearly so disastrous.

A German newspaper asserts that about thirty thousand of the inhabitants of Berlin hear considerably better with their left ear than with their right. This has been observed in continually increasing measures for fifteen years. When the cause was sought for, it appeared that those who are thus affected are frequent users of the telephone. The listening part of the instrument is generally held in the left hand and put to the left ear, while the right hand is often used in taking notes, etc. In the cases observed the subjects heard the slightest sound through the telephone with their left ears, but could understand little or nothing if the instrument were put to their right ears. It is therefore concluded that the telephone has an appreciably stimulating effect on the auditory nerves, and the recommendation is made that the instrument be used alternately at the right and left ear.

A maritime signal station is to be established by the Government off Nantucket Shoals, forty miles out in the Atlantic Ocean, in the lane of travel taken by vessels bound from Europe to New York. With its establishment the station at Fire Island will probably cease to be important as the first point on the American coast sighted by shipping bound to New York from the east, from which the agents in New York first hear from their vessels. The station has long been considered practically useless, but the cost of a cable and doubt as to the part the Government should play in the enterprise has prevented decisive action heretofore. Orders have been issued by the Treasury Department now directing the transfer of the Nantucket Shoals light to a point ten miles farther out, where the waves

run smoother and the bottom affords better holding ground.

The cotton crop, says the New Orleans Picayune, "upon the sale of which the character of the season's trade depends, promises to be fairly good, not indeed, as large as has been expected earlier in the season, but still large in comparison with average crops. This crop will, in all likelihood, sell at satisfactory prices. As it was grown very cheaply, its sale is sure to make money plentiful throughout the south, and New Orleans cannot fail to profit largely from that fact. The Louisiana sugar crop, the sale of which is such an important part of the business of this city, promises to be as large as the largest ever raised in this state, if, indeed, it does not outstrip all previous yields."

Dr. J. F. Masters, a missionary in China, says the Chinese word for heavenly is "teen," with an aspirate on the rowels. The missionary left out the aspirate, with the result that the word meant "crazy." After Dr. Masters had studied Cantonese a few months he endeavored to preach a sermon. He wrote it out carefully, but made so many blunders in tones, vowel quantities and aspirates that some of the Chinese remarked how much the English language resembled the Chinese. They supposed that he had been preaching in English! On another occasion he meant to order a roast chicken, and told his cook to go out and set fire to the street.

Australia just now presents an interesting spectacle of the making of a nation out of scattered colonies. Of these there are six; Queensland, South Australia, Western Australia, Tasmania, Victoria and New South Wales. The last two are the smallest, but yet the oldest, most populous, and by far the richest of all. The total white population of Australia is not quite 4,000,000, of which, says Mr. Owen Hall, 2,000,000 belong to Victoria and New South Wales while Western Australia has less than 100,000. Each of the six colonies is entirely self-governing, and, as regards domestic affairs, practically independent.

According to the Youth's Companion, the record of pardons throughout the United States indicate that prison life agrees with wealthy prisoners much less than with those who are poor. It seems to be true that the health of wealthy criminals is not infrequently so impaired within a short time that only release from prison will save their lives; while it is usually the experience of moneyless prisoners that their physical condition is considerably improved by the plain fare and regular regime of prison life.

The Indianapolis Journal says: "New York and Michigan apples are sold in the Indianapolis streets while the crop in orchards not twenty-five miles away lies rotting on the ground. The reasons for this state of affairs are not hard to find. Indiana farmers do not give the attention to their orchards that Eastern and Northern growers do. They plant the trees that some enterprising agent sells them, and give them little more thought or attention. The orchards should be improved and farmers should become as skilled in horticulture as they are in the growing of corn and wheat."

The following large cities of the United States are without representatives in the United States Senate: New York, Chicago, Philadelphia, Brooklyn, St. Louis, Boston, Baltimore, San Francisco, Cleveland, Buffalo, New Orleans, and Pittsburg. The only large city in the United States which will have a representative in the next United States Senate as the result of elections already held or which had a representative in the last United States Senate was Cincinnati, and Cincinnati has not had previously a representative in the United States Senate since 1855, when the term of Geo. H. Pendleton ceased.

The unique feature in the life of Senator Thomas W. Ferry, who died the other day in his seventieth year, was that at one time he was acting vice-president of the United States. This circumstance was occasioned by the death of Vice-President Henry Wilson in 1875, when Mr. Ferry was the president pro tempore of the United States Senate; and while acting in that capacity it became his duty to sign the document which declared Rutherford B. Hayes to have been elected President of the United States.

### Climbing Elephants.

Elephants are able to make their way up and down mountains and through a country of steep cliffs, where mules would not dare to venture, and even where men find passage difficult. Their tracks have been found upon the very summits of mountains over 7,000 feet high. In these journeys an elephant is often compelled to descend hills and mountain sides which are almost precipitous. This is the way it is done: The elephant's first maneuver is to tread down close to the declivity. One foreleg is then cautiously passed over the edge and a short way down the slope, and if he finds there is no good spot for a firm foothold, he speedily forms one by stamping into the soil, if it is moist, or kicking out a footing if it is dry. When he is sure of a good foothold the other foreleg is brought down in the same way. Then he performs the same work over again with his feet, bringing both forelegs a little in advance for the first foothold. This leaves good places all ready made for the hind feet. Now bracing himself up by his huge, strong forelegs, he draws his hind legs, first one and then the other, carefully over the edge, where they occupy the first places made by the fore feet. This is the way the huge animal proceeds all the way down, a zig-zag, kneeling with his forefeet. Thus the center of gravity is preserved and the huge beast prevented from toppling over on his nose.