

NEWS OF THE SCIENCES

Government Investigation Among the Incas.

SOME SURPRISES FOUND

Other Notes of Interest to the Layman.

The researches of the Brander expedition sent out to the ancient burial places of the Inca empire in Peru and Bolivia, by the American Museum of Natural History, are described in the Scientific American on the Incas. In speaking of Lake Titicaca, the writer says: "On the islands of this lake is located the traditional birthplace of the Inca tribe, and here were built several large and imposing structures, the ruins of which still exist. Not far distant was located Cuzco, the chief settlement. The population of Cuzco and the valley in which it is situated, according to Mr. Brander, is said to have numbered between 60,000 and 70,000. The language spoken was, and is now, Quechua. The whole place was built around courtyards or squares, and contained spacious buildings, constructed partly of huge, well-cut stones. The roofs, however, were of thatch. Some of the stones were of such stupendous size and dimensions as would test the best skill of the modern contractor to transport and put in place. This was accomplished by means of wooden rollers, ropes and crowbars. In most cases no mortar was used, the stability of the building depending on the skill in the close joining of the stone blocks.

The government of the Incas is said to have been the most enlightened despotism that ever existed, and about the nearest approach to a Utopia which has yet been reached by any people. There was allotted to each man, free of charge, a dwelling site and extended area of land for him to till and cultivate for the maintenance of his family. The surplus of products from this tract, left over from the immediate needs of the owner, was given as tribute to the Inca government, and used for religious, charitable, and other purposes at their sovereign city of Cuzco. Under their wise and just civic demonstration, crime and public corruption and theft were not known. In Cuzco it is stated that a resident with 300 hours of silver and gold pined up in his house, left it wide open, only placing a small stick across the door as a sign that the master was out—and nobody went in. Agriculture was the chief pursuit followed. Cotton, beans, maize, and coca were raised by the coast people. On the plateau the domestication of the llama and alpaca was the favorite occupation.

"The whole tribe was divided into numerous clans. The powers of administration were centered in the elective dignitaries, a military leader, and the head of the religious system. There was also a council of chiefs. None of these offices were hereditary, and could not be occupied by sons unless they were specially chosen for the position. The succession of the chief Inca did not fall upon the shoulders of his child. This was due to the clan organization, which governed the affairs of state. Inheritance was by mother-right. A man could not marry a woman of his own clan, but has to select one from another. This was the main unit for holding the tribe together. Women had no voice in public affairs, but ruled supreme in the home. She was admitted to esoteric societies, of which there were many. They also practiced healing and became priestesses. Many complicated and elaborate ceremonial and religious rites were observed, and frequent sacrifices offered up to the deities. The Incas, under their enlightened system of government, had, however, incorporated in their religious worship some uncanny customs. Human sacrifice was practiced, and on certain occasions a number of young maidens captured from other tribes were offered up to some of their principal deities. These young women were for a long time kept prisoners, and during the interval were employed at making pottery and weaving gorgeous fabrics out of the silk-like threads of vicuna wool for the sacrificial celebration."

The work of the Egypt exploration fund during the past winter season at Thebes has resulted in the discovery of another temple, south of the great building of Hatsheput, which proves to be the most ancient shrine yet discovered at Thebes. It was the mortuary chapel of the King Mentuhotep Neb-Kheperu of the eleventh dynasty (200 B. C.). It was found in an unexpectedly good state of preservation, and a number of but slightly injured sculptured slabs have been obtained.

The first annual report of the British Imperial Institute, a body organized for furthering the economic and commercial interests regarding the rubber industry, is published by the Rubber Research Committee. The seeds of the Para-RUBBER tree, which resemble chestnuts in shape and size, have hitherto been a nuisance which it cost something to remove; tens of them accumulating every year. Chemical examination at South Kensington has shown that the ground seeds yield one-third of their weight of a light yellow oil, which may be used instead of lard, and is worth at least \$10 a ton. The residue, after the oil is extracted, could probably be utilized as fodder. Another "waste product" may thus prove the basis of a new industry.

Skipping the rope has been dignified by a position in the list of hygienic callisthenics, and the old-fashioned skip-rope of the purloined skip-rope line is explained by the "Giribola"—an adjustable strand weighted at the center and enclosed there in a tube of vulcanized rubber. Dr. Bond, a well-known physician of Gloucester, in England, prominent in hygienic and sanitary matters, is the author of this transformation. He has recently published a monograph devoted to the skip-rope as a health giver. He considers skipping rope one of the best possible forms of callisthenics. It not only exercises the body generally, but can be made violent or gentle as the patient desires. He recommends it to elderly persons of sedentary occupations, especially to brain workers. He also pertinently recalls attention to the fact that any gray-haired man, sensitive as to his ap-

pearance during the exercise, can perform it in the privacy of his own room. In this age of fads, of Knipp barefoot cures and Japanese Ju-jitsu, it would perhaps not be surprising to see a "Giribola" cult of aged savants develop. Dr. Bond, at any rate, is very enthusiastic, and believes that he has derived great benefit himself from rope-skipping.

The forthcoming meeting of the British Association for the Advancement of Science is to be held at Cambridge from August 17 to 24 under the presidency of Prof. Allen Sedgwick.

It is stated that a considerable number of favorable replies have been received in answer to invitations issued to foreign scientists. Among the papers to be read is one by Prof. H. P. Osborn of Columbia University, N. Y., on "Recent Explorations and Researches on Extinct Mammalia." A number of interesting excursions and social gatherings have been planned. Among the latter is a garden party to be given by the principal of Girton college.

The bluebeard's cupboard, discovered in the fort at Gyantse, Tibet, containing scores of human heads, some of them recently cut off, suggests GYANTSE the query whether some such horrible secret as this connected with the religious rites of Lamaism may not be at the bottom of the care with which Lhasa is secluded from the world. Nearly 200 tons of provisions were found stored in the Gyantse fort, and many curios. All of these not connected with religious ceremonies are being sent back to the Indian museums.

In a bulletin of the Agricultural college at Tokio there is printed an interesting account of an investigation by Mr. Aso on the causes of the difference in color GREEN AND black tea. In making BLACK TEA, green tea the leaves are steamed as soon as gathered; in the case of black tea they are allowed to ferment before drying. The finished black tea contains much less tannin than the green. The author shows that the original tea leaf contains an oxidizing enzyme, which is destroyed by heating to about 77 degrees C. During the fermentation of the leaf in the manufacture of black tea this enzyme oxidizes the tannin, giving rise to a brown pigment.

Lord Blythwood writes: "It may interest some to know that radium destroys vegetable matter. I happened to replace the quantity of radium in its ebullient plates used to keep in the small box, with a piece of cambric, so as to permit the whole of the emanations to pass out, mica stopping the A-rays. In four days the cambric was rotted away. I have replaced it now several times, with the same result."

The wonderful skill which persons deprived of one sense frequently develop in the use of the others is well illustrated in the case of a blind clerk in the office of the British and Foreign Blind Association for promoting the education and employment of the blind in London. He is able to "take down" on the English frame (a contrivance for aiding the blind in spacing, etc., when writing) with almost as great a rapidity as a shorthand clerk taking notes; and when he is reading aloud what he has written, or from any Braille manuscript, it requires all the skill of the stenographer to keep up with him. A new frame recently patented by M. Dussaud is said to be a considerable improvement over the English frame, and will probably eventually supersede it, but is at present rather too complicated and expensive for general use.

The last annual report of the De Beers consolidated mines shows an output of \$3,000,000 worth of diamonds. This business enabled the company to pay a dividend of 35 per cent on the common stock, besides carrying over \$3,250,000 in the shape of undivided profits. It is worth noting in connection with these enormous figures that beyond a very limited use for glass cutting and tipping drills, the diamond is a pure luxury; it is a somewhat interesting comment on modern civilization that one concern, furnishing a product used almost exclusively for personal adornment, should be doing a business of such vast proportions.

Albin W. Tourge, United States consul at Bordeaux, France, writes of the growth of the "pin maritime" in the Landes and adjoining departments REFORESTATION IN FRANCE.

wrought by human agency in the modification of natural conditions of soil and climate for the benefit of mankind, saying that it is a marvellous demonstration, not only of the practicability, but also of the beneficence of reforestation. The condition of things previous to the reforestation he describes as follows: "At the beginning of the nineteenth century the region between the Gironde and the Pyrenees, excepting a narrow belt which skirted the southern bank of the river, extending inward from 50 to 100 miles, was not only one of the most barren in the world, but apparently altogether hopeless of reclamation. For 100 miles along the shore of the Bay of Biscay there stretched a threatening array of gray sand dunes which year by year pursued their irresistible march toward the heart of the most productive land in Europe, at a rate varying from 1 to 200 feet a year. One after another, great waves of sand, moved by the restless winds that swept across the Atlantic, continued their unceasing march across the fair plains of southern France, burying all before them—fields, meadows, vineyards, houses, churches, even villages—leaving behind them only gray billows, to which clung bunches of bracken, a few starved bushes of scrub oak, and thickets of white and purple gorse, fighting stubbornly for a hold upon the shifting sands, with here and there some straggling groups of pines, which wind sand and fire and water had spared."

Mr. Tourge tells of the experiment of Bremonter with the "pin maritime," its successful staying of the march of the sand dunes, and the action of Napoleon in forwarding the work of planting the tree which was to stop the havoc wrought by the spreading sand dunes. "The greatest success of all Napoleon's victories," says Mr. Tourge, "is that by which the aver-

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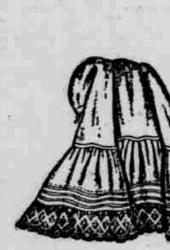
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creasing legions of the "pin maritime" are mustered along the coast from the mouth of the Loire to the Pyrenees to shelter the sunny plains from the assault of the sand-laden plains from the Atlantic and convert impeding evil into an economic blessing."

AN INDIAN ROUND-UP

This has been Indian week in the Hiawatha justice court and as a result there are fifteen Indians and one white woman from the Kickapoo Indian reservation now in the county jail serving out sentences, ranging all the way from 10 days to 9 months, on every kind of charge from disturbing the peace to adultery. It came about in this way: There are a number of hoodlum Indians on the reservation and Indian Agent O. C. Edwards has just been waiting for a chance to clean them out. Saturday night while Mrs. John Gordon lay dead at her home near the reservation, Tom Cat and Robert Cat, full of booze, were around the house shooting off revolvers, yelling and otherwise making as much disturbance as possible. From there they went to the mission and fired more shots, and later kicked in the door of a home nearby. Mr. Edwards heard of the trouble and resolved to put a stop to it at once. Early Sunday morning, he telephoned to Hiawatha for Undersheriff Tom Smith to come out with a whole hatful of warrants. Tom got a rig and made a bee-line for the reservation. That afternoon, in company with Agent Edwards, he arrested Albert Ross, Tom Cat and Robert Cat. They kept up the good work and the same night apprehended John Walters and Mrs. Anna Howard. Later in the night they entered Tommie Goslyn's house on the reservation, which has long been known as a gambling resort, and arrested John Big Foot, Oscar Malick, Dan Green, Arthur Whitewater, Moses Williams, Tom Goslyn, Black Beaver, Jack Pearson and Mar Wilson.

PLEA OF THE FLOUR MILLERS

Some interesting figures in regard to the flour milling industry in this country are contained in a statement made before the Interstate Commerce commission by C. C. Bovey of Minneapolis. Mr. Bovey says that the millers consider it an injustice that when railroad rates on wheat are cut rates on flour should not be cut also. He says in part: "The millers of this country have been affected by the disturbance in rates which has brought about this investigation. In this, that the rate war which has been in time and in any part of the February, March, and April reduced the wheat rate to 62¢ per bushel or 86 1/2¢ per hundred weight at and east of Buffalo and Erie, while the flour rate has remained stable at 64¢ per hundred weight. The millers, therefore, request your honorable body that this investigation shall result in a ruling that the railroads, when they war on rates governing the raw material wheat, must make a parity of rates on flour. The argument is raised that it is an axiom of railroading that the manufacturer product must always be at a higher rate than the raw material, but this argument does not hold in the case of flour, because export flour loads care to the same capacity as export wheat. From the larger manufacturing centers flour moves forward in solid train-loads. There is an increasing tendency to move flour in train-loads. The cost of export flour does not average materially more than the cost of export wheat. Many of the grades of flour which are shipped abroad are of

lesser value than the raw material. It is doubtful if there is any other commodity produced from raw material of such high value that sells in the finished product at so cheap a price. Milling is the third largest industry in the United States. The value of the product produced by the flour mills of the country is only exceeded by the value of steel and packing house goods. \$26,000,000 is invested in the mills of the United States. The capacity of these mills is 850,000 barrels daily. Figuring on three hundred working days in the year, these mills can grind 1,950,000,000 bushels of wheat. The average crop of the United States is from 600,000,000 to 700,000,000 bushels, so that figuring on three hundred working days in the year, the mills could grind in a year almost two average crops. Every bushel of wheat grown in the United States can be converted by the mills of the United States into flour, but if the policy of the roads, as indicated during this war on the question of differentials to the Atlantic ports should be followed to its logical conclusion, it would indicate a desire on the part of the railroads of this country to see the mills of America located in Liverpool or London. A miller in Liverpool could have bought during February, March, and April wheat at Buffalo, ground it into flour at Liverpool, and shipped it back into New York and met the competition of mills located in New York State, and this is simply due to the fact that the relation between wheat and flour was not considered during this period of war.

NOTHING DAUNTED

St. John News: Mr. Lige Titlison, of North Dakota, was in St. John, Saturday. He came down from Lincoln township with Arch Fullerton, who was one of the delegates at the convention. Mr. Titlison was one of the early settlers of Lincoln township, settling there in the spring of 1878, but the hot winds, dry weather and grasshoppers shattered his faith in Kansas, and he returned to his first love, Iowa, about two years later, where he resided until about five years ago, when he moved to his present home. He has returned to Kansas to visit Mr. Fullerton and also with a view of trying his luck here again. Praying in Japan is made very easy. In the streets are tall posts with prayers printed on them, and with a small wheel attached. Any one passing by can give the wheel a turn and that counts as a prayer. The Alps, residing in Yeno, the second largest of the 130 islands of which the empire is composed, worship the bear and reverence the sun, moon, fire, wind and water.

SUNDAY EXCURSIONS

On the K. C., M. & O. R. R. Every Sunday the K. C., M. & O. R. R. will sell from Wichita tickets at...

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