BUSHMEN KILLING A LION.

BY PARKER GILLMORE ("UBIQUE").

As there are different races of Bushmen, and they most materially alter in appearance and modes of life, it is desirable to point out that the two men who form a prominent feature of this sketch are of a breed of aborigines that at one time were numerous in parts of the "old Colony," but now are only to be found in Namaqua or Damaraland, and along the margin of the Kalihari Desert. In stature they are veritable pygmies, live in caves, and almost go entirely without clothing when in pursuit of game.

They are wonderfully expert and fearless hunters, while their dogged patience and resolution, combined with power to endure fatigue and hardship, are truly marvelous.

Although guns are being gradually introduced among these dwarf specimens of the human family, yet the majority of them still prefer to use the primitive weapons of their ancestors, viz., bows with poisoned arrows, short throwing assegais, with knobkeeries.

How they accomplish the death of a troublesome lion—an aged brute that has taken to man eating—I will do my best to describe. However, I should state that as long as the lion behaves himself—that is, confines himself to killing game—he is treated with respect, for the reason the monarch of the desert then provides the bush people with many a meal of flesh which they would not otherwise obtain. An aged animal driven off from his troop is almost invariably the offender, and his presence in the vicinity of the residence of a family of Bushmen is soon known by the disappearance of stray goats and occasional pickaninnies. These depredations result in the death of the marauder being resolved on, and the following is the means adopted to accomplish it.

Soon after sunrise vultures are observed circling round some spot in the desert.

This is an unfailing indication of the presence of carrion. Two of the most skilled hunters go in search of the carcass, which generally turns out to be that of a quaha* or wilde-beest. From this "find" the hunt actually commences.

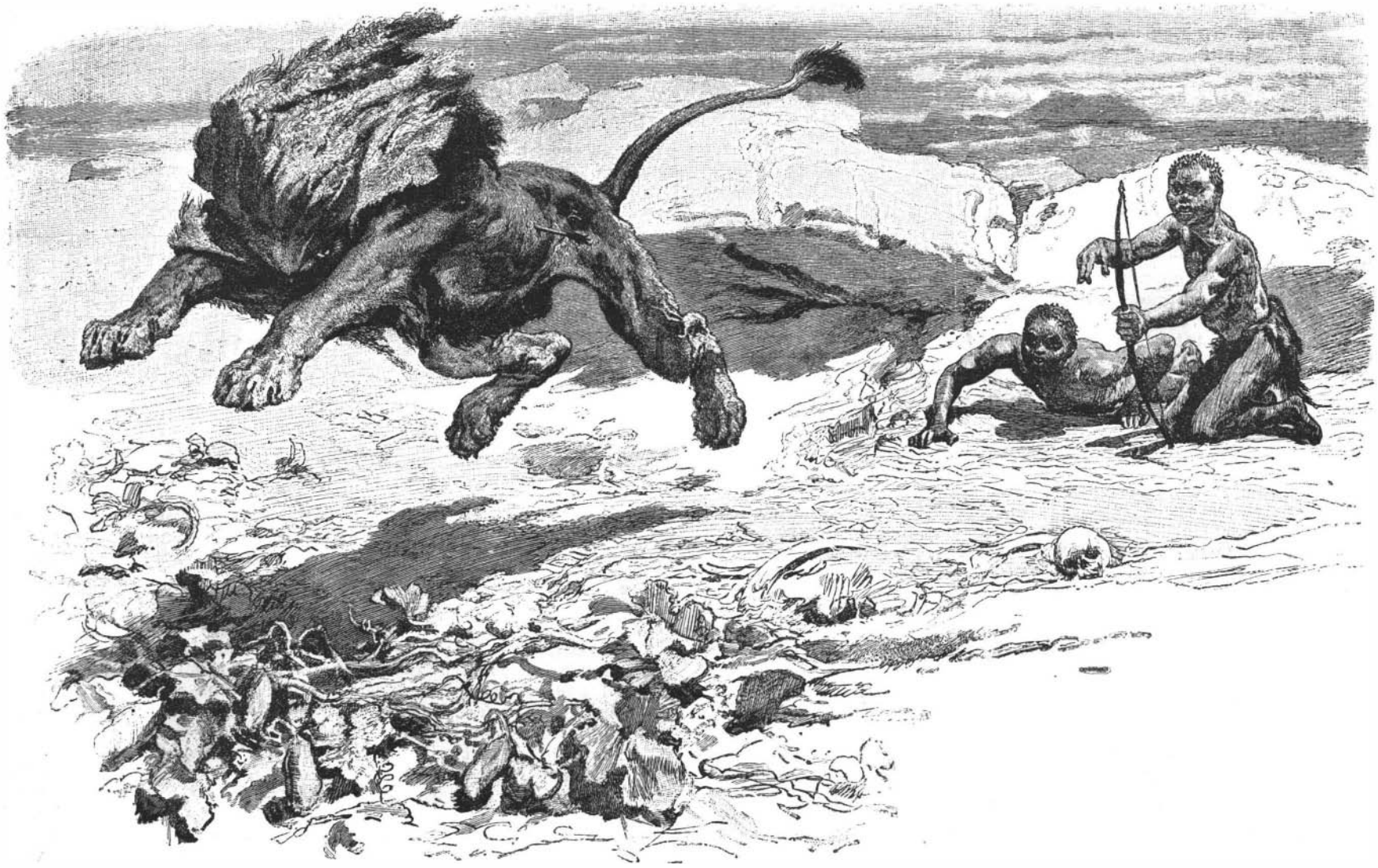
Let us examine these copper-colored dwarfs who are about to undertake a task which many a brave man would be excused for shrinking from, especially when it is explained that one alone carries weapons—a tiny bow and arrow—the other being provided with nothing more than his skin kaross—a sleeping covering made out of the skins of small quadrupeds, and about the size of a railway rug.

At first the work of these two plucky little fellows is easy enough, for the spoor is generally distinct, and well they know that their prey will not "lie up" till it has drunk. In time a vley or pool is reached, by its side the herbage has been pressed down and broken, for at this spot the mammoth cat has stretched at length and drunk to his heart's content. Now commences more serious work, for it is impossible to tell how close the lion is to them, and only up wind can the dangerous brute be approached close enough to afford any prospect of success. The spooring here becomes slow, in single file it is conducted, and momentarily a halt is called to listen for heavy breathing, or to sniff if the air be tainted. By this time we will imagine that the sun has gained meridian altitude, the hour when the carnivora sleep soundest after a heavy meal.

The advance of the two sons of the desert is a wonderful performance, it is the perfection of stalking, not even one of the cat tribe could surpass them. At length the Bushmen's patience is rewarded, they have heard, smelt, or seen the lion, and learned all details of the position he lies in. So ranging themselves side by side, both exert their greatest ingenuity to get close to the foe without being detected. Their object is soon attained. With a jerk the kaross is thrown over the sleeping marauder's head, and a moment afterward a poisoned arrow is driven into his flank. Thus unceremoniously awakened, he stops not to learn who are his disturbers, but bounds off into the veldt with but one object in view, viz., escape. Two or three hours afterward the desert re-echoes the stricken beast's roars of pain, and ere the sun has set the grand old beast has died.—*Graphic.*

AFRICAN BUSHMEN "STALKING" A LION.

* Generally erroneously pronounced "quagga."



BUSHMEN KILLING THE LION.

Azurite Crystallizations.

Mr. B. S. Yeates described a few years since some interesting crystals obtained from Grant County, New Mexico. They had the same crystalline form as azurite, and occurred in masses varying from 1 oz. to 70 lb. Although they had the appearance of native copper, they were found to consist of particles of a clay intimately mixed with atoms of native copper. Mr. Charles H. Snow has now obtained some specimens of the same crystals from the Copper Glance and Potosi mine, New Mexico, and offers an explanation of their occurrence. It seems probable that a solution containing copper, which was probably derived from an eruptive dike contiguous to the copper vein, primarily occupied the vein space, together with the clay, which the solution assisted in rendering soft and plastic. The copper appears next to have been gathered or deposited throughout the clay as azurite; and then, through some agency, such as gases from below, the water and carbonic acid of the azurite were expelled, leaving lumps of porous native copper which retained the form of azurite. The still soft clay was now pressed into the native copper sponge, which acquired thereby the compact appearance, but not the weight, of metallic copper, while retaining the form of the azurite crystals.

The Bamboo in China.

In looking at a Chinaman's house we have no difficulty in at once assigning to the influence of factor No. 1 about three parts of the resultant structure. To apportion the other part between factors 2 and 3 takes more time, and may lead, if we are so disposed, to a lifetime's study of history, language, and social custom.

The great natural material everywhere ready to hand in China is the bamboo (*Bambusa arundinacea*). This plant grows freely everywhere, and more readily than our "quick hedge" at home. while it is infinitely more adaptable to being fashioned into structures of all kinds.

The first thing a farmer does in China is to plant round three sides at least of the site of his house and steading a bamboo fence or grove, the second to cut it gradually down, and therefrom make every conceivable thing he may want, from his house itself down to his fan, opium pipe, and chopsticks.

The bamboo can be cut from the size of the top joint of a fishing rod to a straight, tapering mast, 4 inches or 5 inches in diameter and 40 feet long. It is a hollow-jointed tube, as nearly round as possible, hard, strong, very light; and lest, when used as a strut, it should give way by buckling, is braced through at intervals in the most approved manner by its joints.

In China, nature has lent herself to the toleration of ignorance or of unprogressive knowledge, and has provided on every man's land a ready-designed compression member of the best form, and a beam of nearly the best. Beginning with the house, where the plan initially is an oblong divided into three, a reception and dining room in middle, with the Lares and Penates (actual ones of wood or bronze, representing Buddhist or Taoist deities) conspicuously placed, and two bed rooms, one on either side of the reception room. The walls and partitions are of upright posts of the larger diameter bamboo, to which are lashed with bamboo strips smaller horizontals of bamboo. Through these are intertwined still smaller bamboos, or laths of riven bamboo plastered over with clayey mud. The door is of interlaced split bamboo, with bamboo hinges. The roof is always a purlin roof. Here comes in our "knowledge of principals" clause. The "king post truss," with the general principle (or principal!) of framed structures, is unknown to the Chinese, and the pieces, therefore, must all be in transverse strain. Large bamboo purlins are placed longitudinally from one partition to another; rafters of smaller bamboos are lashed to these, and still smaller are overlaid longitudinally again. On these a thatch of broad leaves is laid, and the roof—the lightest, probably, constructed anywhere—is finished.

The floors are generally of earth, punned hard, sometimes overlaid with "chunam," a kind of native concrete. This finishes a house, if not warm in winter, at least cool in summer—which latter is more important in Southern China and in a country where, in cold weather, every one carries his own private store of burning charcoal about with him in the house.

Now as to furniture. The first essentials are a bed to rest (and smoke opium) on, a table to eat off, and a few chairs. These are all made, to the last ounce or cubic eighth of an inch, of bamboo. The surface of the table is a panel of bamboo clove laths split from the stems of larger diameter, laid side by side, polished side up, and framed in between whole bamboos or one whole bamboo, bent round at each corner of the table by cutting out a V-nick nearly through, and bending the cane until the mitered edges meet. This frame and panel rests on bamboo legs, with rails of smaller diameter. The bed is a flat plane of split bamboo again interlaced, resting near its ends on trestles of the same universal material. The trestle is formed by cutting out a notch in the center of each piece forming the A's of the trestle, of such a shape that when bent around another piece—the longitudinal of the trestle—it just embraces it, and supports it in the angle at the top of the A. These spring beds of a patent now expired, say 1,900 years, are by no means to be despised, and the writer has, when hard pressed for quarters, or when in advance of his rear guard, got a good night's rest out of them with a rug or coat only between himself and the laths. Certainly they are far in advance of the iron bedstead of "modern civilization," which has carried away below decks and leaves holes or spikes to trap or impale the weary traveler—an institution dear to the British landlady, which some of our readers may have encountered.

The inevitable mosquito curtain is slung on four bamboos over the bed, and, proving inefficient, a bamboo fan is used to ward off these direct emissaries of the devil.

To make a fan, a piece of three-eighths inch diameter bamboo, two joints in length, is taken and cut off below the two alternate joints. The upper half is then split down as far as the joint into say 21 or 28 thin spikes (a multiple of 7 is usual for "good joss"). These are spread out through 180° at equal distances apart, and a piece of string threaded through keeps them in place. A piece of paper is then pasted on both sides of these, and the whole trimmed off to the desired shape, and edged with paper of another color. The fan is then ready for use by male and female alike, chiefly the former. Umbrellas are made much in the same way of the same material, and their construction is a marvel of ingenuity and patience.

We have adopted the umbrella from the Chinese (wasn't it Jonas Hanway, the City merchant, who was so wonderfully eccentric or marvelously plucky as to introduce them?), and the time may come—as it has come for a day at a time in the City—when every one will be allowed to cool their faces, and so sympathetically the whole surface of their bodies, by the same means, instead of cooling their interiors only by iced decoctions.

For irrigation, at which the Chinese are adepts, the bamboo is invaluable. By cutting a bamboo in halves down the middle, or by cutting a notch over each joint, and there through extracting the joint, an excellent water supply pipe is made. Water wheels also, up to 16 feet diameter, are made, with the exception of the axle, entirely of bamboo, and are of most clever construction. These are used for lifting water for the irrigation of rice fields. The buckets for lifting the water are themselves joints of bamboo of large diameter—one end closed by the joint, the other open. These, working night and day, supply large areas with water, and show the value of roping in a natural force for one's own purposes, which will work on while one is asleep.

The universal tobacco pipe of the poorer Chinese is a bamboo root and stem, about 18 inches long. The root is hollowed out for the "fill," a hot wire being put through the joints; a bit of goosequill or jade makes a mouthpiece.

Fences, short bridges, money boxes, walking sticks, "swizzle" sticks, sedan chairs, torches, baskets, fish traps, hats, brushes, measures, kites, and scores of other things are all made entirely from bamboo. Bamboo shoots are eaten as a vegetable, and "bamboo chow-chow" is pigeon-English for corporal punishment.

Assaying a Gold Brick.

About 9 o'clock in the morning two men entered the Mitchell building, on Third Street, St. Louis, and, getting into the elevator, mounted to the sixth floor, and went straight to the rooms of the United States Assay Office. One of them carried in his hands a bundle the size of a thin brick, wrapped in paper. He laid it down on the counter in the office and slowly unwrapped the bundle. It was a gold brick. The clerk took the bullion, and, stepping across the floor, placed it in one of the pans of a large pair of scales. Then he closed the office windows and placed some weights in the other. When it balanced nicely he went to his desk, took out a blank form, and wrote to the effect that 400 ounces of gold bullion had been received from the St. Louis Smelting and Refining Works, at the United States Assay Office, to be assayed. This was signed by E. C. Jewett, the assayer in charge, and the men went away. This is the first step the government takes toward obtaining precious metal for coining purposes.

It is extremely interesting to follow this process of assaying through all the steps until the value of the gold is determined and the government's check given for it. Through the kindness of Assayer Jewett, a *Republic* reporter was allowed to witness it.

While Clerk Rex was filling out the receipt Mr. Jewett explained the marvelous delicacy of the scales. Their weighing capacity is 5,000 ounces, and it is possible to indicate by them a difference in weight of one gramme. To illustrate so that this may be easily grasped, two heavy men could be placed in one of the pans, and by removing a pin from the coat of one of them the balance would be changed. Still, it would be difficult to obtain the exact weight of the men, owing to the constant change in men's bodies by perspiration and other causes.

After the bullion's weight was determined on these scales it was taken to the furnace room and placed in a black lead crucible. This was set on a fire brick resting on a grate and a fire built around it. The fuel used is a mixture of anthracite coal and charcoal. After an hour's melting, during which time it was frequently stirred with a plumbago poker, to which gold does not cling, a sample of the metal was dipped out with an ordinary clay pipe and poured into a small mould. The assay is made from this, as it takes so much longer for the larger quantity to cool. A piece of the sample was cut off, pounded, and then rolled through a roller of tool steel, looking something like a clothes wringer, to make it thin. When this was done Herman, the German who aids the assayer in his work, handed the thin golden strip to him, and then went back to the furnace room to pour out the molten thousands into the big mould.

Mr. Jewett cut the strip into small pieces, and then forming little lead cornucopias of uniform weight, dropped into two of them 500 milligrammes (one sixtieth of an ounce) of accurately weighed gold to be assayed. Into two others he put the same quantity of absolutely pure gold. Enough silver was then added to make the proportion of silver to gold 2 to 1, as this proportion is necessary in order that the gold should separate from the silver when boiled in nitric acid.

There is in all gold a certain amount of silver, and it is owing to its presence and certain other foreign substances that the color of gold varies. The idea that gold found in California or Australia is of such a color because found there is a mistaken one.

After the silver had been added the leaden cornucopias were squeezed up and each one placed in what is called a cupel. A cupel is a little cup made of sheep bones burned to ash, ground fine, moistened and moulded into a mould an inch long, an inch in diameter, with a cup-shaped depression at one end. The cupels were placed in a small furnace with a temperature of about 1,100 degrees Centigrade, and when heated to a white heat the little metal chunks were laid by the aid of tongs one in each cupel. They melted, sputtered, and bubbled, and then began to grow smaller. In about ten minutes they were taken out and all the lead and foreign substances had been absorbed by the cupel, leaving only the noble metals in little round balls. When these were boiled in nitric acid the silver passed into nitrate of silver and the gold was left in its pure state. By this was found the ratio of pure gold in the bullion.

The weighings of pure gold are used as a check to any peculiar conditions of heat, etc. The assayer knows the constitution, weight, and specific gravity of the pure gold used. When it is weighed after the heating process, if it has changed weight, it is fair to suppose that it is owing to the conditions of heat or strength of acid, and that the same influences have been at work on the assay gold. By allowing for this in the assay gold a true result is reached.

The next step was to find the weight of the gold and silver together. The lead cornucopias were again filled with certain weights of the pure and assay gold, but no silver added. When melted in the cupels the baser metals disappeared as before, and the gold and silver were left together. By subtracting from the weight of gold and silver the weight of the gold, the exact weight of the silver was obtained. Of course, the proportion is usually very small. If the amount is not sufficient to pay for extracting, the government does not pay for it, and charges nothing for extraction.

The entire amount of gold in the bullion is found by multiplying its weight by the proportion of the gold. This is reduced to standard or coin gold by multiplying this amount by ten and dividing by nine, as standard gold is only 90 per cent fine, and the depositor is paid by the government $18.60 per ounce of standard metal, equal to $20.67 for fine gold. The assay fee is one-eighth of 1 per cent of the total value of fine gold, the melting fee is $1, and the alloy charge about one cent on a hundred dollars, and after this is deducted the assayer hands a check to the owner of the gold. The entire time occupied by this complicated operation was from 9 A. M. until 1 P. M., only four hours.

Eye Strain as a Cause of Nervous Derangements.

Dr. Ambrose Ranney, in the New York *Medical Journal*, draws attention to the view that "eye strain" may be a frequent and extremely important factor in causing many forms of nervous derangements—even in such as are commonly regarded as organic diseases—as, for example, epilepsy, chorea, and insanity. Among the cases reported by Dr. Ranney which were cured by the use of spherical, cylindrical, and prismatic glasses, combined occasionally by tenotomy of certain of the ocular muscles, may be mentioned the following: Four of epilepsy; several of nervous prostration of so severe a form as to justify the most serious doubts of a perfect recovery being possible; one case of mental collapse to an extent which rendered the patient unable to dress himself until told which article of apparel first to put on; one case of melancholia with morbid impulses, the patient walking about the streets touching every tree and lamppost he met; one case of epileptic mania in a patient who required a padded room; several in which confirmed inability to sleep, severe neuralgic paroxysms, constant headache, etc., formed an important feature in the clinical histories; one case of very severe neuralgic paroxysms of the face, which drugs would not control; and other cases of various conditions that were equally distressing and that had withstood all therapeutical measures.—*Lancet.*

Electrical Discharge Peculiarities.

In some experiments by Prof. E. J. Houston with iron filings and bits of fine wire in connection with magnets, the peculiar groupings of the iron wire in chains of polarized particles were clearly shown.

A curious resemblance is possessed by this field and other wire fields to the discharge produced by a lightning flash, or other high potential discharge; such, for example, as the recent 500,000 volt discharge of Elihu Thomson. This resemblance, Prof. Houston says, quite naturally leads to the speculation whether the peculiar forked or curved shapes of such discharges are not due to similar causes, viz., to polarized chains of particles of the medium which offers paths of less resistance to the discharge than the spaces adjoining or surrounding them.