ADOBE RUINED HOUSES IN COURTYARD, CHAN-CHAN.

# Ruins of the Ancient Inca Empire

11111111111111111111111111

By Walter L. Beasley

T is said that the Inca tribe did not commence to be they began gradually to overawe and incorporate the territory of less cultured tribes of the coast and slopes of the Andes, who slowly absorbed both the religion and superior handicraft of their conquerors. These conquests extended over a period of several centuries. The permanent establishment of luca power is attributed to their having secured the good graces of their new subjects, and to their !!beral treatment and policy of conciliation, than to force of arms. This continued until the limits of Inca rule extended from the central plateau of Bolivia to the western coast of Peru. north to Ecuador, and south to northern Chile. The inhabitants of this territory embrace many different tribes with local rulers, living in different stages of enlightenment. Under Inca sway and influence, both

architecture and the various industrial arts reached their highest degree of efficiency. Few, if any, countries of modern times have equaled the extreme and skillful utilization of land that was practised during the time the a large building devoted to religious Inca Empire flourished. In many localities they built their dwellings among rough rocks, on arid slopes of hills, in order to use the limited area of soil for agriculture. They terraced up every hill and mountainside until not a single spare foot of surface was left unimproved. They likewise constructed aqueducts for irrigation purposes, and also a series of magnificent roads, from twenty-five to fifty feet in width, paved with blocks of stone, which connected their royal capital at Cuzco with the various provinces. Part of the way these were cut out of solid stone, and often ascended precipitous heights by a series of stone stairways. Traces of these roads still exist in many localities.

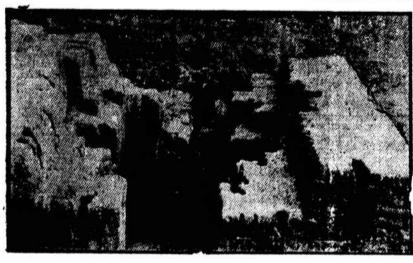
One of the most noteworthy of the coast ruins investigated by Mr. Bandelier, who was sent out under the auspices of the American Museum of Natural History, were those of Chan-Chan, commonly called Chimu, near the pres-

corridors, traversed by narrow passageways. Many treasures of gold and silver are said to have been found in high, twenty-seven feet in circumfer these chambers and apartments. Around one of the great public squares | base. The majority are round; others were arranged some of the one-story adobe dwellings of the inhabitants. These are to-day graphically outlined. and preserve their original appearance, of gold, silver and choice pottery. The showing sharply-pitched gable roofs. Interiors of the Chulpas vary in size There are no traces of windows. Light | and construction; some have a single and ventilation seem to have been furnished by the door alone. It is supposed that some of the great squares and inclosures were occupied by the various craftsmen and industrial workers in pottery, weavers and dyers of fabrics, and fashioners of metal ornaments for the use of the ruler, his household and his priests. One of the conquerors until they had curiosities discovered by Mr. Bandefirst shown themselves to Her was an altar some fifty feet below be statesmen and wise and the surface, which formed the heart of efficient administrators. Having ob- a great artificial mound, and which tained a fairly advanced civilization, evidently occupied the central place in



Burial Tower, Sillustani, Peru.

One of the noteworthy phases of the Chan-Chan ruins were the ornamented walls of two of its buildings, thought to have been devoted to sacred purposes, or to have served as the abode of the ruler. In one instance a series of designs had been sunk a half foot or more in the adobe over the entire wall, now seven feet high. Possibly these may have been apertures for hiding gold and other ceremonial offerings, and afterward sealed up by an additional adobe coating. Another facade, ten or more feet in height, is tastefully decorated with a network of frescoes in a series of duplicated designs of a conventionalized bird. These walls are surrounded by a mass of fallen debris, and nothing is left to throw any light upon their ancient splendor. Probably the most monumental and puzzling of all of the Inca ruins is the great pyramid on the banks of the Moche River. Sphinx-like, this ent city of Truxillo, typical views of majestic artificial mound rises upward which are here reproduced. The ru- in the air 150 feet, crowned by a series ins extend for a distance of three miles, of terraces. It is 800 feet in length. and are one and a half miles in The massive and imposing mound, width. Nothing remains of the originated by ancient builders, has marvelinal appearance and former grandeur ously defled time and vandalism, and of the buildings, except well-laid foun- still holds fast the secret of its crea-



ALTAR IN HEART OF ARTIFICIAL MOUND, RUINS OF CHAN-CHAN.

mented walls and groups of singleyards. Mr. Bandeller estimates that some 40,000 persons occupied the place. The architectural plan of Chan-Chan open squares of courtyards intersecting these were erected a number of 

dations, massive and peculiarly orna- tion, for it remains to-day a veritable enchanting riddle to the archeologist. story, gable-roofed houses and court. The best preserved architectural ruins, and those showing to striking advantage the extraordinary skill of the Incas in handling, polishing, and setcomprised a series of about twenty ting massive stone blocks, are the Chulpas or burial towers. A celebrated and ing one another. On certain sides fac- typical group is found at Sillistani. near Puna, built on a promontory 200 palaces or religious edifices. Each feet high. These peculiar and sumpsquare was surrounded by an exter- tuous sepulchres are termed by the for wall of adobe blocks twenty-five late E. G. Squier, an authority on Pe-

works of aboriginal Americans." The one here pictured is twenty-five feet ence on the top, and twenty-two at the are square in shape. In these the bod ies were interred with great pomp and ceremony, together with rich offerings vaulted chamber, others two, arched over by stone. A few have niches. The entrance is gained through a smal. opening at the bottom, hardly large enough to admit the body of a man This was closed by a stone slab .- Sci entific American.

A Remarkable Barometer. A cup of coffee, farmers claim, makes a pretty accurate barometer. If farmers are watched at breakfast, they are always found studying their coffee cupt closely. This they do for their crops sake. They are finding out what the

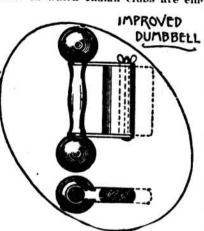
day's weather is to be. "To make a barometer out of a cur of coffee," a farmer said, "you must use loaf sugar. You drop a lump of this sugar into the exact middle or your cup of coffee, and then you watch the bubbles that arise. It is by these bubbles that your prognostications are made.

"If the bubbles rise straight up ir the middle, remaining there in a clus ter till they disappear, the weather is to be fair. If they rise at the sides of the cup, adhering to the china, the weather will be rainy. If they rise all over the cup's surface, and move here and there erratically, changeable conditions are to be looked for." "How about the accuracy of this

coffee cup barometer?" "It is about as accurate," said the farmer, "as the Weather Bureau."

#### DUMBBELL OR INDIAN CLUB. An Excellent Feature in an Exercising Apparatus.

An entirely new design of dumbbell has recently been patented which permits of its use in much the same movements in which Indian clubs are em-



ployed. The original feature of the device is in the addition of a supplementary adjustable handle. The weights are of the usual spherical form, and are joined by the usual shaped handle. Projecting radially from the ends of this handle are two parallel arms. Between those arms is disposed a second handle, pivoted in such a manner as to extend the reach or grasp of the dagers and thumb. The practical effect of this construction is to give a firmer and more vigorous grasp, resulting in a better development of the muscles of the hand and forearm. A minor detail in the design is the provision for the adjustment of this auxiliary handle so as to make the span of the grasp longer or shorter as desired.

### Sanctuary in Korea.

In Korea the rooms of a wife or mother are the sanctuary of any man who breaks the law. Unless for treason or for one other crime, he cannot be forced to leave those rooms, and so long as he remains under the protection of his wife's apartments he is secure from the officers of the law.

Liquelaction of Gelatin. The liquefaction of gelatin in old canned meats has been found by Dr. Grixoni to be due to bacteria. As animals were poisoned both by injection and feeding, he concludes that canned meats that splash on being shaken are dangerous unless boiled before use,

Corruption in Swiss Army. Bribery and corruption have been unearthed in the Swiss army and officers of high rank have had to re-

Month of Marriages. In all countries more marriages feet in height. The larger buildings ruvian culture, "the most elaborate take place in June than in any other

## PLUCK, ROMANCE AND ADVENTURE.

A HAUNTED HOUSE N Cumberland County, three and a half miles north of Montrose, Ill., is an old leg house about twenty-two feet square, one his more with about containing one big room, with shed kitchen attached to the rear. It is a weather beaten, unsightly structure, but today it attracts more attention than the most stately mansion that graces that section of country. It is

believed to be haunted. No native of Cumberland County passes it, night or day, without a shiver, and to the stranger and casual visitor it is pointed out as the rendesvous of the spirit of a dead man whose soul finds no rest in its present state of existence. When alive he vowed that his spirit should visit the earth and trouble his son after death. He

is now keeping his vow. The house was formerly the home of Thomas Elliott, a typical woodsman, of medium size, with white hair and disturbance. The next morning, howbeard. He had a son, a cripple, who lived with him. One of the son's legs fattest hens had disappeared. During is almost useless, and he is compelled to walk with crutches. The father and son often quarreled. One day the father told the son he would never forgive him for the imagined wrong he fat hens still struggling in the snake's had done him, and many times before he died he repeated this vow:

"My son, you have wronged me. If it is possible for the spirit to return to the earth after death, my spirit will come to haunt you and to torment you.'

If the stories of brave and honest men who have spent several nights ens and eggs which had been approin the home are to be believed, the spirit has returned and there have been weird doings in the old house, which baffled all attempts of reason able explanation.

The son is no more able to explain the antics of the ghost than are his neighbors. Neither can be escape its visits. Once he moved to Mattoon. hoping to avoid the unpleasant visits, but the supposed ghost followed him. He moved again, but his change of location was no bar to his uncanny visitor. Finally he gave up and went back to his old home.

If he is in any way concerned with the ghostly apparitions his magic is so artful that no one has ever been able to detect it. Parties of men have frequently spent the night there, but none have been able to account for what he had seen. One night last summer a party of thirty-five residents of that section went to spend the night in the house.

Orville Stevens, who lives near there, and two other men spent a night in the haunted house. He relates a startling story of his experience.

Stephens avers that he was awakened by a noise like footsteps on frozen ground. Sitting up in bed, he listened. The noise grew more distinct, coming nearer and nearer, and appair ently some one entered the house. Trembling with fear, he aroused his companions.

Two crutches belonging to young Elliott, which were lying on the floor. rose, bumped together a couple of times, and then slid across the floor under Stevens' bed. One end of the crutches rested on the floor, while the other end began to pound upon the under side of the bed. Next, the stool on which the lamp was resting turned over, then right side up again, the light remaining in its position, apparently bidding defiance to the law of gravitation. Then a chair in the middle of the room began to do a clog dance. Jumping out of bed, one of the men took hold of the chair, but it slipped from his grasp and continued the dance. The man on the floor turned to Stevens and asked:

"What would you do if the chall should fly at you?" "I'd slam the thing back again mighty quick!" was the reply. The remark was no sooner made than the chair flew through the air and struck over Stevens' bed. He quickly ducked under the bed clothing in hopes of avoiding his would-be assailant. Then the bed clothing began to slip from the bed, going down between the footboard and the straw tick. The men held on to the clothes, but they slipped from their grasp. Stevens jumped from bed and looked under it, hoping to catch a glimpse of the mys-

clothing was in sight. After a while they retired again and for an hour or more quiet reigned. Suddenly one of the men gave a yell, and, jumping from bed, declared that something had him by the foot. He returned to bed only to have the performance repeated. This time he de cided to sit up the rest of the night, but there were no further manifesta tions of the spirit visitor.

terious visitor, but nothing but the bed

Stevens says that these are things which he saw, and no argument can convince him that the age of spooks has passed. He is firmly convinced that the ghost of the old man was in the room, and doesn't care to spend another night there .- New York Telegram.

### BESTED A BEAR.

A narrow Adirondack ledge is a dan gerous place to be at any time, but it is a particularly dangerous situation with 482 pounds of live bear advancing from the rear and a yawning chasm gaping in front. But William L. Brown, of Newark.

N. J., was not paralyzed with fear. Hhad already emptied two loads of bird shot into bruin, which didn't tend to put the animal in a good humor, and then he emptied another charge.

Bruin rose on his hind feet and ad vanced to the combat. Mr. Brown's "bottle holder" was half a mile away and going in the wrong direction to lend encouragement to the situation. It may be remarked that next time Mr. Brown, who is a lawyer, goes hunting he will insert a clause in the contract, probably, compelling the guide to stand by in the event of danger. This particular guide started for camp and got there in record time.

The bear advanced to the combat A swing of the left forepaw caught the lawyer on the jaw. But it wasn't veloped and a small tuft of hair.

a hard swing. The birdshot had begun to make the varmiut tired. Noting this, Mr. Brown sailed in and finshed his enemy.

He has just returned from the North Woods, and while among his friends corroboration is not necessary, there are the scratches on his face to show what he has been through.

Brown says he was with a guide partridge hunting when he met the bear. He shot twice at the animal, he declared, and tifen fied, with the bear in pursuit, made ferocious by the peppering of small shot.

It was not until after he had begun his flight that Mr. Brown discovered that his companion had deserted him and was well on his way down the mountain toward safety. During the race Mr. Brown tried to reload both barrels of the gun, but succeeded in inserting only one charge.

#### A SNAKE STORY.

A man named Snyder, living on the Cane Run road, in Jefferson County, Kentucky, was troubled over the mysterious disappearance of about 100 of his fine large hens. He guarded his hen house all one night, shotgun in hand, but failed to see or hear any ever, he found that twelve more of his the following day Mr. Snyder discovered, about half a mile from his house. an enormous snake, eight feet long and ten inches in diameter, with one of his mouth. Mr. Snyder is reported te have run to his house, and returning with his gun, soon dispatched him Mr. Snyder then made a post-morten examination and found in the snake's stomach the bodies of seven large chickens and ten duck eggs. While he was engaged in counting his chickpriated by his snakeship he was sud denly attacked by twelve other snakes of equal size. After bravely firing the remaining load from his shot gun into his foes, the race for life began. But Snyder won the race and landed safely at home, and it is supposed that his good wife drove the pursuing snakes off. Of course, the reporter was too considerate to embarrass Mr. Snydet by commenting on the remarkable fea. ture of twelve large hens being taken almost from under his nose without making a flutter or uttering a single squawk. Such questions might spoil a good story.

WIFE'S BATTLE WITH BULL After a desperate battle, with a fork as a weapon, Mrs. Stephen Haines, of Morristown, N. J., saved her husband from being gored to death by a maddened bull. The animal broke loose on the Haines farm and L'aines tried to catch him. The bull knocked the farmer down, gored him and slashed his clothing into shreds. Mrs. Haines, hearing her husband's cries, seized a pitchfork and attacked the infuriated animal. She plunged the fork so deeply into the bull's sides that the tines broke off. She then clubbed the handle, and by a fortunate blow on the bull's nose finally

# hurt, but will recover.

drove him away. Haines is badiy

A FIERCE BEAST IN RAGE. Mrs. William Clow, living at a lumber camp near Cedar, Mich., had an experience with a wildcat that she does not care to have repeated. Her husband was away from home on business and she was awakened during the night by the screams of the animal, which was trying to break through the Failing to effect an entrance by that way it climbed to the roof. and for several hours made desperate efforts to tear the boards off and get into the room. It was nearly morning before the frenzied beast went away.

RISKED LIFE TO SAVE CHILD. Samuel Welsh, Harry McCurdy and George Bassett, of Canaden, N. J., wery enjoying an outing at a clubhouse at Fork's Landing, along Pensauker Creek, when a woman cried in the window that a child had fallen into the creek. McCurdy jumped over board, and was swimming with the child when he became exhausted. Both were sinking, when Welsh and Bas sett sprang to their aid and pulled them ashore.

ENGINEER'S WONDERFUL PLUCK All the men of the Jersey Centra! Railroad are talking of the display of pluck made by Engineer George B Bought. While his train was stopped at Bayonne, N. J., he slipped and fel' from the cab, breaking his leg above the knee. Despite the pain, Bought following declaration for the party: climbed back to his cab, ran the en gine to Elizabeth and was sent to the hospital. Bought resides in Jersey the aims of the constitution are mani-

### X-Rays to Find Pearls.

At a time when considerable attention is being paid to the pearl industry of Ceylon, and the Government is taking extensive measures to protect the oyster fisheries there, it is of in terest to record a discovery recently ommunicated to the Paris Academy of Sciences by M. Dubois, relative to using the Roentgen rays to examine the oysters. It has been found that these rays enable an observer to de termine at once whether a living oys ter is growing a pearl, and if the pear is small the oyster may be replaced it the bed until further growth takes place and the desired size is reached In the scientific examination of the pearl oysters in Ceylon it has been as certained that the popular belief that the nuclei of pearls are formed by minute grains of sand or other parti cles holds good in but few instances and that in most cases the pearls of pearly excrescences are produced by the irritation of boring sponges and burrowing worms. The best germs result from the stimulation of a para sitic worm which becomes encased and dies.—Harper's Weekly.

### Japanese Cats.

Cat fanciers all agree that Japan indeed is the country of curious fe lines, and surely no example of the freak in the cat family is more singular than the tailless variety which abounds in the Lan1 of the Rising Sun. For the most part the cats of and Mr. Brown drew a dirk, he says, Japan are minus a brush although they sometimes have a tailbone unde



Children Burn to Death. By the burning of a cabin, section shanty on the Georgia Railroad, at Alsovey, Ga., recently two colored children were burned to death.

The children had been left alone by their parents, Will Currey and his the colored men, and made the prinwife, who were in Covington when the fire occurred. Had it not been for the combined efforts of all the people in the immediate vicinity, the entire row of section houses, together with the foreman's residence, would have been destroyed. It is not known how the fire originated.

Colored Duelists. A dispatch of Newport News, Wa. says: Peter Washington and William Banks, both colored, were arrester in Hampton, on the charge of being about to engage in a duel with pistols. The two have been on unfriendly terms woman. Washington challenged Banks to a fight to the death, the old code

#### Deacon Lynched by Gamblers. A Negro by the name of Jonah

Woods, who lived in the country near Texas Court Grounds, in Heard county, Georgia, about 25 miles from La-Grange, was lynched by other Negroes recently.

Woods was a deacon in his church and a pious old Negro. It is said he discovered a number of Negroes playing craps, and threatened that he would report them to the grand jury. Afterwards, the church was burned down, and two days later, while plowing in the field, he was seized and be sharply divided. There are those strung up to a tree near there.

Sentenced to Ninety-Nine Years. In the case of J. D. Troy, one of the Americus, Ga., colored men charge and loss of self-respect far outweigh ed with the murder of Miles Barnett, also of that city, he was convicted in the superior court and sentenced to serve ninety-nine years in the peni- school work ,advocate a discriminate tentiary, the jury recommending him to the mercy of the court. The case was a hard fought one on all sides, and the attorneys for the defense tried to establish an alibi. The other colored man, Cherry, who is charged with being a party to the murder, will not be tried until the December term of the court. . . . .

#### Germans Being Convinced.

The Germans are convinced that there is a black peril. The wild Africans are not taking kindly to German assimilation of the benevolent variety. That they are a downright peril is evident from the reports reaching Berlin from the seat of the unpleasant-

nes, as witness this one: "Some of the German officers and men invalided home from Southwest Africa are giving some interesting details of the campaign against the Hereros. They speak most respectfully of the intelligence and the tactics of the savage enemy. They sny that his mobility, his partiality for individual sharpshooting, together with the originality displayed in his methods of attack, combine to make him an opponent against whom Euripean tactics are perfectly useless. The deliberate way in which the German officers have been singled out and shot by invisible marksmen recalls episodes of the Boer

### League Demands Suffrage.

The adoption of a plank declaring the republican party opposed to all forms of disfranchisement, founded on caste and race prejudice, has been asked by the National Negro Suffrage League.

The league held its second annual convention at the Institutional African Metrodist church, in Chicago, and named James H. Hayes, of Virginia; J. R. Clifford, of West Virginia, and James E. Dixon, of Rhode Island, as a committee to wait upon the republican committee on resolutions with the

"The right of suffrage should not be withheld wherever intelligence and fested. Whenever it is denied for reasons that do not apply to an understanding of the responsibilities of citizenship, a due regard for life, property and the perpetuation of popular government the act is in direct conflict with the intent and letter of the constitution of the United States. The republican pary therefore is opposed to all forms of disfranchisement founded on caste and race prejudices."

This was signed by the league's committee, which includes James E. Gile, Alabama; J. C. Carter, Virginia; G. H. Reid, Maryland, and James Church, North Carolina.

The report of the committee was unanimously adopted and several speeches were directed : ainst the political slavery of the south.

Colored Delegates Win Out. A Chicago special dispatch says: After deciding several state contests on delegates at large to the republican na-

tional convention, and a number of district disputes, the republican national committee caused some surprise when, by a vote of 23 to 13, the committee decided to seat the delegates at large from Louisiana, who are opposed to the "lily white" element. Not only did the contending party, the Cohen faction, win in the matter of delegates at large, but their representatives were victorious in practically all of the district contests in that state. The "lily white" faction expected the contest would be decided in their favor, and the colored delegates had practically given up hope of being successful before the committee. When the vote was announced the colored

delegates hurrically left the committee room to tell their friends assem-bled in a room adjoining. Instantly there were loud shouts by all of them, who were present, and it was some minutes before the committee could proceed with its work J. Madison Vance, a Negro lawyer agreed in behalf of the colored delegates, as did Mr. Girault Farrar, a delegate at large, and Walter L. Cohen, also a delegate at large, who was allowed five minutes' time to refute certain statements made before the committee by Former Governor H. C. Warmoth, of Louisiana. The latter is a leader of the republicans, who are opposed to cipal argument for their side. The recognised delegates at large are Walter L. Cohen, Emile Kuntz, Girault Farrar and H. B. Brown.

The Whipping Post. The Atlanta Constitution says, editorially: Some far-sighted genius will doubtless soon make a bid for immortality by writing an historical novel or a comic opera on the renaissance of the whipping post. He will find plenty of live material at hand and he can sprinkle his work plentifully with

the pert "modern instance." Levity aside, the revival of sentifor some time, it is said, over a ment in favor of this form of punishment in certain classes of offenses is nothing less than remarkable. The duello to be observed, and Banks ac abuses incident to its use in England cepted. They were on the way to the and Scotland of the middle centuries, dueling grounds snortly before mid- the barbarous cruelty of the Russian night when arrested. They were unable knout and the fanatical manner of its to furnish ball and were lodged in use in this country at one time, bred an active distaste for its employment in the minds of the American people. Within the last few years, however, the trend of sentiment is changing in isolated instances which are gradually becoming more frequent and in closer proximity. In the state of Delaware the lash is employed in minor offenses and only a few days ago a Kentucky justice ordered its public application in the case of a young Negro who had been guilty of an act of rowdylam.

The question of corporal punishment is one on which public sentiment always has been and always will who hold that in every single instance of its use, whether in the schools or as a penal instrument in the hands of the law, the elements of humiliation any tentative good. On the other hand, penologists and those persons brought in close touch with public use of the rod in the conscientious belief that it is effective in the prevention of graver moral and criminal lapses. That a wise conservatism rules locally is shown in the fact that while the birch has not been entirely abolished from the public schools, such restrictions are enacted as cause its use only in the most incorrigible

In the face of divided public opinion, the authorities are feeling their way cautiously in the matter of legal use of physical punishment

## A SEVEN WIFE RELIGION.

Fanatic Fails in Attempt to Introduce It Into Russia.

A Doukhobor named Vazoff, who was disappointed with the doings of his fanatical sect in Canada, and re turned to Russia, has just been arrested and sent to prison, wires the Moscow correspondent of the London Express. Va. off aspired to be the Joseph Smith : Russian Mormonism. Having quarreled with the Canadian Doukhobors, he returned surreptitious ly to his native country, boasting that he would found a sect ten times as numerous as theirs. Arriving at Odessa he tramped inland, announcing to the peasants a new revelation, according to which all true Christians were in future to have seven wives, "as was the case with good Canadians." The villagers of liovo passed a resolution accepting Vazoff's doctrines, but when the mayor, his two sons, and seven or eight rich peasants put the tenets of the new religion late proctice there was a loud outery, and the young men of the district raided the mayor's house and nearly killed his sons. Vazoff fled, but was pursued to a neighboring village, where he was captured while haranguing the moufiks on the virtues of polygamy.

### TOO MUCH FOR MADDOX.

Southerner Yielded to Pleading of Representative Payne.

It deeply grieved Sereno E. Payne, the Republican floor leader, when Mr. Maddox of Georgia raised the point of no quorum and thus threatened to prevent the house from passing a lot of bills. With a heavy sigh Mr. Payne arose, steered his portly form across to the Democratic side, and looked down on Mr. Maddox with a pained

"Maddox," said Payne in a seductive tone, "why do you ball things up this way just as we are getting along so nicely? You have some secret reason, Maddox. Tell me what it is?" "Mr. Payne," began Maddox with

dignity. "Confidentially." said Mr. Payne it a wheedling voice. "I won't breathe

It to a soul." "As I was about to say, Mr. Payne" resumed Mr. Maddox.

"Just among us girls," pleaded Mr Payne.

The grizzled, lean, bald-headed old Confederate looked up at the large form and white head above him, and gasped a couple of times. Then he

"Mr. Speaker," said Mr. Maddox, "I withdraw the point."

### Explosion of Shells.

The experience of the Japanese in the failure of their shells to explode is similar to that of the British. Lyddite, the high explosive used by the British during the Boer war, was simply picric acid melted and cast into the projectiles. While cast picric acid is sufficiently sensitive to enable shells filled with it to be fired from guns with safety, it can only be fired through moderately thin plate without exploding from the shock.