THE OMAHA DAILY BEE: THURSDAY, DECEMBER 28, 1899.

Annual Preparations of the Railroads to Fight Snow Drifts.

and Stocks of Food Land In- by the efficiency of the rotary plows, Strange Storles of Snow Fights and Snow Slides.

outlay fully \$1,000,000 have been spent an- the unfortunate men were working. nually in keeping the sheds in repair and the A trackwalker who had seen the acciexposed tracks free from snow.

have their seasons of play and their seasons shovelers, was soon on the scene. It re- nels, of work. During the summer months when quired thirty hours of continuous work to even in the higher passes the sun and warm winds serve to keep the permanent way clear. Without the aid of the powerful rotary the and free there is little to do save the or-dinary run of repairs and reconstruction, and the gang of sixty men would have per-of All Shades. dinary run of repairs and reconstruction, and the gang of sixty men would have perbut along about the 1st of October all this ished with the extreme cold. is changed.

a gradual but continuous spreading of white average annual snowfall is 41.7 feet. This writes a correspondent of the Boston Tranon the tops and in the upper crevices of at hand. The superintendent takes a trip over the road with his assistants and a careful inspection of the sheds and tunnels is made. In divisional headquarters the rotaries and the old-time "buckers" are overhauled and prepared for use, and as the middle of the month approaches the watchmen who patrol the tracks are doubled.

There is no mistaking the signs. Even a novice could see that something important is pending. In the divisional chops, in the offices and even at the smaller stations along the line there are evidences that the period of work is soon to supersede the ease of the summer days.

Stock of Food Laid In.

In the various baggage cars are placed great wooden safes packed with condense. foods. Beef in the form of extract canned soups, condiments and hard bread, enough to feed 100 persona for ten days, are carefully deposited in these moving storehouses, and from then until the coming of spring they are inspected and overhauled once each week by men detailed for the purpose

At the isolated stations and guarded sidings, reserve supplies of provisions, coal wood and water are laid in, then finally arrives the day when everything is reported in readiness for the descent of winter.

The first call for the fighting contingent of the vast railway army is always attended by scenes of excitement. Lowering skies and chill winds have foretold the fall of snow, and when the various crews arise some morning they find the earth covered with a mantle of white,

It is then the work gang boss overhauls his men and sees that each unit in the force is provided with the necessary shovel and spade. It is then, too, that the crew of each snowplow and each reserve engine go over the last time the various bits of machinery and the divers couplings upon which their lives are soon to depend.

Within twelve hours, if the fall is continuous, the plows go out. Each is accompanled by a gang of shovelers and a straight where experience has foretold the greatest work is made of the banks, but if cold tively clear. weather has really set in and the snow

has been frozen into rounded granules, the is entirely differen

BUCKING "THE BEAUTIFUL" might say. Now it takes only a couple of dishes, broken furniture, cooking utenalis, ongines to each plow, where it used to re-BURIED BENEATH THE SANDS ongines to each plaw, where it used to re- etc., were two Chinamen. They were alquire at least seven. In these days the most hidden from view in the debris, but coal and salaries, not to mention the wear their voices were still strong-a fact very

and tear on the engines, meant a great encouraging to the rescuers. The car, which had been utilized as the The new rotary plows are also reputed to kitchen of a work train, was invaded and

Story of a Great Snow Bank,

On what is known as the mountain divi-

have been the means of saving lives in quite the victims lifted to a place of safety. It mother way. Since their introduction on was observed at once, however, that th DEVICES EMPLOYED ON WESTERN LINES the mountain ratiways, especially in the terrible experience had temporarily deprived vest, there are innumerable cases where them of reason. Although every effort was nowbound trains and even snowbound vil- made to convince the Chinamen of their

Rotary Plows at Emergency Stations lages have been saved from actual starvation changed conditions it was not until a week had passed that they recovered sufficiently to tell their story. It consisted of thes During the winter of 1897-98, which was teraely uttered words:

particularly severe, a gang of track clean-["Us slide down like helice!" ers which had been sent out to bank the One of the curious features of winter Thirty-two miles of snowehods coating \$64 snow near Hector, a station on the Cani- necessities on mountain roads in the west a foot, or a total of \$10,813,440, represents dian Pacific railway, became hemmed in by is the fitting of the tunnels and some of the the price one transcontinental rallway had two enormous slides. The great mass scheds with tightly-closing doors. When the buried cities of a wonderful prehistoric race to pay before it could run its trains over of snow on the mountain peaks nearby de-the Rocky Mountain division of its road, scended with terrific force, completely incides formed in the roofs, sometimes so That was merely the first cost; since that blocking all egress from the cut in which large that they actually endangered the or park which will embrace several of the communities. The site of the investigation

of doors, which were closed after each passdent carried information to the nearest sta- ing train, served to retain the steam from The various roads crossing the Rockies tion, and a rotary, backed by a number of the engine, thus partially heating the tun-

LIFE IN HAVANA.

Homes of Ancient People Hidden in an Ar zona Desert. SAID TO CONTAIN RELICS OF RARE VALUE an expedition located a chain of buried les, varying from 10,000 to 20,000 population, southward from Casa Grande, across congress Asked to Take Steps for the burning desert of today to the boundary ine between the United States and Mexico.

Their Preservation by Means of a National Park-Work of the Ancients.

investigation of prehistoric remains. The expedition that worked during the A petition has been presented to congress asking that steps be taken to protect the winters of 1896-97-98, under the patron age of Mr. Bottume, in the neighborhood o Mcsa, a little town in the eastern part of Maricopa county, revealed vast possibilitie communities. The site of the investigations trainmen in the engine cabs. The providing best preserved remains of large cities in the was what is known as the Mesa Grande, or Gila valley. The famous ruin of a prehisbig upland, between the two principal rivers toric temple at Casa Grande has been sucin upper Arizona, the Gila and the Sali cessfully preserved by the creation of n whose combined current finds vent in the government park of four acres. Without Rie Colorado at Yuma. One of the seven this protection it would probably have been burled cities there is knows as Las Acequi bliterated now. It covers an area nearly two miles and

Many Americans familiar with the details of the unearthing of the temples at 25,000 people. Exploration shows that the

Nireveh and the explorations at Babylon great artificial canals, which were arteries o The people in Bavana-and Havana is an and Thebes have little or no knowledge con- commerce and agriculture, were elaborately epitome of the whole island-strike you as coming the remains of prehistoric communi- terraced. Millions of cobblestones were use Little flurries of snow on the level and sion of the Canadian Pacific railway the an extraordinary mixture of humanity, ties in the west in their own country. in to retain the canal banks. An army of the Gila and Salt river valleys of southern thousands of men and women must have measurement does not mean drifts or filled script. There are black, three-quarters Arizona, says an Arizona correspondent of spent months, perhaps years, in carrying the mountains give warning that the hard, cuts, but snow on the level as the rainfall black, semi-black, three-fourths white, the Chicago Inter-Ocean, are relice of mys-desperate battles of the whater months are is computed by the National Weather bureau, dusky white and white. There are but few terious interest which baffle investigation backs from the distant places to the banks. During the season-that is, from about people of the really white complexion and and they are being hacked to pieces and The largest canal leading to Las Acequias

consisted of a central ditch five feet in width at the bottom and broadening above to thirty feet. It was fourteen feet deep. It was twenty-four miles long. It terminated in a closed reservoir of a mile in length by half a mile wide. The construction of such a work nowadays would be no mean engineering enterprise. But the vast nets of the undertaking by a little city where only stone implements for digging and wicker baskets for transportation were known is extraordinary. Ingenious Work by Extinct Race.

than anyone in the west to reveal the won-

derful treasure of anthropological and

archaeological material in these prehistori

Unfortunately Mr. Bottume fell ill and died

when he had almost finished his plan for

devoting half of his wealth to a vigorous

half square, and probably once had about

The Bottume exporations also revealed he interesting manner in which the mysterious race protected Its canals against scepage of water therefrom, for water obtained at such physical expense is very precious in any community, ancient or mod ern To render the clay beds of the canals impervious it was first puddled and then by means of burning brush and wood (gathered in that hot arid region only by the most arduous labor), it was burned to a terra-cofta consistency. The Bottume expedition proved the fact that the prehistoric people used their canals for navigation. The enormous cedar timbers that are yet found in these wonderful towns came from mountains 5,000 feet high and about seventy miles distant. There was no way to get them to the places of their use but by floating them down the rivers and through the canals. The course of the smaller canals may now be traced, centuries after they have been filled with sand and vegetation. by means of small black pebbles placed along the inner banks by the inhabitants in the bellef, held by the Zunis now, that they assist the motion of the currents, a belief due to a mistaken idea of cause and effect and suggested by the sight of stones colling in running brooks. The explorations of Prof. Adolphus: E

Bandeller and Mr. Bottume shows clearly January 21st that these prehistoric towns extended along the sides of the main canal for a great distance, in proportion to their width, and were situated on the outer edge of the cultivated tract, which included all the intervening land to the river. The towns all consisted of enormous citadel or temple the continuous use of face powder, but it is tion systems are demolishing aboriginal buildings within clusters of dwellings in walled inclosures, which in turn were sur-The ordinary fall of snow and even the not confined to them. In dress you see masterpieces of masonry and curio hunters rounded by the thatched huts of laborers. Stone and sun-dried bricks were used as

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For

For

For

For

For

February 4th

For

January 14th

January 7th

W. T. STEAD,

Editor of the "English Review of Reviews,"

"Breaking Through the Veil."

Beginning with a brief review of the progress of the country in science, Mr. Stend lends upward through the marvels of the material world, telegraphy, telephone, X-Rays, the telelectroscope and wireless telegraphy, to the borderland just beyond-to the possibilities of thought transference or telepathy, the wireless telegraphy of thought. He presents the whole subject of psychic research as it appears at the end of the century in the clearest and most convincing manner. In this article the writer also gives the exact methods of communicating by telepathy, so that anyone may practice it.

W. T. STEAD.

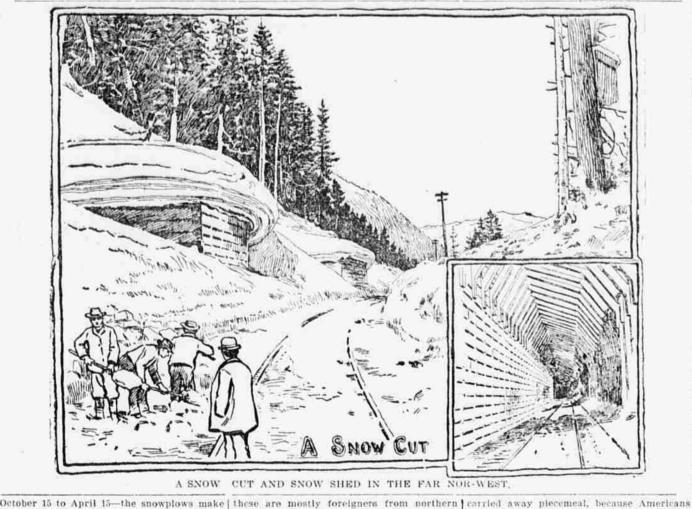
Editor of the "English Review of Reviews"

"True Incidents of Thought Transference."

This is an unusual series of latter-day ghost stories, giving a scientific account of many notable instances of telepathy, of dual embodiment, and of apparitions, some of which came under the writer's personal observation. The article also treats fully of methods of medium writing.

> HENRY M. STANLEY, The World's Greatest Explorer, "The Unexplored Regions of the World."

In this story of the undiscovered the world's greatest explorer describes some of the tasks which the geographer of the 20th century must solve. He tells with graphic interest of the hunger of for Africa, how decade by decade, the English, th Germans, the French, have been crowding deeper and deeper into the jungle-and yet leaving vast areas almost untouched. His account of the commercial and scientific possibilities of undiscovered South America. Australia, Siberia, is of a kind to fire the imagination of the younger generation which must solve these problems. The article will be very fully illustrated with maps and with the latest portrait of the author.



two trips daily. The two hundred and odd latitudes. The pure Cubans and even the know little about them and the government miles of the division are divided into four Spaniards have to a large extent the does not care. They have been more rapsections with a rotary and a "bucker" to swarthy that given by the tropical climate. Idly effaced during the last dozen years drive is made for those passes and cuts each section. This system, together with Many of the people have complexions which than in the previous century. The ranchthe aid afforded by gangs of trackmen and look as if the continuous warm weather men and the farmer are clearing the land depth. If the snow is moist and flaky, quick shovelers, serves to keep the road compara- had caused them to fade out. In the wo- of prehistoric walls and excavations to sow no a this arises in considerable measure from wheat and alfalfa crops. Modern irriga-

Great Snowslides.

mounds for scientific discoverers. Mr. Bot ume became an enthusiast in Aztes lore while he was mining in Mexico and, when he was rich he spent many thousands dollars in exploration of the vast field of American burled cities. Under his patronage

Differences of Soft Snow.

In the first case the damp masses remain where they have been thrown by the plow, but under the latter conditions it is im possible without the most strenuous efforts to keep the glistening, frozen pellets from sliding back onto the tracks. Cases have been known when a comparatively light fail of snow has blocked a mountain track for forty-eight hours.

In the old days when the rotaries were weapons of the future and the snow had to be literally "bucked" by main force from the tracks, casualties were numerous. The type of plow used was a home-made affair -a product of the railway shops. It consisted of a reinforced and strongly braced box car as a base upon one end of which was built an iron tipped plow shaped something like a lofty cowcatcher. Near the top the sides were so arranged that the snow masses were directed into the air at an angle.

When a particularly heavy and tightly packed drift was to be tackled it was the custom to place one of these crude affairs in front of from six to ten engines and charge the drift with f flying start of a mile or two. If the drift consisted of granulated snow frozen into separate particles, the enormous mass of iron went through it like a heated knife through butter. In the wake of the plow came an army of shovelers whose duty it was to bank the scattered masses far enough from the track to prevent them sliding back. This was difficult enough and victory came only after herculean labor.

Sometimes it happened that the drift In the cut was composed of damp snow and had had time to settle and become packed. Then the parils of snow bucking became perils in truth.

'The "bucker" with its powerful motive force of seven or eight locomotives was hurled bodily at the drift and one of two Either the drift was results followed. broken or the "bucker" crumpled up like a toy of cardboard. The fate of the crew of several men depended upon what Artemas Ward called "their nat'ral born luck."

Stories are still told of the catastrophes occurring during one hard winter many years frame dwellings. ago: of how in one instance a "bucker, three engines and fourteen men were buried in a mase of snow for ninety hours and that when the rescuing party finally reached them the imprisoned men were encased at their posts like the baker of Pompeii

Today there are no such harrowing tragedies. The invention of the rotary plow has made the clearing away of snow obstructions a comparatively easy task.

What a Rotary Plow is Like,

In appearance the retary plow is like a huge boxcar strengthened with heavy iron and came thundering down upon the doomed children in the new public schools about to girders and plates. The front end is square town. and open, and within can be seen a great

ing slope inward and are strongly reinforced below the tracks. At first it seemed as if probably without race ostraciam. with iron. The "augur" or wheel revolves the hundred and odd souls had been hurled upon an axle, and as the plow is forced into eternity, but, through some act of divinagainst the drift the snow is eaten away and mercy, the loss did not exceed seven. This thes have an establishment in which more blown through funnels pliched at an angle included one woman and two children. above the machine.

It is seldom that more than two engines to be in the vicinity, telegraphed up and are required to push the rotary, as it works down the line for aid, but it was several days time "bucker." Hailroad men are great ad- away. Effects of the terrible slide are still; mirers of the new order of machine, and visible at the pass they never fall to praise its efficiency.

Two Chinamen in a Snowbank. Before our people bought one we used During the work of rescue the men came to count on at least a dozen lives each winter," said a division superintendent of the upon a bex car which had been thrown bot- tion for these reconcentrado children is not Denver & Bio Grande railway, in speaking of tom side up against a clump of firs. As the different from that of all the children of "We lost eight in one smashup party labored in the expectation of saving the common classes. The care of them in used to store water against the periods of the subject. the season before the first rotary came on some of the missing they suddenly heard a other ways until they are old enough to the road. Since then we haven't had a voice chanting dolefully. The words were gain their own living is the great desideraman killed in that particular line of work." strange, but there was no mistaking the tum.

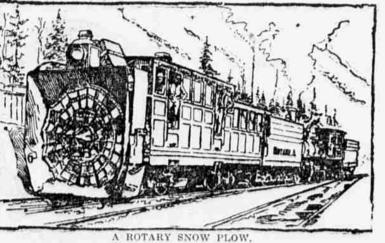
And they cost the company less, too," pathos or meaning of the dirge. he added. "Of course the first price is It was a song of death.

large, something like \$10,000, I believe, but Eager hands soon exposed the interior. for a case of Cook's Imperial Champagne that amount is made up in no time you in the bottom, entangled with a jumble of Extra Dry. Boquet exquisite.

and drifting are of small impor- everything, from the most tidy and tasty are backing to pieces mural works and dig tance, however, to the terrific slides which down to the loosest and most ill-fitting, ging into ancient tombs, merely to get someccur from time to time. It is these The tendency given by the climate is to thing uncommon to keep or sell. Every general looseness and carelessness of ap- curic store in the southwest has for sale timber and wattled cane; thus, their archi phenomena which send a thrill over the entire line and cause as much interest and parel, as would be the case in Boston or great heaps of relics from Arizona's buried tecture was derived, like their pottery, from anywhere else if the weather were always cities. excitement in the general manager's office as

hot. I was told by one in authority-and On a broad sloping plain beginning at the walls show that the houses in large comn that of the section boss of the locality. Mountain railroads are built for the most from what I saw can well believe it-that confluence of the Gila and Salt rivers, forty-munal blocks, 300 or 400 feet long by 200 part along the banks of some convenient f the tendency to go with as little clothing as two miles from Phoenix, are the greatest stream. This necessitatee a long and possible is so great that an ordinance was rules of the prehistoric towns. Some men of at one time passed prohibiting people from science say these towns were built in the admixture of straw. They were situated sinuous roadbed directly at the bases of inumerable mountain peaks. appearing on the streets without something stone age. Others say they existed 7,000

The almost continuous fail of snow during nore on than their underclothes. I saw years ago. There are outlines of two towns the winter months in the upper reaches caused the sloping summits and in the revasses. In time a strong breeze from a particular quarter, or a sudden rise of tem-This mixed mass of people live and mingle towns of 29,000 population. Their builders perature will loosen the mass and without ogether with apparently the utmost cor- had a high degree of engineering skill, warning hundreds of tons will slide down liality and without the least sign of dis- Huge trees were transported to them from upon the tracks at the foot of the mountain. like of one another. From a quarter to forests sixty miles away, great masses of In the majority of cases the only damage one-third of the population of Havana are resulting is the blocking of the road until negroes of various shades. At any public the plows can clear it, but at times lives gathering, political, religious or school, you



will see little or no discrimination of color have been lost and property destroyed. In December of last year an enorme t is the same on the horsecars, lines of slide almost annihilated the little town of which run from the heart of the city to Roger's Pass on the Canadian Pacific. The large or four of the most important subplace was a divisional point and there were urbs. It has struck me on the whole as besides the regular station, a wooden roundthe most perfect exhibition of human house, repair shops and a score of small equality imaginable. Among the working classes white men and black women, and

One afternoon, at twenty minutes past vice versa, marry without the least hesitathree, several men working near the turn- tion, or quite as often live together and table heard a peculiar sound in a ravine raise families of children without marriage. far above their heads. They stood listening | Young people of both colors, young men for a few seconds then, as the truth dawned and women, are often seen walking and on them, they turned and fled shrieking chatting together freely on the streets of evenings. It is very doubtful if the state of

down the track. The alarm was futile. With an indescrib- things will continue with education and able and torrifying roar a great mass of general development. There is already obenow and ice awept around a bend in the jection made among the better-to-do classes

ravine .. caromed against the opposite side to the intermingling of the black and white be opened. Separation of them in the In a twinkling, station, roundhouse, re-

There are not many signs now of the reconcentrados in Havana. The city authori-

than 200 are taken care of, in a poor sort up their living as they can. I saw four of

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building material and the main earthen walls were formed within a framework of original basket types. The best preserved feet wide, and possibly larger, built three near the canal or its branches, were some more on than their undertained, i among the sandy wastes that must have in all cases had one or two pits or ovens times provided with a special reservoir, and or 3 years old hanging around the house- had populations of 40,000 and 50,000 each, for cooking purposes. The walls were probwhile there are a half dozen other ruined ably protected from climatic influences by cement of some kind. The citadel structures are thought, from the thickness of the walls and the amount of debris, to have stone were brought from far-off quarries, been used in time of war as a place of been six or seven stories high and to have

System of Ancient Canuls. refuge. In each city was also another large For about ninety square miles the Gila public edifice, oval in form, forty or fifty calley is an aggregation of ruins. Irrigation feet in diameter and conjectured to have anals, the oldest known in the civilized been a temple of the sun.

world, are found throughout the region. The relics taken from the exhumed These waterways were built with exactness houses, citadels and tombs by the explorera and skill. The largest has been sadly torn include pottery, stone implements, turto pleces in the last few years by the ranchquoises and other stones held in esteem. men, but it still shows the wonders of its shells and shell ornaments and human and construction. It has an average width of animal remains. Many inscriptions have seven feet, it is sixty miles long and it termibeen found on the rocks throughout cennates in a reservoir a mile long and a half trai Arizona. They are surely of a rea mile wide. Think of the enormous labor of ligious significance, showing characteristic constructing such a canal and reservoir attitudes of the people at certain festivals with stone implements and of carrying the and sacrifices and disclosing nothing of a excavated earth away in wicker baskets! narrative or historic nature. They give no But that is only one of seventeen distinct idea of the ordinary manner of dress or of prehistoric irrigation systems in the Gila the textile fabric employed, but show the valley.

priestly gown to have been a long robe The size of these canals gives some idea richly embroidered. A few fragments of of the scale on which these people conducted cotton cloth have been found preserved their agricultural operations. They constructed an artificial river to supply the from decay and also several specimens of basketry. The American Museum of Natural water which their crops required. They History in New York has the finest collecgrew great quantities of corn and they also alsed beans, as well as two or three vation of pottery yet gathered in these buried

rieties of squashes, Prof. McGee of the communities. The pottery is largely ob-Smithsonian Institution thinks it probable tained in pyral mounds and graves. As that they kept the guanaco in domesticamany as 200 urns have been found in a tion and evidences are found which indisingle mound. The designs are still in use cate pretty certainly that they had turkeys. among a few of the more secluded Indian One may walk for miles in this region and tribes in the southwest

find every foot of the sandy surface more Many Valuable Relics Found. or less mixed with pieces of broken pot-Representations are found in the rock tery. The paint is still on them and it is nscriptions and in terra-cotta images of not in the least faded, though it has lain an animal that was undoubtedly used as xposed for ages.

In the neighborhood of Temps an overbeast of burden. This beast resembled the Hama of South America. Spanish flow from the Gila at some distant period writers at the time of the conquests by washed against the rulns until they crum-Cortez and Pizarro speak of the existence bled and were spread out level with the country. Back ten miles from the Gila of woolen cloth among Pueblo Indiana and river the ground is higher and was once as nothing has been disclosed indicating the site of a city. Portions of the buried contact with the whites it is presumed that city wall by which it was protected are these people had domesticated the itama. still standing, more than twenty feet in If this is so, it establishes a connection be schoole, Mr. Frye told me, would be impos- of the houses, which, being less durable, vlans. It also proves that either these pr thickness. Inside are the mound-like ruins tween these people in Arizona and the Peruordinary windmill. The edges of the cpen- were swept bodily into the shallow guich been very large, for in some instances the tiquity, or else there existed an animal

mounds are 300 feet in length by 200 in width the Hama species in North America mu and twenty feet in height. Much of the later than is supposed by natural historia country is very little higher than the pres- The twenty-seven skeletons that ent bed of the Gila and at one time a Bottume expedition secured and the hundre The division superintendent, who happened of a way, it is true, and are being taught to into a basin which formed a unitral resbranch of that stream must have flowed of others that curio dealers and muse read and write, and a little further knowl- ervoir. There was a rise of about ten feet small in stature and that their skulls were ly celebrated. edge. Some are being cared for by private at one point between the basin and the brachy-cephalous (or broader across that are required to push the rotary, as it works down the line for aid, but it was several days by cutting instead of brute force like the old before the wreckage was finally cleared, persons; others still run the streets, picking river and the sandstone formation shows lengthwise), like these of the Zunis, Azters them one evening huddled together for the night under one of the colonades. The number in Havana is variously estimated at arging the passage. Five canals lead out as the local back part of the back part of the assisting the passage. Five canals lead out as the local back part of the back part of the bead, a peculiarity of the locas and known as the local back part of the bead, a peculiarity of the locas and known as the local back part of the back part of the bead, a peculiarity of the locas and known as the local back part of the back part of the bead as the local back part of the back part of the bead as the local back part of the back part of the bead as the local back part of the back part of the bead as the local back part of the back part of the bead as the local back part of the back part of the bead as the local back part of the back part of the bead as the local back part of the back part of the bead back part of the back part of the back part of the bead back part of the back part of the back part of the back part of the bead back part of the bead back part of the ba unmistakable signs of having been cut by and Peruvians. Some of the skulls have a close relationship between the mysteriou which confirm the belief that it was once race in Arizona and the civilization of South a reservoir formed chiefly by nature and America.

> drouth. Chain of Buried Cities. F. B. Thirkield, health inspector of Chi-The late Edward S. Bottume, who came cago, says: "Kodol Dyspepsia Cure cannol he recommended too highly. It cured me rom Albany, N. Y., as a poor drug clerk 1868, and made a fortune of several hun- of severe dyspepsia." It digests what you dred thousand dollars in the ancient eliver eat and cures indigestion, hearthurn and mines near Hermosilio, Mexico, did more all forms of dyspepsia

Dr. CYRUS EDSON,

Famous Chief of New York Health Department,

January 28th "Medicine in the Closing Year of the Nineteenth Century."

A rapid and fascinating survey of the recent astonishing accomplishments in medicine and surgery, with an invaluable summary of the very latest methods of treatment of some of the more important diseases. "Can typhoid fever be cured?" "What are the chances of recovery in pneumonin?" "Does Pasteur's inoculation really cure rables?" These questions and many others equally important and interesting are all answered by one of the greatest of American authorities in medicine and in the light of the world's latest knowledge.

Dr.FREDERICK A. COOK

Famous Antarctic Explorer, ON. "Walking to the Pole."

Dr. Cook believes that the pole will finally be reached by sturdy party of Americans on foot: he gives in this article the renson for this belief; tells what equipment is necessary and how long a time will be necessary to complete the expedition. The article is. in short, a clear and concise presentation of the very latest conclusions of explorers on the problem of the poles. It will be richly illustrated with pictures taken by Dr. Cook in the ice regions

PROF. N. S. SHALER. Famous Geologist of Harvard, February 11th "The Earth's Deepest Depths."

This article promises to be of much more than ordinary interest.

Immediately following Prof. Shaler's article, there will be articles by SIR NORMAN LOCKYER, England's greatest astronomer; by PROF. JOHN DEWAR, the famous Chemist, who was the first to liquely hydrogen; and by several other men equal-

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from 2,000 to 6,000. The problem of educa- of the basin, all on the south and west,