The Polar Bear.

The Polar Bear
Is soft and white,
With silver hair—
A pretty sight.

He sits upon
A snow-drift nice;
Or dances on
A cake of ice.

And then mayhap
At other times,
The funny chap
The North Pole climbs.

St. Nicholas.

The Steamboat Invention.

Robert Fulton's Clermont, the first steamboat of any practical value, was launched into the East river, New York. It is not known who first conceived the idea of propelling boats by steam. Probably it was Solomon de Caus, in 1615. Many people experimented with steam propelling between 1763, when William Henry of Pennsylvania placed a small boat on the Conestogo river, and in 1807, when the Clermont made its first trip to Albany. Among them were Marquis de Jonffroy, James Rumsey and John Fitch. These men produced models which were well worthy of the name steamboat, but the Clermont was the first steam vessel produced which actually carried passengers and freight, and Robert Fulton is fairly entitled to the credit of inventing the steamboat.—Brooklyn Eagle.

Feeding Aquarium Fish.

Some of the fish at the Aquarium are fed as if they were infants who were just being weaned or in the trying period of developing teeth. Instead of presenting the food to them on the end of one's finger, however, a slender, sharp pointed stick is used. The sea anemones, the African catfish (among the liveliest fish in the Aquarium), the Siamese climbing perch, sunfish, paradise fish, the amphiuma, or Congo snake, the white axoloti, the Spanish ribbed newt, the common newt, the triton, the tadpoles and the small goldfish are some of those which receive their food in this way. To all of these is given minced beefsteak. As they are not sticklers the steak is only top round. These fish are kept in the glass jars in the laboratory and have no opportunity to secure food for themselves. They are always glad to get their meal, which varies from one little piece of the minced steak to a number of pieces. Superintendent Spencer gives them their meal about 4 o'clock in the afternoon. He carries it about on a little wooden spade which suggets a butter paddle such as the good housewives of New England work their butter with. Beginning at the end of the row, he stops in front of each jar in turn, and, taking a morsel of the meat on the end of his stick, pushes aside the ulva floating on the top of the water and pokes it into the mouth of the fish, which as a rule jumps for it. Sometimes the meat sticks on the end of the stick, and then the fish has to give it a pull. Some of the fish are so small that they have difficulty in swallowing even a single morsel. They are always greedy for it, however, and ready to undertake the task.—New York Tribune.

Rocky Mountain Rats.

Anywhere in the altitudes of the Rocky mountains may be found a species of rats which live among the rocks and in the mountain caverns. These rats are not unlike the rodents of other localities in shape and size, but, instead of the long hairless tails, they possess bushy ones like those of squirrels; their color also is light brown, which enables the wily little fellows to easily render themselves practically invisible, for the rocks of the mountains are of the same hue, and when startled the animal crouches against a bit of rock spreading his bushy tail, which, when so arranged, closely resembles a dried fern. Sharp, indeed, are the eyes that can see the mountain rat when he uses his disguise, although he may be only four or five feet away.

The Rocky mountain rat does not infest houses or cellars, and does not gnaw through boards, but he is quite an inquisitive fellow, a great thief, and while he prefers to live in the rocks, he often causes much trouble to the miners, who are the only people bothered, for the reason that the miner is the only inhabitant of the high altitudes where the bushy tailed rat abounds.

Recently some miners in northwestern Colorado brought to their cabin a month's supply of food, among which were 10 bushels of potatoes, which were put in a warm place several hundred feet back in a tunnel in the mountain side. The potatoes were taken to the tunnel in the evening, and next morning when the cook went for tubers to supply the breakfast table it was found that only about a peck remained. During one night the rats had carried them away. When it is taken into consideration that only one potato at a time, in all probability, was removed from the tunnel the feat of stealing nearly 10 bushels of them was no small task to accomplish. There must have been hundreds of the rats at work, and even at that it was a marvelous achievements. Think of an army of little thieves rolling out potato each through hundreds of feet of gloom, and imagine the perseverence that was necessary.

Several days after the potatoes disappeared they were found nicely piled under a shelving rock near the cabin. Mountain rats will not eat raw potatoes, so that it was simply a case of mischief, and no doubt the little fellows enjoyed the pastime.

Oftentimes explosions which create terrible havoc are brought about by the mountain rats in various ways. Being of an inquisitive nature he has been known to tear off the paper covering from miners' dynamite, which is used in blasting. If the dynamite has crystalized a little it may be easily exploded and the little brown meddlers have caused more than one terrible catastrophe this way.—Chicago Record-Herald.

Fan Fan, the Fairy.

Why the king looked with favor upon such a man as Abel El Hassen no one could tell. The king was merciful and just, and wished his subjects to be content. Hassen was cruel and selfish and cared nothing for the complaints of the people.

He was the king's tax gatherer; and no matter how poor the crops or what misfortune had overtaken a man Hassen demanded the full payment of his taxes and punished him if he did not pay. But he took care that none of the complaints of the people reached the ears of the king, and the people were helpless against him.

One of the king's subjects was named Abed. He was a peasant, or small farmer, and when a good season came he had barley and potatoes and hay to sell. His wife worked with him in the fields, and they worked very hard. Never had Abed been behind in his taxes, although there were times when it took his last penny to pay them. He knew what would happen to him if he did not, and he always lived in fear.

At last, in this past summer, when it rained almost every day, there was not enough sunshine to make the crops grow. Abed and his wife worked harder than ever, but it was no use. The seeds rotted in the ground and the hay field was flooded, and when the tax gatherer came around and asked for his money Abed had to reply:

"You see how it is. I have raised no crops, and so I have nothing to sell. I don't know how I am to get enough to eat, let alone paying taxes."

"You know the law," said Hassen. "The law says you must pay your taxes by a certain date or stand punishment. Give me the money."

"But I haven't got it," answered Abed. "Can I have money when I have nothing to sell?"

"I care not for that. If the money is not forthcoming you shall be tied up and flogged."

"Have you no mercy on one who has met with misfortune? It is not because I have been idle, but because of the bad weather. Next year I may be able to pay you double."

"Seize him and tie him up!" commanded Hassan to his attendants, and it was done.

"It is a shame to punish my husband when he is not to blame," said Abed's wife as her tears fell. Her words made Hassan so angry that he ordered her to be tied up and flogged as well. The whip was about to be laid on their backs when a voice cried out:

"Hold! Why are this man and this woman to be flogged?"

Everybody looked around at the words, and from out of the currant bushes walked Fan-Fan, the fairy. No one knew her, but all supposed she was the child of a traveler.

"It is nothing to you what happens," you have come from the city and are lost I will send a servant to guide you home."

"I thank you, sir," replied Fan-Fan, "but I am not lost. Why are you going to whip those poor people?"

"Because they have not paid their taxes."

"But how could they pay? Can you not see for yourself that they have no crops? There is neither barley, hay nor potatoes here. There has been too much rain and not enough sunshine."

"That makes no difference to me," said Hassan. "The king needs money, and I must get it for him. Abed must pay me or both of them shall be flogged."

"You are a cruel, unreasonable man!" exclaimed Fan-Fan. "I do not believe the king would permit you to do this if he knew of it."

"You had better go and tell him and see," sneered Hassan. "I know what I am about, and again I tell you to go away."

"I will see the king sure enough, but I will not have to go to him. I will bring him here. Behold, his majesty."

Fan-Fan waved her arms about her head, and in a moment the king came riding up and called out:

"What now? Why are these people tied up?"

"Oh, King!" said Fan-Fan, as she went closer to him. "You know what the season has been. This poor man and his wife have worked hard, but they have no crops to sell, and cannot pay their taxes. Hassan would flog them because they cannot pay."

"Eh? What?" exclaimed the king. "I know it has been a bad year, and it is my order that one who cannot pay need not. It is a cruel thing you would have done, Hassan."

"Abed is lazy and shiftless!" growled the tax gatherer, as he sought to excuse himself.

"He is far from that, as I well know, and to teach you to be more respectful to the poor it is my orders that you be tied up and get 12 lashes on the bare back. As for Abed and his wife, untie them and present them with this gold piece."

The king's orders were carried out, and it will please you to learn that Hassan cried out at every stroke of the lash and felt his disgrace keenly, while Abed and his wife knealt to the king and shed tears of joy, and he gave them his hand to kiss.—Chicago Record-Herald.

MAKING MAPS A FINE ART.

A Novel Method Which Has Been Devised by a Bostonian.

Prof. William G. Ripley of the economics department at the Massachusetts Institute of Technology, has devised a simple and interesting method of building up statistical maps that is likely to make popular a good deal of curious information which has been neglected in the past because there was no inexpensive way of putting it on paper intelligibly and entertainingly.

The old-fashioned method of making graphic maps, as they are called, was to print them in diefrent colors or in different shades of the same color by the lithographic process—which involves a separate printing for each shade and is altogether a costly thing to do. A modification of the principle of the lithographic map was Prof. Ripley's idea. Instead of printing this map in outline first and then printing each shade or color upon it separately, he pasted the various tints represented by shadings in black and white upon his outline foundation and then made plates of the resulting patchwork.

The idea is so interesting and is capable of so manyapplications which are both entertaining and instructive that it is worth describing. The necessary equipment for building the maps is simple—a good map to use as a model, a sheet of tracing paper, a carbon copying sheet and some "stippleboard," which is a kind of paper ruled in fine parallel black lines on a sort of corcuroy surface so that it has a grayish tint. Scraping the stippleboard gently with a sharp knife changes the black lines to dots, so that the shade of gray appears lighter, and rubbing it lightly with carbon or crayon brings out cross lines on the whole sheet. By sufficient scraping or carborn rubbing stippleboard can be made pure white or dead black.

Suppose, for example, a student wishes to depict in such a way that the meaning shall be evident at a glance how public health is dependent upon the quality of the water supply, and how important a factor a good system of water works is. Having settled on the range of percentages which his shades of color must represent, and having divided the statistical figures—which are so meaningless to many people—in accordance with this plan, he first traces from an atlas the outline of the United States with its various subdivisions on his transparent paper and then by means of a carbon sheet transfers it to a piece of stiff cardboard, which is the basis of his final map. Beginning up in one corner of the country, with the state of Washington, he would transfer the outlines of the state to stippleboard and shade it by erasures or by blacking so as to express his statistics of the Washington water supply in accordance with a scheme of tint gradations, each state having its special tint.

Then he would cut out its northern and western boundaries with the scissors, letting the south and east sides go untrimmed, and paste it down in its proper place on the cardboard backing. Proceeding the same way with Oregon and Idaho—except that they must each be of a different shade, of course, in accordance with their special figures—he would stick them down so that they overlapped the untrimmed edges of Washington, just as shingles overlie one another on a root, and thus keep on in the same way until he has shingled the entire map down to Florida, which, being the last piece to take its place, must be cut out on all sides. Rivers and the coast line are drawn in with ink, and wherever the "shingles" overlap into the ocean they are scraped white with a penknife.

If the range of figure is very wide it may be necessary to supplement the four or five shades which it is possible to produce by means of the stippleboard with intermediate tints, and for this purpose paper is specially printed in the required gradations. The interest that can be got out of this simple paste-and-scissors process of graphical statistics by the amateur, the student, the scientist or author is almost without limit for there is hardly any series of facts that cannot be thus pictured. A great advantage of the process—apart from its simplicity—is its inexpensiveness for reproduction.—Philadelphia Record.

High Collars and Weak Necks.

"A remarkable fact," said a Portland haberdasher, "has been revealed by the inauguration among men of very low collars. The fact is that the high, stiff collars heretofore worn have weakened men's neck muscles, precisely as the corset weakens the back muscles of a woman. Several men who bought from me at the beginning of the summer batches of low collars have returned them, with the statement that they are uncomfortable because they don't offer any support to the neck. High, stiff collars are a great support, you see; they relieve a certain set of muscles of the work they ought to do, and these muscles become in consequence flaccid and atrophied. Then, when a low collar is put on, weakened muscles are set to work, and the result is discomfort and pain.—Portland Express.

The Indispensable Telephone.

It is often remarked "How did we ever get along without the telephone?" and in view of some of the statistics in regard to the business done by large retail establishments it was interesting to hear the other day that in a department store recently in one day there were 2000 "busy" calls. In other words, in addition to all the calls which were successful there were 2000 which could not obtain connections. The outgoing telephone business alone of this establishment exceeds 130,000 calls a year.—New York Mail and Express.

AGRICULTURAL HINTS

The Plow.

I was always interested in the study of agricultural implements and the difference in construction of ancient and modern ones, and I suppose it is very interesting to others who are anxious to till their soil and manage their farms in the best manner.

My earliest recollection of a plow at work in the field was one of a side-hall pattern, on the old New Hampshire farm. It was made in Worcester, Mass., and one of the same kind still remains a farm here, of which the writer has charge, and is in very god condition still; but has not been used in years.

The wooden mould board plow, with strips of iron nailed on the mouldboard, which my maternal grandfather used in years long gone by, and with which I used to play at plowing in tender years, would be very pleasing to have now to place beside one of our modern plows. Indeed, what would that grandfather have thought, to have been told that in years to come the soil would be perfectly turned and pulverized with a disk made of steel, and the plowman riding on a comfortable seat beside. Would it not have been a hard thing for him to believe, think you? Wherever it can be used I consider the disk sulky plow one of the finest implements a farmer can own.

Truly, the plow is destined to be improved as much as have many other farm implements, and the soil can be worked in a more thorough manner, and with much greater ease to the team and plowman, than in years past.

We need to clear our fields from all rocks and other obstructions as rapidly as possible, so as to be able to take advantage of labor-saving implements and machines as much as possible.—F. H. D., in the Cultivator.

House for Winter Layers.

The winter layers must be provided with a warm, well-ventilated house for roosting and a light, airy shed for days that are disagreeable. The roosting house contains beside the roosts the nests which may occupy the space beneath the dropping boards, and should be so arranged that they can be taken out and cleaned separately.

Soap boxes make excellent nests, and the straw or hay should be renewed at least once a month. The dropping board should be kept clean, and air slaked lime should be sprinkled over them every few weeks.

Kerosene should be sprayed over the roosts every month, and the interior of the house should be whitewashed at least four times a year.

The scratching shed, which adjoins, should be roomy and light, the front facing the south or southeast.

It should have curtains or large doors for closing during rain or snowstorms, as otherwise the straw and litter will soon become soiled and obnoxious to the fowls.

After having a light breakfast, say one-fourth a full meal, the hens should be allowed to pass to scratching shed, where they will at once begin to scartch and hustle for grain.

Sheaf oats make splendid material for the scratching shed, and will tempt the hens to work long after all the grain has disappeared.

On bright days, even though the weather be very cold, the hens should be made to go out doors at least for a short time.

They may prefer at first to remain indoors, but will soon become accustomed to it, and will enjoy the daily outing.

One thing, and I might say the most important of all to remember, is that hens must not be allowed full meals until late in the evening.

If satisfied early in the day, no amount of coaxing will induce them to work thereafter. They will huddle together and grow fat, but will not lay.

If they refuse to scratch with a partially satisfied appetite, they should be starved into subjection and be given no food except the grain in shed. They will soon busy themselves, and hustling hens are the ones that lay during the winter months.—Home and Farm.

Corn Stalk Disease.

The term corn stalk disease is applied to a disease occasioned by pasturing cattle in stalk fields late in fall or early in the winter. An outbreak, if one should occur, usually takes place in from two to 14 days after the animals are turned upon the stalks. The great majority of cases occur between the fifth and the eighth days. It is also observed that all animals affected die within two or three days of each other. There is nothing in the appearance of the fodder to indicate that it may cause trouble. Cattle may graze and do well on one field, and from 10 to 50 percent be lost on another separated only by a fence. It makes no difference whether the cattle are allowed to graze for only a few hours or left in all day. After one outbreak has occurred a second rarely follows. The disease has never been reported from feeding cut fodder, even when taken from the same field as that in which disease has occurred from grazing. The cause has never been determined, but it is most often observed after a dry season.

The general symptoms are that the animal appears dull, persists in standing in one place, or if he moves, it is with a noticeably perky gait. There is marked prostration; the animal will fall on the knees, and may require several attempts to rise. Some act as if crazy, but the majority are stupid. There is more or less frothing at the mouth, and almost constant swinging of the head from side to side whether in the standing position or lying down. The movements are indicative of pain. The course is of very short duration, from two to 30 hours, the majority living less than six hours. Too often the history is that the cattle were all right in the evening, and from one to eight found dead in the morning. As the cause is not known, and a successful treatment has not been discovered, the prevention cannot be prescribed except by using cut fodder. In a number of outbreaks of supposed black-leg, Dr. Craig, assistant state veterinarian of Indiana, has found this to be present instead. The disease is not contagious and cannot spread from one to another. The occurrence of a few cases in a community should not frighten others to discard the use of the stalk field for feeding.—The Epitomist.

Hay and Pasture Grass.

Grass may be seeded both in the fall and in the spring, much depending upon circumstances. Hay is perhaps the most important article of food for live stock on the farm, and grass is said to be the "foundation of farming." The grass crop may not be as valuable as corn, but it is an article of food for which no substitute can be found, as it gives bulk and quality to the rations, both in the green condition and when cured as hay. There are many excellent and nutritious grasses known, and which can be used by the farmer, but he confines himself to but two or three. Clover and timothy are the grasses mostly used for hay (clover not really belonging to the grass family), and with all that may be said in its favor there are many grasses superior to timothy. Custom, however, has given timothy a prominent place on the farm, and which it will hold for a long time. But, although timothy and clover are grown on the same land, as a mixed crop, yet they do not ripen together, and are consequently not suitable for each other and for producing mixed hay of the highest quality, for if the clover becomes too ripe it will contain a large proportion of woody fibre, while if the clover is cut before the timothy is ripe the latter will not be as nutritious as when fully matured. Orchard grass, which is disliked by many because it "stools," comes into blossom the same time as clover, and will grow on light or heavy soil. It will also stand drought better than timothy, and will give successive cuttings. Timothy is also low in nutritious matter compared with some grasses, and its place can be filled by some kinds without risk of loss.

Pasture grass should be used for pasture only, and not for mowing for hay. If a pasture can supply the stock in summer it should not be required to do more. Another reason why the hay crop should be separate from the pasture product is that the pasture should contain as many varieties of grass as possible, some of the best kinds being profitable if grazed, as they do not grow to sufficient length for being cured as hay. Pasture grass should be short, because the animals will prefer it so, as they can then better select the kinds prepared. The young and tender grass, only a few inches high, is always more highly relished than any other, and if a pasture is to be occupied by the stock they will keep the grass down. No farmer, therefore, should expect a crop of hay from his pasture ground. The meadow is depended upon for producing the hay crop, but the meadow is also given up to the animals at times. The point is not to take advantage of the meadow, but to make it better, by increasing the variety of grasses. A variety having some fault should not be condemned if it also has merit. Orchard grass comes early in spring, it will remain for several years, and it thrives where some grasses could not exist. Herd's grass is excellent on meadow land that is somewhat moist. Its running roots soon form a thick and permanent sod. Blue grass can be made to thrive on many soils, preferring limestone land, and it is a grass that gives the best late pasturage, but it should not be grazed too closely early in the season. Adapt the grasses to the soil if possible.

There are a great many kinds of hay crops that need not be grown together in the fields, as they can be mixed in the feed box when cutting the feed for stock in winter. Clover is the main hay crop, but such a crop as Hungarian grass, which grows in the summer, and in a short time, will add largely to the supply of hay, and experiments made show that cow peas and oats, cut when not too ripe, will give good yields of hay that may perhaps be better than clover in some respects. One of the most valuable crops, in proportion to cost, is cow peas and corn. Plant the corn in rows and plant the cow peas in the same row, but between the corn hills, the corn being one foo apart in the rows. Cultivate one way and allow the pea vines to grow upon the corn. It may be mentioned that such a mixup crop may be harvested at any time. It adds variety to ensilage and the ensilage will be more nutritious and also more highly relished by stock in winter than if the ensilage is made exclusively of corn. But the farmer should study grasses and hay crops, for there are kinds that thrive on rich soils only, while others will grow on sandy soils, damp soils, medium soils, etc., and if they cannot be grown together they may be grown on different fields. The greater the variety the less the liability of loss during the dry season, as some hay crops will give good results while others fail under the same conditions.—Philadelphia Record.

A square foot of real estate is worth a dozen castles in the air.

New York City.—Waists made with tucking that gives a yoke effect yet allows fulness over the bust always are becoming to young girls. This attractive and stylish May Manton bodice combines that feature with a collar and V-shaped portion of lace that is outlined by the fashionable strap. The sleeves are among the latest and add to the effect. The original is made of chiffon eolienne, in pastel rose, and is stitched with corticelli silk and combined with cream-colored point de Venise, the strap and belt being of velvet in a darker shade than the waist. All waist and dress materials are, however, equally suitable; wool crepe albatross, cashmere, simple silks, veiling all being in style and desirable.

MISSES' WAIST.

The waist consists of a fitted lining that closes at the centre back, the front, backs and under-arm gores of the waist proper. The backs are tucked for their entire length and fit smoothly without fulness, but the front is tucked to yoke depth only and is gathered at the waist line to blouse becomingly at the belt. The V is faced onto the lining and the trimming is applied over the waist. The sleeves are arranged over fitted linings and consist of the caps, the tucked puffs and cuffs.

The quantity of material required for the medium size (fourteen years) is three yards twenty-one inches wide, two and a half yards twenty-seven inches wide, or one and three-quarter yards forty-four inches wide, with three-quarter yards all-over lace and three-eighth yards of velvet to trim as illustrated.

Woman's Blouse Waist.

Blouse waists that include wide vertical tucks and are made with Hungarian sleeves are much in vogue and are very generally becoming as well as fashionable. The stylish May Manton example shown in the large drawing is made of pale pink peau de cynge, stitched with black corticelli silk and trimmed with applique of black silk and fancy buttons, but all soft, pliable waist and gown materials are equally suitable and the design suits both the odd waist and the entire costume. The pointed straps make a feature and a novel one, and both stock and cuffs are new and desirable.

The waist is made over a smoothly fitted lining that closes at the centre front and itself consists of fronts and back. The back is tucked to the form of a V to give the fashionable tapering effect to the figure. The fronts also are tucked and are closed invisibly beneath the innermost tuck at the left side. The back is without fulness, but the fronts blouse slightly and stylishly. The sleeves are made over fitted linings and consist of the tucked upper portion, full puffs and the pointed cuffs. The stock is finished separately and closes at the centre back.

The quantity of material required for the medium size is six yards twenty-one inches wide, four and a half yards twenty-seven inches wide or two and a half yards forty-four inches wide.

Dainty Negligee.

It is quite the vogue with many women of taste to wear as a negligee a silk skirt and dressing sacques to match, in the place of the robe or gown. Many of these skirts and sacques are made of pale blue, pink, lavender or old gold China silk, with a deep flounce; the skirt, as well as the sacque, trimmed elaborately with bands and "insets" of white, cream or butter colored laces. Those made of white China silk, with butter colored lace and black velvet ribbon, are extremely dainty and stylish.

Lace Novelties.

Most of the entire lace skirts are ornamented with ovals in ivory painted velvet. Pretty well everything we have is trimmed with lace, even leather slippers and card cases. Chamois tinted moire mingles with Irish point. The time was when we only introduced Chantilly or white lace into the fronts of silk stockings; now they figure on Lisle thread and find great approval.

Woman's Blouse or Shirt Waist.

Shirt waists made with slot seam and broad box pleats are among the novelties of the season. This very smart model includes them both with the fashionable straps at the shoulders and centre back. The slot seams at the back are peculiarly desirable, as they are laid to form a V and give a tapering effect to the figure.

As shown the waist is of pale blue albatross with bands piped with black liberty satin and stitched with black corticelli silk, and is closed by means of large gold studs, but all waisting materials are appropriate. Cheviot, madras and all washable fabrics are admirable unlined, while the many light weight wools and silks give every satisfaction over the fitted foundation.

BLOUSE OR SHIRT WAIST.

The waist consists of a smoothly fitted lining, which is closed at the centre front, but separately from the outside, the fronts and back of the waist proper and the bishop sleeves. The back is without fulness, but the fronts are gathered at the waist line and blouse becomingly over the belt. The slot seams are laid in at the shoulders and extend for the entire length of the waist and the fulness at the front is arranged in small pleats at the neck. The trimming straps are applied and stitched to position. The sleeves are in bishop style with pointed cuffs that are held by studs which match those at the front. At the neck is worn a stock of black liberty finished with a bow tie.

The quantity of material required for the medium size is four and a half yards twenty-one inches wide, four and

BLOUSE WAIST.

a quarter yards twenty-seven inches wide, four yards thirty-two inches wide or two and a half yards forty-four inches wide.