THE WINTER STYLES

MILLINERY DESIGNS NOW AWAIT THE APPROVAL OF PATRONS.

Everything in Overgarments Runs to Fur—Jackets of Sable Long Sealskins—Cloth Lined With Fur—Boas and Capes Also—New Millinery.

It is to be hoped, for the sake of he people who have designed the fascinating fur garments that are fashionable this year and also for the buyers thereof that we may have a cold season, for it is extremely doubtful if there are many women who can afford to buy these costumes and garments who will have the strength of mind to resist them. Never before have there been so many attractive novelties to be seen. A great deal is said about a fur coat being a poor investment in New York, but it might be noticed that just as soon as the cold weather begins fur coats are seen by the thousands, and even the women who have bought smart cloth gowns think it best occasionally to don their fur jacket or cloak. This year there are so many shapes and styles that it would be hard for every shaped figure not to find something that is becoming.

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There are a great many Eton jackets of fur, and it is surprising how long this popular style of coat has remained in favor. It used to be an unbecoming style except to a tall, slender woman, but made as it is now it is possible

Some New Style Hats.

for a stout woman to wear it and to look well. One of the newest shapes is made short at the back and with a sharp curve to the front, which hangs straight and loose, thus accentuating the fashionable figure, which requires the waist to be high at the back and long in front. These jackets are double-breasted and look well when worn open and turned back like a blazer coat. Then there are others that have a short basque cut in a point, but have the same straight fronts and a high flaring collar. Then there are others again that are tight fitting at the back, have long-shaped revers in front and a tight-fitting waistcoat of some other fur. This looks especially well in Persian lamb and sealskin—either the coat of sealskin, with a Persian lamb vest, or vice versa, and with fancy buttons or rhinestones or jewels. Miss Cameron, the daughter of Sir Roderick Cameron, wore one of these coats last season fastened with buttons of turquoise surrounded with diamonds, and it was the smartest coat of the kind that has been seen in New York. This season, however, it has many duplicates.

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Jackets are made of sable and mink, also on the Eton plan; but these furs are so much longer haired than the sealskin or Persian lamb that they are not so generally becoming. As is well known, there is a variety of choice in the Persian lamb and Astrakhan. The unborn lamb looks like a fine satin moire, and the garments made of it are exceedingly beautiful, but it is an expensive, perishable fur, while the lamb itself wears well. The Astrakhan, which is really another variety of the lamb or goat of the same species, has not been so fashionable until this year, but it is used much now in trimming and in entire jackets, in white and black. The white, of course, is used only for trimming. One objection the exclusive people have to the Astrakhan is that it is imitated so closely in a sort of plush or velvet, but this is rather a foolish criticism and does not materially affect the fashion.

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Superb long coats of sealskin, Persian lamb, sable and mink are remarkably becoming, some of them, while others are absurd caricatures. One design, in sable or mink, looks like an Eton jacket, with a long skirt attachment. This effect is gained by the markings of the fur. The skins of the jacket are put on so that the stripes run around, while in the skirt part they go up and down. It is a trying garment, but so expensive it is bound to be fashionable for a time, and in all justice it must be said that on a tall, slender woman, who enjoys the enviable faculty of putting on her clothes well, it is stunning. The long coats of sealskin fur are made in the shape of box coats, but long. They have three seams in the back, are shaped at the side seams, are fastened to the throat and have one rever that falls in jabot fashion.

Capes and collars are without number, many that are so like last year's that only an expert could see any difference between them. The new cloaks, however, are not so scant as they were last year and many are made without the ruffle or flounce. The medium length is popular in all the fur cloaks, and there is a high collar on everything, one that will stand up or lie down and yet look well under both conditions.

Cloth coats lined with fur are exhibited with the furs, and, strange to say, are comparatively inexpensive. Not only is the fur-lined circular to be bought for a reasonable price, but there are many cloth cloaks and capes that are smart and are lined with good furs, while there are some fine coats in the box style lined and trimmed with fur which do not cost as much as the all-fur garment. It seems to be one of the fads of the season to have the coats fastened tight in the throat and made with one rever. This fashion is not as becoming to most people as when made with two revers and open in V-shape, nor is it half as healthful, for, as most of the coats are double breasted, it makes two thicknesses of fur—four, indeed, for the revers are faced—just at the throat, which is not to be recommended.

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Long boas and pointed capes, with square, long tabs in front, are fashionable also. The boas are more fashionable than they have been for some time, and are made of all the furs, but with a preference in favor of the long-haired. Both the cub and the bear fur is to be used greatly. The grizzly, the black and the cinnamon bear are all doomed, judging from the number of boas made of these furs that are exhibited. The silver fox is to have a little rest, but the blue fox and the gray fox are to be hunted to death, for everybody must needs have some neck piece made of these furs, and with, of course, a muff to match. A great many imitation furs are on the market and such good imitations that it would require an expert to pronounce upon them. They are much cheaper, and, while they will not wear as well, can be relied upon to do duty for two or three seasons, so where a slender pocketbook has to be considered, it is well worth while to look at these imitations, although imitation furs must be bought with great caution.

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New millinery frankly is in the trial stage. A round of the shops with an eye especially to dress hats has revealed certain positive conclusions, but the fashions generally are not yet set.

"Ah! if we only knew what the ladies will buy!" sighed to me lately the clever conductor of a famous millinery department. She was just back from Paris, with no end of trunks filled with lovely things.

"At present," she continued, "all we can do is to show the models, and await the comments of the feminine public. I think"—with a complaisant smile—"that pokes in one style or another will be chosen by those who want to be known as fashion leaders. Women must have one or another variety in picture hats for carriage and special use, and I believe that they will go in for the poke, or 'cabriolet,' because it is new and distinguished. The 'Gainsborough' can be worn at any time.

"We best get at the feeling in dress hats at this season by noting what prospective bridesmaids select. For fashionable noon weddings we are making up many cabriolets, especially in pink. Pink miroir velvet with three large pink ostrich tips, set high, is a favorite bridesmaid's model.

"Strings? No, not usually. The

The Latest in Long Cloaks.

French woman likes strings to her poke bonnet, but the American does not take to them so readily. When ties are used here they are of the color of the bonnet itself, and made from tulle. A pretty effect for a bridesmaid is that which comes from leaving tulle strings hanging behind, quite untied and absolutely unmussed. The strings suggest the bride's veil, you see. However, young women generally prefer the bridesmaid hats or bonnets without ends."

The Golf Cape.

Hundreds of women wear golf capes that have never played the game. They are the most convenient wraps to be found. That is probably the reason they are so much worn, and then they are stylish. They can be found in almost any color and the styles vary, too. Some have not the deep collars and some do not have the pointed hood. The later ones are made without the hood.

Spiders Set to Work.

French ingenuity, active enough where war is concerned, has solved the problem of making spiders weave ropes for military balloons. These ropes are said to be higher in proportion to their strength than any others which have been tested. The best balloon cords have previously been made of silk.

The peculiar industry is carried on at Chalais-Meudon near Paris.

Twelve spiders are placed above a reel to which their threads are attached and the reel is gently revolved while they spin the thread. They are allowed to spin some forty or fifty yards before stopping to rest. The united strand is washed to relieve it of its sticky envelope and then united with others until a tiny cord, light but very strong, is the result.

Woman Real Estate Agent.

Miss Martha Moody, of Brooklyn, is a genuine real estate agent. She began in her father's office as "office girl," because she wanted to learn all the business. She is now acting supervisor of the company.

Mrs. Ada Van Pelt, of California, has invented a permutation lock with three thousand combinations; also a letter box for the outside of houses that throws up a signal when there is a letter inside for the postman to collect.

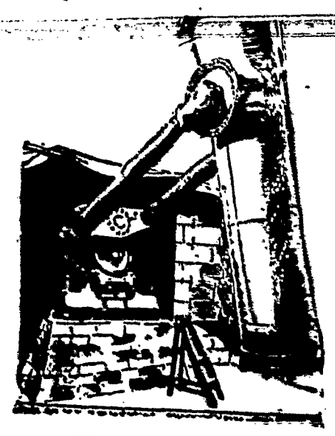
WONDERS OF HEAVEN

THEY WILL BE REVEALED BY THE NEW TELESCOPE.

It Fulfils Expectations—Focal Length of One Hundred and Seventy-Five Feet—More Money Needed to Complete the Experiments.

Professor Edward C. Pickering, director of the Harvard College Observatory, and one of America's most eminent authorities on astronomy, has in course of construction in Cambridge the longest, and what he believes will be, when finished, the most powerful telescope in the world.

Professor Pickering has originated some of the most useful apparatus known to scientists, and he believes that the success of his newest projected telescope, which is to have the greatest focal range of any instrument ever designed, will be comparatively as great as the success which attended the introduction to the world of science of the Bruce telescope, an in-



The Bruce Telescope.

strument which Professor Pickering designed, and which is the shortest telescope, as well as one of the most satisfactory for celestial photography that is to be found anywhere in the world.

The Bruce telescope is now being employed making observations in Arequipa, Peru, and Harvard College Observatory has just received from there a series of the most successful photographs of the heavens yet taken. At the observatory Professor Pickering showed the writer a plate which had just been unpacked, taken by the Bruce telescope, on which, with a surface of about fourteen by eighteen inches, the reproduction of 400,000 stars, taken at a single exposure, is visible.

Bruce Telescope Fulfils Expectations.

Professor Pickering considers the work of the Bruce telescope to have amply justified his judgment in designing it, and he expects equally satisfactory results from the long focal telescope which he has designed and which he desires to construct.

The Bruce telescope was rendered possible by the generosity of Miss Catherine W. Bruce, of New York city, who gave the Harvard observatory $50,000 for the purpose of carrying out the new ideas of Professor Pickering with reference to the construction of a telescope which should differ radically from all the accepted traditions and customs of the telescope builders of the world.

Professor Pickering explained to Miss Bruce that the construction of the telescope which he proposed to build would be only an experiment, but that he believed it would be a success, and in the interests of science she made her generous gift. The Bruce telescope was constructed at the factory of the late Alvin Clark & Son, Brookline street, Cambridge, the noted builders of telescopes and designers of lenses. It has a twenty-four-inch aperture and a total focal length of only twelve feet, the shortest of any recognized telescope yet constructed.

So much has been accomplished with the Bruce telescope that Professor Pickering is now particularly anxious to improve upon it by constructing a telescope which, it is purposed, shall have an aperture of only twelve to fourteen inches, but which shall have a focal length of approximately one hundred and seventy-five feet. The only thing which Professor Pickering regards as an obstacle standing between his desires and the accomplishment of them in the matter of building the new telescope is the question of money.

Has the Lenses Already.

Professor Pickering is so confident that he will be able to build the proposed new telescope that he has already purchased, and brought on to Cambridge, from Paris, the lenses which he intends shall go into the new instrument, and they are now at the Brookline street factory. Professor Pickering has issued a circular to the friends of Harvard observatory, in which he states that, whereas the cost of the Bruce telescope was defrayed by a benefaction of $50,000, the total cost of the telescope which he desires now to build will not exceed $5,000 to $10,000.

The lens of the new telescope will be much smaller than that of the famous telescope at the Yerkes observatory, at Geneva Lake, Wis., for that is forty inches in diameter and the largest in the world, but Professor Pickering anticipates obtaining some results with the new instrument which neither the Yerkes nor any of the other famous telescopes has been able to give. The Yerkes telescope, with its forty inch lenses, has a total length of sixty-seven feet, the greatest yet constructed. In Paris they are building a telescope which will be in all ways greater than (as regards figures on dimensions) the Yerkes telescope, for it is to have a lens fifty inches in diameter and be something over one hundred feet in length.

The Yerkes telescope is an equatorial telescope, while the larger one, which it is expected to have ready next year, is to be a horizontal telescope, as will be the 175 foot long one which Professor Pickering has started to construct, and which he hopes to have funds to complete by some time next year, possibly in time to observe the eclipse of the sun, which is to be total in the United States at points south of Maryland.

That friend of science who provides a fund of from $5,000 to $10,000 for completing the new telescope will be honored by having the telescope named after himself, or herself, as was the case with the telescope for which Miss Bruce, of New York, gave $50,000.

As a means of showing some of the advantages to be derived from the employment of the proposed telescope, with its extreme focal length, Professor Pickering drew a comparison between what can now be done in the way of heavenly observations and photography by explaining that with the eleven inch photographic telescope with a focal length of about eighteen feet, which is now in use, the maximum diameter of a photograph which it is possible to take of the moon is only an inch and a half. Using the new photographic telescope, with a plate of the same dimensions, it would be possible to secure a photograph of the moon which would practically fill the plate, or be about eleven times as large in diameter as the one which can now be taken. In addition the larger photograph would give a wealth of detail which is impossible to be obtained by any other means.

Greater Detail Will Be Obtained.

The diameter of the lenses in the new telescope, however, will be larger than the eleven inch size now much used in the leading observatories of the world, for it will have an aperture of twelve to fourteen inches. The telescope will be placed horizontally, and the plate by clockwork. It will thus become a large horizontal photo-heliograph, and will be especially useful in photographing the fine details of the sun's surface at the time of the total eclipse of the sun, May 28, 1900. The images of the moon secured with this telescope will, it is calculated, be about a foot in diameter, and, although printed without enlargement, will far surpass the best photographs of that body yet taken.

It is also believed that surprising results can be obtained with Jupiter, Saturn and Mars, and next year it is believed that when the planet Eros again approaches the earth it will be of the highest value in solving the great problem of astronomy, the exact distance of the sun from the earth.

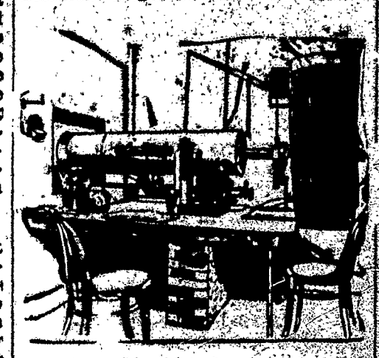
The focal length of the new telescope being more than one hundred times the aperture, its possibilities are almost beyond conception—certainly beyond accurate calculation—as the instrument is confidently expected to bring to light discoveries in astronomy as to which scientists have been only able to make conjectures heretofore.

Speaking of the new telescope and of telescopes generally, Professor Pickering said: "The Bruce telescope is well adapted to investigations in which the focal length is small. It will, therefore, be interesting to try the effect of a great focal length. It is proposed to build a telescope now with an aperture of twelve to fourteen inches and a focal length of 163 to 175 feet.

"This telescope would be placed horizontally. This method of mounting a telescope for use on the stars was advocated by me in 1861 and has been used here since then with successive telescopes of two, four and twelve inch apertures. The instrument now proposed would be adapted to investigations for which a great focal length would be needed, as the latter would be more than one hundred times the aperture. Several such investigations may be suggested, any one of which if successful, would amply justify the construction of the instrument.

Photographing the Sun.

"The best instrument now in use for photographing the sun, the horizontal photo-heliograph is a small instrument of this form. It is possible that under favorable atmospheric conditions, finer details on the sun's surface could be obtained with a large instrument than have yet been photographed. It would be equally useful in photographing the protuberances. Preparations must soon be made for observing the solar eclipse of May 28, 1900. This instrument might be useful in photo-



The Proposed New Telescope.

graphing the spectrum of the reversing layer, and in showing the details of the inner corona. The planet Eros approaches the earth so closely that its parallax sometimes amounts to a minute of arc. The next approach, in 1900, will be more favorable than any other until 1927. Careful preparations should, therefore, be made for observing Eros when east and west of the meridian, since the distance of the sun can probably be determined with more accuracy in this way than by any method of observation yet attempted.

Expects Astonishing Results.

It is not unreasonable to presume from Professor Pickering's guarded statements that the results which the new telescope will produce will be even greater, comparatively, than those of the eminently successful Bruce instrument.

The new telescope will be one of the wonders of the world, 100 feet longer than the great Yerkes telescope, and nearly 100 feet greater in length than the one they are building in Paris. In comparison with the twelve foot long Bruce telescope it will look as big as a thirteen-inch gun by the side of a mortar. Its range, however, will be vastly greater than that of any telescope in the world, and science will, it is believed, take great strides forward through its development.