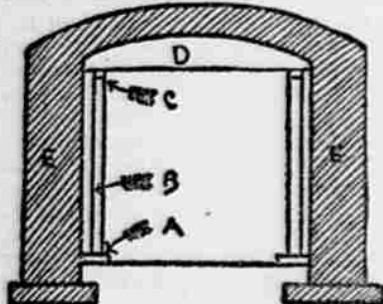


TO BUILD CONCRETE ARCH.

**Strong and Lasting Structure Comparatively Inexpensive.**  
S. S.—Please tell me how to use concrete in building arches over streams and under main roads.

Where the span is not more than ten feet the arch can be moulded all in one. When the diameter is greater the concrete should be moulded into blocks and then laid up the same as stone. If the culvert is not more than five feet wide, the arch may be put on flat, but if wider it should have a little crown. The plan shown describes the mode of building an arch. It has a 2 by 12 inch plank on the bed of the stream; on this stand 2 by 4 inch upright, which should not be



Concrete Arch Over Stream.

A, 2 by 12 in. plank; B, 2 by 4 in. upright; C, 2 by 4 in. scantling on top; D, center supporting arch; E, concrete.

more than 2 1/2 feet apart; on top of this a 2 by 4 inch scantling is laid lengthways of arch; then a center cut out of the plank, or inch boards and covered with inch lumber to hold the arch. The earth should be well rammed around the wall when filling in.

Fitting Rafters on a Barn.

E. N.—I am building a barn 80 by 32 feet, and wish to put on two sets of rafters, to meet at the perline plate. What length should the rafters be and how should they be fastened?

Each set of rafters should be 12 feet long. The lower set should project one foot over the lower plate. These should be sawed so as to sit squarely on the plate, the projecting foot to be two inches deep. The upper end of the rafter rests on the perline plate, and the lower end of the upper rafter lies beside it. The top sides of the two rafters should be flush. The upper rafter fits on the perline plate with a tongue on the lower side to drop down on the inside of the plate to form a brace. The rafters are all spiked to the plates if necessary. The lower rafters should have a 9-foot rise and the upper ones seven.

Clearing Land of Willows.

Subscriber.—I have some water willows on my farm. I have cut them down, but they grow up again. I think they will have to be dug up. What is the best way to get rid of them?

Cutting willows down will not kill them. Osier beds can be cut for a great many years for the osiers without doing the roots any harm. The only way to get rid of willows is to root out each bush. The easiest way to do this is to hitch a chain round the bush near the bottom and then drag it out by the roots with a horse, after loosening the bush by cutting some of the main roots with an ax. Many acres have been cleared in this way in Manitoba, and it is found the most convenient way of doing the work. If the bushes are not very large the land may be burnt over and then plowed with a heavy scrub plow.

Cement for Kitchen Walls.

I want to put up a concrete kitchen, 16 by 20 feet, and 14 feet high; the end will join the present building, leaving three sides to build, two sides 20 feet long, and the end wall 16 feet, with gable ends. How much gravel will be required and how much cement, the wall being six inches thick?

Your wall would require 19 barrels of natural rock cement and 15 yards of gravel, making the concrete one of cement to one of gravel; or, if Portland is used, 14 barrels would do the work, making the concrete one of cement to seven of gravel. This estimate is given on using all gravel (no stone for fillers) as the wall, being only six inches thick, very little stone can be used.

Support for a Chimney.

A. E. B.—I wish to build a brick flue 18 feet high, 30 bricks to the foot. I want it to rest on a floor having 4 by 6 inch sills, 12 feet long and 16 inches apart. If the sills rest on the 6 inch sides would they be strong enough to bear the weight?

If the chimney is built at the end of the building so that it rests on end of the joists these will provide sufficient support, but if it is built in the center of the room supports should be provided immediately underneath. If the chimney starts from the ground floor a small abutment can be built under the joints or sills, which will hold the weight.

Every man knows how a wife should be managed, but few are able to do it.

We don't know what is meant by "straining at a gnat and swallowing a camel," unless it is that a girl of 16 scorns all but a prince and ten years after swallows a carpenter.—Atchison (Kan.) Globe.



Signora Duse's Worries.

The lives of some few actresses may lie in pleasant places. But not that of Signora Eleonora Duse. The Italian actress, it may be said without excessive exaggeration, was born in a railway carriage and has been uneasy ever since.

Now she has arrived in Paris and will there consult the best French physicians, with regard to an attack of influenza which affected her lungs, and from which she has never quite recovered. She lives in complete retirement, seeing no one, avoiding all fatigue, and doing her best not to think of things theatrical. She refuses to speak of anything concerning the stage, and so anxious is she to divert her thoughts from her profession that when she goes out she will not pass before a theater if she can help it. If the theater has brought her her greatest triumphs, it has likewise been the cause of much sadness to her, and she has recently fallen into a profound melancholy. Her friends are few in number, and she refuses all opportunities of making new acquaintances. She constantly keeps near her a statuette of Prosperpine. The pagan deity has a peculiar fascination for Signora Duse, who has invested her with a mystic charm, and believes she has discovered in her points of resemblance to herself.

Belasco's New Undertaking.

David Belasco has another big production in view. He has accepted for staging an oriental drama by Joseph Arthur. The piece was copyrighted some months ago in England under the title of "Seirine," but will probably be done here under the name of "Cross and Crescent." The author submitted the manuscript to another firm of producers, and according to the report it was in this firm's hands for eleven months, the promise of

"The Man From China," by Paul West and John W. Bratton, was produced at the Majestic Theater, New York, last week, with great success.

Clyde Fitch is to write a society play for Blanche Walsh, to be completed on the first of January. Mr. Fitch will have four plays in operation next season.

Robert Mantell is planning to revive Sardou's "Fedora" next fall, and will appear in his original part of Loris. He will appear in New York in "Hamlet," Oct. 5.

The announcement comes from New York that Albert Brunsing will replace George Arliss in the Blanche Bates production of "The Darling of the Gods" next season.

Charles Richman, who is at present in the all-star revival of "The Two Orphans," has been reading a play with the intention of starring after his present engagement.

Hamlin Garland's "Hesper" is being dramatized for the use of William Faversham next season. Channing Pollock is doing the work and its title will be "For Love of Hesper."

Robert Edeson, who has just concluded his season in "Ransom's Folly," is to present a new play of American life next season. Its first performance will occur in January.

Ralph Stuart, now starring with great success in "By Right of Sword," will produce a new play during his engagement in Portland, Ore., Los Angeles and San Francisco called "A Son of Bohemia."

Robert Hilliard, Jr., a student at Annapolis, and son of the well-known actor, participated in amateur theatricals at the Naval Academy last week, and is said to have shown evidence of the possession of dramatic talent.

John Wesley is about to sever his connection with the Proctor Stock company, of which he has been a valuable member for the past two seasons. Since his debut Mr. Westley



BESSIE DE VOIE IN WIDETELLE

production being constantly made. Mr. Arthur finally grew weary of the delay and turned to Mr. Belasco. The piece, it is said, was immediately accepted and the gifted producer declares that the mounting will be the most elaborate and beautiful he has ever achieved. The scenes of the piece are laid in India in 1606, and are in or around the ancient capital of Agra during the reign of Emperor Jehangire. The scenic and sartorial possibilities of the piece are declared almost limitless, and Mr. Belasco promises to achieve something truly exceptional.

With the "Gallery Gods."

During a recent performance of "Parsifal" in Newark, the actor who played the name part, wore squeaking shoes. When he ascended or descended a high flight of stone stairs the music of his heels called forth reminiscences from the gallery:

"A new pair of shoes for yours!" was shouted at the star. The "gallery gods" applauded wildly when Parsifal declaimed—after the duck hunting—"I bow the knee to no King save one, the Redeemer." Later, he remarked: "Blessed be he who trusts in the Lord;" also, "Nothing can be done without the help of the Redeemer."

This bit of dialogue was overheard in the foyer: "What do you think of the show?" "Fine!" Them blokes over at the Metropolitan may put up more money to see it, but, say, ain't Mrs. Prinker the real thing?"

Among the Player Folk.

W. S. Gilbert is preparing to write a new comedy for the London Garrick theater.

Jeff de Angelis is the Marks in William A. Brady's revival of "Uncle Tom's Cabin."

A new tragedy based on "Francesca da Rimini" is being written by a Boston author for Nance O'Neil.

Amelia Bingham will head the stock company that is to play at the Broadway theater in Denver, Colo., this summer.

has played more than two hundred parts.

Joseph Brooks is to produce "Home Folks," a new play by the author of "In Old Kentucky." The drama was suggested by James Whitcomb Riley's poem. Its first presentation will be at the New York theater on next Christmas day.

Lillian Russell denies the report circulated that she will star next season in a comic opera called "Lady Teazle," founded upon "The School for Scandal." The book is by John Kendrick Bangs and the music by A. Baldwin Sloane.

Charles Frohman has managed to bring Sir Charles Wyndham and his entire London company for a season at the Lyric theater, New York. He will open with "David Garrick," and this will be followed by "Mrs. Gorringe's Necktie" and a new play by Henry Herbert Davis.

Sarah Truax, who played in "The Eternal City" last season, of which attraction E. J. Morgan was the star, made a speech in Pittsburg recently in response to persistent calls from the audience, and as a result Miss Janet Wulford will take her place in the company next season. Mr. Morgan claims he was the only one in the company who had the right to do the speechmaking.

W. W. Denslow, the clever illustrator of children's books, whose "Father Goose" and "Wizard of Oz" have been delighting the little folks for the last three or four years, has just returned to New York from his winter home in the Bermuda Islands and has settled down to put the finishing touches to an extravaganza upon which he has been working industriously for many months. He will have the assistance of Paul West, the lyric writer, and John W. Bratton, the composer of popular songs. The new piece is to be called "The Pearl and the Pumpkin," and will be in three acts—the first two laid in this country and the last in Bermuda. The scenes and the costumes have already been modeled, and it is expected that the first performance will take place in New York next November.

TOOK HIS CUE FROM SOLOMON.

Illustration of Impossibility of Dividing Cat Stopped Family Row.

An amusing incident occurred recently in the home of a Chicago family. Pussy Smith is a monstrous cat, a great pet, especially with Flossie, eight years old, and Jack, four years old. One night after dinner both wanted to carry the cat upstairs.

"It's my cat!" declared Jack, stoutly, which was true.

"But I carried him from the country, and anyhow I'm the biggest," said Flossie determinedly.

"And I'm the littiest," Jack put the animal over one shoulder and started for the stairs. Flossie halted him. Dreadful sounds followed, stormy words interspersed. Papa Smith hurried to the scene of battle. "Children!" shouted he, "put the cat down; we'll settle this by business methods. Who pays for the cat's board anyhow?"

Flossie and Jack were puzzled. "Neither of you owns that cat," added the father. "I pay his board; your mother cares for him; you merely own half shares. Jack, carry your half upstairs; Flossie, carry your half. Never again must I hear such a disturbance."

Without a smile those children slowly, laboriously lugged the cat as suggested. Pussy's head held by Jack, the body by Flossie. There has been no further trouble.

SPEED OF TORPEDO BOATS.

Depth of Water Has a Great Effect Upon Power Needed in Operation.

The recent tests of torpedo boats in the Bay of Dantzig, Germany, have resulted in the ascertainment of some facts regarding their navigation not hitherto known. The particular object of these experiments was to ascertain the influence of the depth of the water on the speed of the boat. It is stated that up to a speed of twelve knots an appreciable influence was observed, but from fifteen to twenty knots the unfavorable character of the influence increased in proportion to the diminution of depth. In shallow water—about two fathoms deep—twice as much power was required of the engines to get the speed easily obtainable in deep water.

With an increase of speed, the strange fact was remarked that conditions unfavorable to the boat's way were no longer apparent in two fathoms, but rather at a depth of four or five, and better results were obtained in shallow water than in twenty fathoms. In consequence of these observations the government naval architect, Herr Paulus, at a recent conference of marine engineers, proposed to petition the admiralty to allow of the experiments being repeated with considerably larger warships.

Vast Wealth of Greek Church.

The chief procurator of Russia, in a late report to the czar on the state of Russian religion, brings out the fact that the power and wealth of the Greek church are immense. There are 66,780 of these churches in the empire. During the last year 833 new places of worship were consecrated. In connection with these churches there are 16,658 monks and 36,146 nuns. There are 2,050 head priests and 43,743 ordinary priests. These, together with 58,156 deacons and under-deacons, make a grand total, along with seven other divisions, the figures of which are not given exactly, of 170,000 persons in official positions. A sum of nearly \$6,000,000 was paid by the Russian people last year for the support of this vast organization.

He Couldn't Guarantee Ownership.

"It is embarrassing sometimes to pursue a direct line of questioning," said President Eliot of Harvard in telling about a recent visit to New York. He just had dined at a hotel in Fifth avenue where the man who takes care of the hats at the dining room door is celebrated for his memory about the ownership of headgear.

"How do you know that is my hat?" the collegian asked as his silk tie was presented to him.

"I don't know it, sir," said the door man.

"Then why do you give it to me?" insisted President Eliot.

"Because you gave it to me, sir," replied the darkey.

He got his quarter of a dollar.

Tyranny of Chinese Cooks.

In California Chinamen are considered the most efficient domestics, but they are also the most independent. On the Miller & Lux ranches, or whose ground it is said to be possible to travel from one end of the state to the other, Chinese cooks are only allowed to remain six months. This general order was given years ago to prevent the cooks from obtaining too firm a tyranny over the individual ranches.

Love is the Key.

Love is the key of life and death. Of hidden heavenly mystery; Of all Christ is, of all he suits. Love is the key.

As three times to his saint he said: He saith to me, he saith to thee. Breathing his grace-conferred breath. "Lovest thou me?"

Ab, Lord, I have such feeble faith. Such feeble hope to comfort me. But love it is, as strong as death. And I love thee.

—Christian G. Rowlett.

American Wheat Exports.

The export of American wheat to Great Britain last year, as compared with 1902 fell from \$8,000,000 to \$4,000,000 hundredweights, while that of Russia increased from 6,500,000 to 17,000,000; that of Canada from 12,000,000 to 14,000,000; that of India from 9,000,000 to 17,000,000, and that of Argentina from 4,000,000 to 14,000,000. Argentina had a great excess of wheat last year, but Russia had not.



HINTS

Hand Made Shirtwaists.

A very fashionable white crepe waist has its front, stock and cuffs embroidered with clusters of small, pink roses and forget-me-nots in ribbon embroidery. The bunches of flowers have their leaves and stems done in pale, dull shades of green and golden brown. The bunches of flowers are connected by and interspersed with little bowknots and loops and ends of ribbon. This ribbon effect is produced by outlining the supposed ribbon with a single gold thread and working small black dots in embroidery silk, about an eighth of an inch apart between the gold lines. The effect is that of a dainty and novel ribbon. It is no wider, and probably not as wide, as baby ribbon.

Woman's Box Coat.

Loose box coats make exceedingly smart wraps that are eminently comfortable as well. This one is adapted to all the range of cloaking materials, but is shown in tan colored cloth with touches of darker velvet and is stitched with corticelli silk. The special features of the model are the mandolin sleeves and the additional lapels which are exceedingly effective. When liked, however, plain sleeves can be substituted for the larger ones, as shown in the small sketch.



The coat is made with fronts and backs and is shaped by means of shoulder, under arm and center back seams. A pocket is inserted in each front and the closing is made invisibly by means of a fly. The extra lapels are applied under the fronts sleeves are cut in one piece, each and are finished with plain cuffs, but the plain sleeves are in regulation coat style with uppers and unders.

The quantity of material required for the medium size is 4 1/2 yards 21 inches wide, 2 1/2 yards 44 inches wide, or 2 1/2 yards 52 inches wide, with 1/4 yard of velvet to trim as illustrated.

Dainty Corsage Sachet.

The heart-shaped corsage sachet of white satin is to wear around the neck beneath the lingerie. The ribbon edge and bow make a pretty finish, and it is suspended by a ribbon. Another corsage sachet on this order consists of two pads about two inches square, with a small bow in the center of each. They are fastened to the ends of a strip of baby ribbon. For the Japanese sachet, made of Japanese silk, a bag 2 1/2 by 3 inches, and in the top fasten a Japanese doll's head. Around its neck a ribbon is tied, stock fashion.

The most popular sachet odors at present are sandal wood, orris and Japanese perfumes.

About Sleeves.

The very wide sleeves that are being worn at present undoubtedly tend to take away from the apparent height of the figure, and if you are rather inclined to be short yourself you will do wisely to exercise a judicious supervision and to forbid your dressmaker to indulge in any vagaries as regards the shape or trimming of your sleeves. You can still have something which is quite sufficiently fashionable without adding in an unbecoming way to the width of your figure.

Misses' House Jacket.

Pretty, tasteful morning jackets are always in demand and make attractive garments for breakfast wear as well as for use during the hours spent in one's own apartments. This one is designed for young girls and is exceedingly youthful and graceful. Its broad collar drooping well over the shoulders and the fitted back giving a trimness and neatness to the figure. As shown the material is sprigged muslin trimmed with frills of embroidery, but there are countless others which are equally appropriate.

The jacket is made with fronts and back, the back being laid in tucks to the waist line and the fronts being gathered at the upper edge and stayed by means of an underfacing. The cape collar is arranged over the whole and the neck is finished with a little frill. The sleeves can be in either flowing style and finished with frills or in bishop style with cuffs as may be preferred.

The quantity of material required for the medium size is 3 1/2 yards 27 inches wide, 2 1/2 yards 36 inches wide or 2 1/2 yards 44 inches wide, with 7/8 yards of embroidery to trim as illustrated.

Rhubarb Pudding.

Wash and cut into inch pieces enough rhubarb to nearly fill a three-pint pudding dish. Mix half a nutmeg grated, three cups sugar. Butter the

dish thick with cold butter. Put in a layer of soft bread crumbs, then a layer of rhubarb, then a thickness of sugar and a tablespoon of butter cut into little bits. Repeat the layers, having a thick layer of bread crumbs on top. Mix a little melted butter with the top crumbs. Bake about an hour, slowly at first and serve hot or cold.

Lunch for Children.

Because things, to eat do not always present an attractive appearance their nourishing quality is not properly appreciated.

The value of dates for children's school lunches is not fully appreciated. They are rather sticky, bothersome things, as they are originally purchased, and children rarely care for them. They should be separated and washed, the stone removed, and a peanut or almond, salted preferably, substituted. The date is then rolled in corn starch or powdered sugar, and straightway becomes one of the appetizing trifles dear to youth, and at the same time is healthful and nourishing.

In the Kitchen.

Doughnuts or biscuits may be heated "amaist as good as new" by putting them in a whole paper bag, sprinkling in a few drops only of water, twisting the ends, putting in the oven, raised a little from the bottom on a grate. The oven must be very hot.

New nutmegs may be distinguished from the last year's supply by scraping the surface with the finger. If new, the oil will moisten the spot at once. Mace, when new, is oily. It should always be purchased whole and ground as needed.

A Dainty Work Bag.

Such pretty little work bags can be made on a foundation of basket work with a piece of dainty silk. The little flat trays to be found in all sizes at Japanese shops are chosen, and the silk sewed on the inside rim. The bag is first lined and slightly padded with sateen if desired. The silk is gathered in bag fashion at the top making a pretty and substantial receptacle for sewing materials or embroidery.

Corset Cover.

Shapely corset covers that fit nicely yet are not over snug are in constant demand and never can be too numerous. This one is peculiarly pretty and attractive, is eminently simple and can be made of any of the materials in vogue for underwear. The model, however, is of linen batiste with insertion and frills of embroidery and bands of beading.

The corset cover is cut with fronts and back which are laid in narrow tucks to the waist line, and is closed at the center with a box plait in shirt waist style. Over the upper edge and at the waist line are applied bands of beading that are threaded with ribbon by means of which the size is regulated.

The quantity of material required for the medium size is 1 1/2 yards of insertion, three yards of edging and 1 1/2 yards of beading to trim as illustrated.

Marie Antoinette Bodices.

The tendency toward the Marie Antoinette bodice for evening wear is marked. This style is really fascinating, with its long, pointed waist line, and very full skirt shirred into the skirt band. In white or ivory silk, the mode is ideal, and by next autumn it will be firmly established. This would not appear to admit of any change in the present full skirts, but would rather tend to increase them if anything. The great dressmakers, at least, seem determined to adhere to the full modes for some time to come.



Save all old zinc and when chimneys are filled with soot put a quantity on the fire. It will carry all soot out of stovepipes and clean the chimneys.

It is unwise to sprinkle a light carpet with tea leaves when sweeping unless they have first been rinsed in water, for otherwise they are apt to stain.

Rose petals make a delightful filling for soft pillows. Save them from withered bouquets or from fresh flowers and dry them. They may be treated as for potpourri or used with their own delicate perfume only.

Never put a bed in an alcove; the air is apt to become stagnant there. Have it right in the room and do not push it too close to the wall, then the air that comes in from the window has a chance to circulate around the bed.