

TRAINING A BOAT CREW.

WALTER L. PEET TELLS HOW IT IS DONE.

An interesting Article on the Most Wealthful and Beneficial of all Athletic Sports—The Training Process from Start to Finish.

That rowing is the most healthful and the most beneficial of all athletic sports can not be denied by any one having a knowledge of the subject. City boys who have started in as striplings to work for a freshman crew, and have kept up rowing through their college course, have developed into strong, symmetrically formed men, such as they never would have been had they not gone in for this branch of athletics. Especially is this true in a few of our leading universities, where the training and coaching of the men are systematically and intelligently managed.

If you are a boy who intends to go to college you ought by all means to "try for the crew." Even if you fail to get on your freshman eight, the time is far from wasted, as the work will do you incalculable good.

In this article I will tell you how a college crew is trained, from the first work till the finishing touches are put on just before the great varsity race, and you will see what you would have to go through if you should take the advice given above.

As a rule the freshmen crews supply the material for the varsity eight, the best men of the former filling the vacancies in the latter boat each year. Sometimes, however, it happens that a man will row two or even three years on his class crew before getting a place on the varsity, and once in awhile a man who has had no previous rowing will have that honor, but to accomplish this he must be exceptionally good in every way.

Just after the Christmas holidays comes the first work on the set of men from which the crew is to be selected. Sometimes twenty or thirty men present themselves as candidates to the captain, who has been elected by the crew of the previous year just before disbanding. He takes them to the gymnasium, where they are to work with him for two or three months. He directs their exercise, their diet and their hours; in fact, he has complete control over them from the time training is begun until the crew breaks up after the race. It is easy to see that the success of a crew



depends greatly upon the captain. Above all he must have good judgment, and he must be firm without being overbearing. Besides this, he and the coach must agree perfectly, else should a point come up on which they do not have the same opinion, one or the other loses the confidence of the men, or worse, perhaps, there comes a split in the crew.

The work in the gymnasium, which lasts two or three hours each day, consists of hard general exercising on all the apparatus, but principally on the heavy pulley weights, the object being to bring as many muscles into play as possible, and to develop the body symmetrically. Look closely at the next good university crew you see and notice the depth of their chests and how beautifully their muscles are rounded; note their carriage and their springy walk and you will see the good of this work.

Each day after the gymnasium work the men row for about twenty minutes on rowing machines or in the "tank." In the middle of the tank, which is filled with water, is a long narrow box fitted up with sliding seats, "stretchers" (foot rests), and outriggers (the irons which hold the rowlocks). A large hole is cut in the middle of the blade of each oar, so that when the men row the water rushes through these openings, giving the crew a very good indoor substitute for actual rowing.

After the row the men take a run of two or three miles, which develops their staying powers and enables them to stand hard, sharp work without getting out of breath. This routine is gone through day after day, until it is worn enough to row on the water.

The men take hold of the oars with about a hand's breadth between the hands. The stroke is commenced by reaching forward toward the stern of the boat with both body and arms and putting the blade in the water, great care being taken to swing forward from the hips without bending the middle of the back any more than possible. The shoulders are kept down and back, as there is not so much power in them when they are "hunched up," and when they are allowed to move forward too much they make the chest lessening the lung and heart

the oar into the water

the blade is not put in straight up and down but at a level, the lower part of it being turned slightly toward the bow of the boat.

The sliding seats enable the men to get a longer stroke and to utilize as the great power of the legs. On the "full reach" the seat is brought toward the stern of the boat, and it is held there till the shoulders have come up a little on the pull. This is done to give the body a good position before the hard push is made with the legs. On the "recover" the body hands and slides are started at the same time, and great care is taken to make the last part of the "recover" slowly and smoothly, else the force with which the eight heavy men come against their "stretchers" or foot rests when stopping the slides on the recover will stop the headway of the boat.

This then is the stroke which the coach tries to teach the men. He follows close to their boat on a fast steam launch, first on one side, then on the other, and again behind, and sees a great many imperfections. This man bends his back instead of swinging from the hips; that man does not swing straight forward and aft, but leans to one side of the boat when he pulls; one crops his shoulders forward on the full reach; another



sottles down in a bunch at the end of the stroke, as if he had no backbone; others feather their oars under water, kick down with their legs before their bodies are in position to stand the strain, rush their slides toward the stern, stopping the boat, and in fact seemed to do everything wrong. The coach works hard and persistently, however, and soon has the satisfaction of seeing some of these faults begin to disappear.

At about the time the crew goes on the water for the first time the men go to the "training table," where they all take their meals under the eye of the captain.

As soon as the crew have improved enough, they give up the barge for the shell, generally an old one, the new one not being used until a short time before the race.

Each day after the row a shower bath and a hard rubbing is given to the men. From five to fifteen miles are gone over each day in greater or less stretches. Pieces of four miles on time are rowed about twice a week. On these rows and during impromptu races with class crews or local clubs the men are watched very closely.

As soon as the college duties are over the eight goes to the scene of the great contest. The rows are made shorter to allow the men to pick up a little in activity, but these short rows are taken at the highest possible speed. At last the day comes, and if you ever sit in a boat at the starting post of a great college race as the referee steams up toward your shell, these thoughts will perhaps flit through your mind: "Is the result of all this work to be victory or defeat? We must win."

"Are you ready?" shouts the referee. The three seconds seem an age. "Go," comes to your ears at last. The boat jumps, you remember to make the first three strokes short to get a good start, and then you settle down, all nervousness gone, on the journey which is to bring to you and the whole college joy or sadness, according to your boat's position at the finish line, and if you win—well, few will be the events of your life to make you happier.

WALTER L. PEET.

Northwestern Amateur Association.

The annual regatta of the Northwestern Amateur Rowing Association is fixed to take place at Detroit, Aug. 14, 15, immediately following that of the Mississippi Valley association, which will come off on the same water Aug. 12, 13. The program is made up as follows: Junior single sculls, senior single sculls, junior double sculls, senior double sculls, junior pair oared shells, senior pair oared shells, junior four oared shells, senior four oared shells, four oared gigs and ten oared barges. All races will be one mile and a half with a turn. Entrance fees: Four oars, \$10; pair oars, \$10; double sculls, \$10; single sculls, \$5. The fee must be paid to the secretary at the time of entering, and will be returned to clubs which start boats in the races for which they were entered. In addition to the valuable gold badges to be given to each winning oarsman, handsome certificates will be given to clubs of winners. Arrangements have been made with the railroads, and special rates granted.

She Knew Him Well.

"Have you a very stylish young girl you could recommend me?" said a gentleman in an employment bureau. "Excuse me, sir," replied the affable manager, "but do you live in the corner house?" "Yes, but why do you ask?" "Because your wife was here only a moment ago to see if we had a tow-headed girl with a wart on her nose."—Judge.

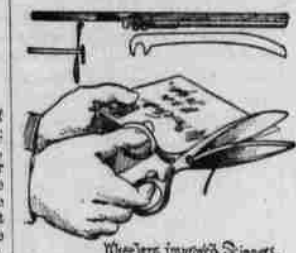
An exchange tells of the finding of the nude body of a man who gave two gasps and then died. This is a case where a pair of pants could not serve as a vestment.

TRIUMPHS OF SCIENCE.

LATE DISCOVERIES FOR THIS PROGRESSIVE AGE.

An Electric Lighting Plant on Wheels—A Novel Idea for a Letter Opener—High Service Stand Pipe for Mills, etc.—Scientific Notes.

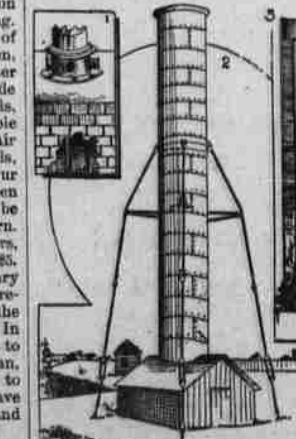
The scissors shown in this illustration are adapted to do the work of ordinary scissors and shears, and are also so made that letters may be rapidly opened by them without danger of mutilating the contents. The improvement forms the subject of a patent issued to Nathan A. Wheeler. The cutting blades are curved on their back sides, and one of them is somewhat thinner than the other, to allow it to close beneath a guide carried by the latter. The thinner blade also has, near its pivot point, a semi-circular recess, terminating on the inner side in a shoulder adapted to engage a letter guide and throw it from the pivot pin. The figure at the top in the illustration is a sectional edge view of the scissors, and just below is shown the guide attachment used in opening envelopes. The screw by which the blades are pivoted together has an angular flange or rib below its head, forming a washer which bears upon the upper blade, and an annular recess between the washer and the screw head adapted to receive the letter guide. The latter is thin and flat, and curved to conform with the flanged side of the thinner blade, so that when the blades are closed together it will fit the flange, the guide being secured to the other blade, so that its inner edge will be a little in advance of the edge of the blade. The guide is doubled over at right angles near its outer end and



perforated to receive a stud on the outer end of the blade on which it fits, the inner end of the guide being rounded to fit the semi-circular recess in the other blade, near the pivot point, and being slotted to fit closely upon the screw. When the guide is not in place the scissors are used in the ordinary way, but with the guide in position the end of an envelope passed between the blades is stopped by the guide, as shown in the small sectional figure at the left in the picture, so that only a narrow strip will be cut from the extreme end of the envelope, without danger of cutting anything it may enclose.

New High Service Stand Pipe.

This stand pipe was erected for the purpose of forcing water above the first floors of houses on Jersey City heights. The pipe is 100 feet in height and 6 feet in diameter. It is put up in twenty-two courses of wrought iron, of three different thicknesses. The first seven courses are made of 1/2 inch iron, seven of the next out of 3/8 inch, and the last eight out of 5/16 inch iron. Each course was put up in two separate pieces and riveted together. Each course is four feet in height. The stand pipe is riveted at the bottom to an iron casting, eight feet in diameter. The casting has one twenty-four inch inlet and two twenty-four inch outlets. One outlet connects with the street pipe and the other to the overflow pipe. The overflow pipe, which is erected inside and running up through the center of the main pipe, is 80 feet in height and 2 feet in diameter. This is connected to one of the outlets in the casting and runs out into the reservoir. The casting is bolted to a brick foundation 15 feet square. The bolts are eight in number and 2 1/2 inches in diameter. They run through the foundation and are fastened on the



1. Casting at Base of Stand Pipe. 2. The Overflow Pipe. 3. Section of the Stand Pipe.

under side to iron washers, two feet square. The weight of this casting is 12,000 pounds. The weight of pipe is 32,000 pounds. The pipe, when full of water, will hold 21,000 gallons. The water is forced up into the stand pipe at the bottom through a 24-inch pipe connected to the casting by a Worthington duplex engine. The four iron supporting rods or the stand pipe are 1 1/2 inch in diameter. The stand pipe was erected by

Jeodore Smith, of Jersey City, at a cost of \$5,500.

A Great Blast.

A great blast was to have taken place at Mr. P. Callanan's quarries, at Bethlehem, N. Y., on June 16, but it failed, owing to imperfections in the electric wiring, and was a disappointment to thousands of people who had congregated to witness the explosion, and to many who expected to note some important results from the method employed in charging. The failure was due solely to the inefficiency of the electrician who had charge of the wiring, and the greatest sympathy was felt by all with Mr. Callanan, who had spared no pains nor expense to make the occasion successful and impressive.

The quarries are situated at an angle in the great limestone ridge which passes through this section. Previous excavation has given the quarry a very uniform face, crescent shaped, and about 400 feet long, with a perpendicular height of 100 feet. About 60 feet from the base of the cliff is a ledge or offset, so that the top of the cliff is set back some 20 feet. The blast holes were drilled on the ledge and at the top, being at an average distance of 13 feet back of the face. The holes were drilled to a depth of 20 feet, and were charged with from 30 to 60 pounds each of 75 per cent "miner's friend" dynamite. The entire charge amounted to 3,000 pounds of dynamite, divided between 132 holes.

The circuit was connected with a dynamo situated in the crushing mill, close to the quarry. At 4 o'clock in the presence of Gov. Hill and his staff and about 5,000 spectators, Mr. Callanan's pretty daughter turned the switch, without result, as the wires were somewhere grounded. Mr. Callanan, however, succeeded in connecting up three sections of his blast, discharging them separately at intervals of fifteen to twenty minutes by a hand battery.

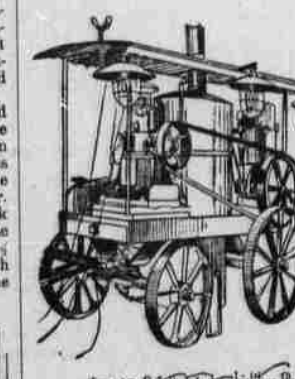
At the second discharge the high cliff, 300 feet long and 15 feet high, was seen to fall over to an angle of 45 degrees, and then drop, completely crumbled.

Strength of Anchor Bolts.

From a number of careful tests lately made to ascertain the tensile strength of anchor bolts set in Portland cement in the ordinary way, the fact appeared that the joint was really stronger than the stone. In this demonstration, two-inch iron rods were set into the stones some eleven and one-half inches, and then subjected to the test. The first rod had a screw thread to improve the grip of the cement, and the cement began to yield at a load of 32,000 pounds, the breaking of the stone taking place at 50,000. With a plain, smooth rod, it was found that the cement began to yield at a load of 34,000 pounds, but the rock broke at 67,000 pounds. Thus, though the strength of the cement joint was not developed, it was inferred that, in a suitable setting, the cement joint on a smooth rod might be made to break the rod.

Portable Electric Lighting Plant.

We illustrate a portable electric light plant, constructed in London, England, for a large dock company. It is mounted upon a frame carried by four wrought iron traveling wheels, and is fitted with two bullocks. The boiler stands in the center, the engine being at one end and the dynamo at the other. The boiler is 6 feet 6 inches high by 2 feet 9 inches in diameter. The firebox is crossed by two tubes 8 inches in diameter. The



Imperial Portable Electric Lighting Plant.

engine has a cylinder 5 inches in diameter by 6 inches stroke, and is of the inverted type with "tickering" governor. By means of a belt it drives the dynamo. This is compound wound to give 20 amperes of current at a pressure of 10 volts, when running at 600 revolutions per minute. It supplies four incandescent lamps of 200 candle power each. Each lamp is provided with a strong enameled iron reflector fitted with a wire guard, and a length of twin flexible cable. A plant of this description will be very useful in many kinds of outdoor work.

Good Form in Carrying Parcels.

In London it is not considered "good form" for a gentleman to carry through the streets a parcel, however small or elegantly wrapped. He may carry a book, if it is not too large and is not wrapped up; for a book is a book, but a parcel may be a pound of cheese or a dozen red herring. The restriction is a foolish one, a form of class distinction that is inconsistent with the highest civilization, in which every man will be a gentleman if he is thoughtfully considerate of others, whether he is a laborer or rides in a carriage.—Youth's Companion.

THE MOUNTAINS.

All through the frozen land we sped, Through cuttings white and marshes deep;

Through black plantations, grim and dead, And forest giants darkly seen.

The landscape fled and passed below, And gazing still, we saw no more Than one great cheerless waste of snow, An ocean with no farther shore.

Until the mountains rose around, So sternly from the icy earth, And beauty, though rejected, found A home in her own very death.

Cold they were, pride intensified In every line so gaunt and grim— A mantle and a pall of pride, That lingered when all else grew dim.

The rocky heads all powdered o'er, And in the valley far below A forest tangle, and once more A long and staidless slope of snow.

They seemed as mourning for the past, In hopeless mourning for an age So distant now, its records cast, But mystery on earth's dim page.

They seemed as frowning on the eye That arrogantly dared to read The secret thoughts they laid so by, And to such silence had decreed.

They seemed as wrapped in volubrious scorn, Too passionless to stop to hate, That anything of mortal born Should dare one thought to penetrate.

I met them, and I left them so, Still watching from their fortress white, Their cold, vast citadel of snow, To see the first approach of night—

Longing to feel its shadows glide, And veil their grief and hide their pain, With eager longing, even pride, Though measureless, could not restrain. —Lilian Winstanley in Chambers' Journal.

A VOICE.

A hidden choir of dear southern birds Have made their home in her fair throat, Voicing the tender passion of unspoken words In many a sweet heart's stirring note.

Sometimes the arm and trickey mocking bird Laughs in her happy, jocular tone, Again, the yearning of the dove is heard, As when she murmurs her mate's name.

And now the red bird with his vibrant thrill Showers a rain of music on the air, Or the swamy robin, make the pulses thrill Like some soul-tormented chorist's prayer.

Our spirit's song, most by her voice, will be Attuned to heaven's fullest harmony! —Met. H. Colquhoun in New Orleans Times-Democrat.

The Shrewdness of Detectives.

While I am in the business myself, I am free to admit that detectives are often accredited with a shrewdness to which they are not entitled. For instance, a man will lose a valuable piece of personal property and apply to a detective to recover it for him. He will unobscure himself to the officer, tell him where he was and what he was doing when he lost his property, and then what a simple thing it is to recover it. In the majority of cases the victim was robbed in company he would not want to recognize in daylight. He informs the detective of those who were in his company, and the detective goes to the party or parties, makes a grand bluff about knowing who has the goods, and in the majority of cases carries his point. The delighted owner upon having his property returned says: "What a smart fellow that detective is!" while in fact he is no brighter than the ordinary run of humanity, and has simply transacted a piece of business for his customer on business principles.—Detective in Globe-Democrat.

Gun Cotton is a Blaze.

Gun cotton constitutes the best military explosive known, for, while its explosive force vastly exceeds that of gunpowder and approaches that of nitro-glycerine, it is the safest and most stable explosive we possess, since it can be stored and transported wet; and while in this state, though it may be detonated, it cannot be exploded in any other way. As much as two thousand pounds of wet compressed gun cotton have been placed in a force bonfire, where it has gradually dried, layer by layer, and been consumed without exploding. Besides, gun cotton is the only military explosive which can be detonated with certainty when frozen.—Charles E. Munroe in Scribner's Magazine.

Two Meals a Day.

In spite of what our Elizabethan forefathers said and did to the contrary, and notwithstanding the opinions of some eminent physicians of recent times, evening is the only rational time to dine. There should only be two really substantial meals a day, and those should be breakfast and dinner. A solid and highly nutritious meal ought to begin the day's work, an equally solid and equally nutritious meal should end it. What is taken in the course of the working hours may be such as merely to satisfy the urgent cravings of the appetite, and to maintain in a condition of steady movement the ascending or descending course of the nerve energy. —The Hospital.

All There Was in Sight.

An English barrister was lately summoned before the benchers of his inn, charged with the serious professional offense of accepting a fee of half a guinea when his brief was marked with a guinea. The offender was severely reprimanded and informed that he had departed from "the best traditions of the bar." He respectfully urged that he had imagined that he was following "the best traditions of the bar," inasmuch as he had taken all he could get. So struck were the benchers, either with the force of this observation or the forensic dexterity displayed by the culprit in his own defense, that they let him off without further remark.—London Truth.

Clubs of All Sorts.

There are clubs of all sorts and character in New York. The tall men have a club called the Titans. The men who wish to show themselves superior to superstition have formed themselves into a club of thirteen. The southerners club together and so do the New Englanders, the fat men and the Scotchmen. The athletes and the artists all meet together in associations for their own encouragement and improvement. It is even reported from Paris that a near-sighted club has been formed there.—N. Y. World.

About the Wales silver wedding, it is observed that the princess' eight bridesmaids of twenty-five years ago are all living, all married and none divorced.