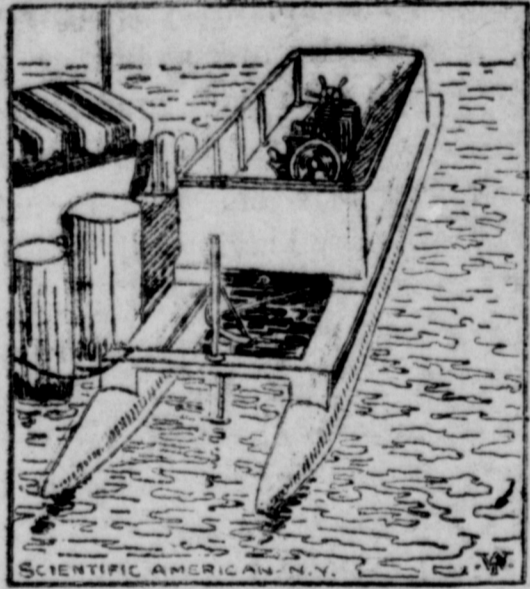


NOVEL POWER BOAT.

Tubular High Speed Catamaran Motor Craft of Light Draft. A novel tubular power boat which draws only two inches without load and three inches with several passengers has been constructed by William B. Reed of Janesville, Wis. It has a speed of eighteen miles per hour when operated by a gasoline motor of only six horsepower capacity. The boat consists of two cigar shaped tubes measuring a trifle less than one foot in diameter. On the tubes a platform fourteen feet long is mounted which has a railing of tubing with paraffin coated canvas sides and ends, secured by a molding at the bottom and hooks on the railing. The platform on which the engine is mounted is three and a half feet wide and is made of matched flooring. The



boat measures about thirty feet in length over all. The galvanized iron cylinders or tubes are divided into three chambers, an air pump keeping a moderate pressure constantly within them. The rudder is located at the bow between the tubes. By this arrangement the boat is steered with little loss of speed in turning, the usual result when the rudder is placed at the stern. The boat attains its highest speed in a remarkably short space of time. It is said that this novel motorboat leaves hardly any wake and that it leaves only a three inch wave, for this construction gives the propeller an undisturbed body of water to pass through at all times. It is maintained that the stern does not settle down in the water even when running at full speed. The skin friction is small.

SAND AND GRAVEL.

Increased Demand For Washed Material In Cement Work. More than \$18,000,000 worth of sand and gravel was dug out for sale in the United States in 1909, according to a report just issued by the geological survey. This is a considerable increase in production due in part to the more extensive use of sand and gravel in concrete construction work, but larger quantities were also used as railroad ballast and filling. There was also a considerable increase in the use of molding sand. The production of glass sand in 1909 was but little more than that in 1908. During 1909 the geological survey made field and laboratory studies of many kinds of sands and gravels in localities where federal buildings were in course of construction. These studies have shown great differences in the quality of sand and gravel used at different places for making concrete. Some contractors contend that run-of-bank sand gravel is the best for making cement concrete, but this contention is generally not sustained by practical trials and experiments. The most desirable material is that which is free from clay, loam or dust. Mica also is objectionable if present in large quantity, as well as pyrite or limonite. A coating of dust on gravel prevents its proper contact with cement, and the pebbles are therefore easily broken out of the concrete. During recent years, particularly in the large building centers, there has been a greater general appreciation of the importance of using proper sand and gravel in cement concrete, so that leading architects and builders are requiring sound, clean, washed material.

To Keep Brasswork Bright. Brass rails or other brasswork on launches or boats can be easily kept bright by the use of sperm oil. Some boatmen polish their brasswork once with putz or polishing powder, while for the rest of the season they keep it bright with sperm oil, which is rubbed on with a very oily cloth. Before starting on a trip the brasswork is rubbed over with the sperm oil cloth to prevent the salt from reacting on the brass, and on the return the salt is readily taken off, leaving the rail bright. This method was recently suggested to an automobilist, who found it to be a great success, because he could polish up his brass very easily after it had been left several days.—Scientific American.

To Blacken Light Woods. To blacken light woods make a preparation of an ounce of borax dissolved in a quart of water, with two ounces of shellac. The liquid is then to be

applied with a perfect solution is obtained, then stir in two teaspoonfuls of glycerin and complete by adding a sufficiency of soluble antiseptic to completely darken the liquid, which will now be ready for use.

Sea Water Cement.

The result of tests made by a large engineering firm recently to test the effect of sea water on cement and mortar shows that the water reduces the strength.

SMOKELESS PEAT FUEL.

New Method of Extracting Water Makes Combustion Complete. Consular Agent John B. Brewer of Weisbaden furnishes the following information concerning the invention of a German engineer which, it is claimed, will make peat "the ideal fuel." At a time when the superiority of oil as fuel for seagoing vessels is eagerly discussed and tested there has come to my notice an invention regarding the production of a new fuel which seems destined to play an equally prominent part in industrial as well as in domestic life and to form an important chapter in the problem of the preservation of the natural resources of the United States.

A civil engineer, having his experimental plant in this district, has found and patented a very simple process for extracting at little expense all water from peat, of which inexhaustible quantities are found the world over—inexhaustible because of the continuous and steady growth of new peat formations after exploitation of the old.

Knowing that millions of dollars had been spent in the past for the purpose of completely extracting water from peat on a large scale by powerful pressure as well as by electricity, my attitude toward the new claim was rather skeptical for some time, and therefore I hesitated to report thereon until I had consulted scientists and experts and until the experiments and tests made before me personally had convinced me of the value of the discovery.

The briquets made from the material so treated furnish a fuel which appears far superior to the best coal, as to calorific power, low price, small specific weight and absence of all smoke and ashes during and after combustion.

The freedom from water is accomplished by the admixture of peat to the peat before pressing in the proportion of one to fifteen. As this extraneous substance is used, there is complete independence from other ingredients. The pressing proper is done by specially constructed and patented machinery of a simple kind. As the three main elements of peat are carbon, hydrogen and oxygen, the process of combustion leaves hardly any ashes and just seem ideal, since peat contains neither sulphur nor phosphorus nor any other ingredient to which the ordinary smoke nuisance is due.

MAN VERSUS NATURE.

Marvels That Are Wrought Through Synthetic Chemistry. Nature, we may reflect, has a hard time in competition with the chemist. Her slow, laborious processes are one by one being superseded.

Some of the delicate perfumes, which she dishes to us in drops, are made by the gallon in the laboratory. The infinite delicacy of her tints we imitate from a material so unromantic as coal tar. We squeeze a cellulose product through a tiny hole, and we have the silk of the silk worm. We transform trees into paper and educate the world. We imitate the precious stones which Nature has produced by gigantic forces in upheaval, and the only difference, as was stated in our courts recently, is that the artificial product is more perfect than the real. Now the chemist takes starch, an unromantic material enough, and makes of it that rubber on which the wheels of the world go round.

In the course of his experiments man discovers a cheap method of making acetone, an essential of our modern high explosives. Somehow or other all man's experiments lead ultimately to the explosive, which again shows how we reverse processes, for, while Nature begins all her work with an explosion, man works up to the explosion as the highest expression of his conquest.—Western Gazette.

BEHEADING IN SIAM.

First the Victim is Fed, Then Tired Into Giving the Signal. An execution in Siam is an extraordinary business, according to a correspondent of the Chronicle. The doomed man, awakened at dawn, is led in chains to the temple, where candles are lit around him. He is exhorted to think of nothing but his sins, and his mind from mundane affairs and is given the best meal of his life. The menu being carefully chosen according to the social status of the criminal.

WOODSTOCK SCHOOL OF MUSIC

The most successful Music School in Canada

THE WOODSTOCK SCHOOL OF MUSIC was started by Mrs. Adney simply as a Name under which the scope of work of the most successful teacher of music in this Province might be extended. We shall not here refer to the course of study offered, except in a passing way, but to those more personal matters which so far outweigh all other considerations as to make the list of truly successful schools of any kind very few in number. It is altogether a matter of the TEACHER.

The secret of Mrs. Adney's widely known success is that resolved upon having the best instruction at any cost she had the wisdom to select or the good fortune to be directed to the BEST TEACHERS IN AMERICA, and has the faculty of imparting what they taught her. William Mason was our greatest teacher of Piano and admitted as the equal of the best of Europe. He was a pupil of the immortal Liszt. Her lessons, over an extended period, were cheap at six dollars a piece. Previously, she had instruction from Gonzalo Nunez, a distinguished graduate of the Paris Conservatory, where Prof. Le Couppey was instructor on Piano. This world's greatest music school also perpetuates the musical theories of Liszt. These ideas lead to a technique in contrast with that of the dry, mechanical German technique. We criticize German execution, not German music. The influence, however, of this nation of musicians is such that their "method" is the one nearly everywhere met with. Combining Mason's "Touch & Tone" with the thus rarely taught "Conservatoire method," it is worthy of note that Mrs. Adney's steady use of "Le Couppey" has exhausted the American edition, and a new one is being printed for her use.

In Voice, Mrs. Adney was in a sense almost equally fortunate. After some instruction from a famous (that is to say, well advertised) teacher, whose method was not as great as his celebrity, nor his charges, she took lessons under Mr. A. A. Patton, a distinguished French singer and teacher, who with the finest credentials that France had to offer, came to New York to make his debut where German influence controlled everything from orchestra members to press critics, and it being shortly after the Franco-Prussian war his reception was so hostile that he abandoned his intended career in Grand Opera, and retired to the routine work of a teacher. Later she studied at the N. Y. Vocal Institute, under the talented Mr. Tubbs, editor of The Vocalist, and derived many ideas that have proven of great value here. So it happened that, by accident or otherwise, Mrs. Adney acquired the method in singing of the great Garcia, and the almost equally famous Shakespeare—the only true method of voice production and that which has produced the great singers of Italian and French Opera.

When deciding to carry on her well known private work in Piano, Singing, Musical Theory, etc., under the name at the head of this section, it was with the idea of extending its scope as opportunity might offer. It perhaps did not occur that Woodstock could not maintain a Victoria Conservatory of Music, which during her three years after its establishment became an institution of such recognized importance in the music world of Canada, that a special publication entitled "Musical Toronto" gave her and her work extended space. Perhaps it was because one of her pupils, solely instructed by her, went to the Toronto College of Music and in the same year took the Gold Medal in Piano. Two other pupils sisters, one fifteen and one thirteen years of age, after studying with Mrs. Adney entered one of the foremost Conservatories in Europe and began immediately to play in public recitals. The head master writing to their parents said "they have had the perfection of piano forte training and are artists already." Today her work has become so well recognized in the United States, that she has been invited to become a member of the International Musical Society, formed thirteen years ago by the very leading musical professors and patrons of the world, and only seeking membership of those identified with "advanced musical research and its results."

There is a point relating to "Diplomas," "Graduation," etc., upon which Mrs. Adney needs again to remind the public. Except for theoretical studies such as harmony, this School gives no "Diplomas," has no "Graduates," in all practical, artistic work, the only test of proficiency recognized among artists is that of the actual work itself, except for the degree of Doctor of music, for which only the masters ever qualify, and which is recognition of exceptional proficiency and musical learning. For all others the only recognized test is ability to perform, from memory, to say, two capricci, a program of pieces of certain grades of difficulty, one of ordinary music, and one from the representative works of the great Masters. The program itself is the "certificate" and no teacher of high standing ever offers anything else; and whatever institutions hold forth as an inducement the prospect of a "Diploma" for a certain length of time in study, it may be taken as certain that the actual teacher is indifferent—any person whom the institution finds it convenient from time to time to employ. Even a school or institution becomes famous only through some exceptional TEACHER in it. An artist of real distinction offers only his program: no one asks or cares WHAT school he studied at, but who was his TEACHER. The aim of this school is not to grind out graduates with diplomas; we offer the best musical instruction, in our lines, that can be obtained in the Maritime Provinces, if not in Canada, and better than will be obtained by going to any but the few greater masters in the large cities of the United States.

Thus Woodstock offers advantages for musical study that one may go to any city in Canada, or to New York or London, and perchance not get. Mrs. Adney did not in the first instance select Woodstock as furnishing the full scope for her exceptional talents as a teacher, but she has made it and the work done here by pupils who are now successful teachers in various parts of United States and Canada, a credit to Town and Province.

Harmony, History and Theory of Music taught in classes which are free to pupils of the school. Ensemble classes taught by Mrs. Adney are also free. Prospectus on application.

In the Same Class.

"I have a fishing boat and a chauffeur but are both in the same class." "How do you mean?" "I am always bailing them out."

EXPANSION OF METALS.

Effects of Temperature on Railway and Bridges.

An ordinary poker, such as is used in our houses for stirring up the fire on a winter's night, if allowed to come to the temperature of boiling water is only about one two-hundred-and-fiftieth of an inch longer than when at the freezing point. This does not mean much to the everyday man, but the expansion of metals due to heat is a very important subject for the bridge engineer or the maintenance of way superintendent.

An accident occurred not long ago in England due to the expansion of rails. The variation of temperature between winter and summer in many parts of the world is not more than 80 degrees F. Yet this range of temperature is competent to produce a variation in the length of the rails of about two feet in the mile. The effect of this expansion if it is not allowed for in the track is usually to cause the outer rail on a curve to bulge out more than the inner one, and thus throw the track out of gauge. The force exerted by an expanding rail is estimated at about 1,000 pounds for each degree of temperature.—Railway and Locomotive Engineering.

Novel Railroad Record.

The Grand Trunk Pacific railway (Canada) has commenced a novel undertaking whereby a record of the growth of the west so far as the railway is a factor in its growth will be kept, says the Scientific American. The official photographers of the company have begun to work on the plan of the company, and towns along the line will be photographed, each photograph being duplicated yearly, so that a continuous record may be obtained and kept of each individual town from the time it sprang up throughout the period of its growth. The record kept is expected to be of invaluable importance in years to come.

Details Worked on Steel.

A process has been devised recently by a French scientist for the detection of blood on steel and other opaque substances, even when the traces are not to be seen by the human eye. The light of a Welsbach burner is concentrated upon the part of the object under examination through a tube which is placed obliquely above the object glass and which carries an iris diaphragm, a condensing lens and a total reflection prism. A photographic camera may be substituted for the eyepiece.

DELICATE SURGERY.

New Invention Enables Interior of Lung to Be Seen.

By the use of a newly invented miniature searchlight telescope passed down the windpipe and into the bronchial tubes of a patient who had swallowed a shawl pin one of the surgeons of King's hospital was recently able to see the pin, to remove it with forceps and to save the life of the patient, who was apparently beyond human aid.

The instrument, called a bronchoscope, resembles a small bent telescope fitted with lenses at different angles and has a tiny electric light which can be passed deep into the lung. The day after the pin was swallowed an X ray examination showed its position beneath the sixth rib, about an inch to the right of the breastbone. The patient was chloroformed, and then a 20 per cent solution of cocaine was sprayed over the larynx and windpipe. The telescope tube was then passed through the mouth and larynx down the windpipe. Peering down the tube, the surgeon finally located the pin, fixed head downward in one of the branches of the windpipe at a distance of thirteen inches from the mouth.

A pair of very fine forceps on the end of a long flexible wire passed down the hollow telescope tube was then made to grasp the pin, and the pin, forceps and telescope were withdrawn together. Within a few hours the patient was able to return to her home none the worse for an accident which would almost inevitably have proved fatal.

There are two executioners. One is hidden in some brushwood, while the other, dressed in vivid red, conducts the criminal to the place of sacrifice, bidding him be seated on banana leaves "in order to be entirely separated from earth."

The condemned man is then put into position, awaiting the ax. Earth is put in his ears. For two hours or more nothing happens. Siamese law demands that the criminal shall bow his head voluntarily to the ax. This he does finally from sheer exhaustion, and immediately headman No. 2 rushes from his hiding place and does the rest. The executioners are then sprayed with holy water and otherwise purified from contact with the victim's soul.—Paris, Cor. New York World.

Train Orders by Telephone.

During the last few years telephones have been installed on a number of roads in place of telegraph instruments for the transmission of dispatches or orders. The telephone is used for the transmission of train orders on about 276 railroads, the aggregate mileage operated by these companies is 131,014 miles, and the telephone is used on 26,344 miles of road.

Measuring Nature.

Nature is not benevolent. Nature is just, gives pound for pound, measure for measure, makes no exceptions, never tempers her decrees with mercy or winks at any infringement of her laws. And in the end is not this best? Could the universe be run as a charity or a benevolent institution or as a workhouse of the most approved pattern? Without this merciless justice this irrefragable law, where would we have brought up long ago? It is a hard gospel, but rocks are hard, too, yet they form the foundations of the hills. Man introduces benevolence, mercy, altruism, into the world, and he pays the price in his added burdens, and he pays his reward in the vast social and civic organizations that were impossible without these things.—John Burroughs to Century.