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A. E. BEACH.

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OPENING OF THE FIELD MUSEUM.

foreign countries in supplying objects for the Museum. Many of the precious exhibits at the Fair were purchased by the managers of the Museum at very low rates. The valuable anthropological collection gathered by Prof. F. W. Putnam, of Harvard University, and the collection of exhibits of the world's railways are among the objects of interest. The large halls are devoted to special displays, while the smaller rooms are used to house the permanent collection. The director of the Museum is Mr. F. J. W. Skiff, late chief of the Mines and Mining building of the Columbian Exposition. The collections already gathered represent the progress of industrial art, relics of Columbus, zoology, lithology, mineralogy, and geology. The Museum will be open every day in the year, free on Saturdays, Sundays and all holidays, on other days by paying a small admission. The Field Museum will stand as a permanent memorial of the Columbian Exhibition, and no building could so appropriately represent the greatness of the Fair as the beautiful edifice designed by Mr. C. B. Atwood.

HOW TO PREVENT AND EVADE INSANITY.

The last number of the Alienist and Neurologist contains an interesting article by Dr. Wm. W. Ireland, of Edinburgh, on the above subject. He holds that persons accustomed to mental cultivation and discipline have great advantages in escaping from the taints of insanity. He thinks that mathematics is a very healthful exercise for a disturbed mind. He quotes Bacon, who says, "If a man's wits do wander, let him study mathematics, for in demonstrations, if his wits be called away ever so little, he must begin again." The learning of a new language, Dr. Ireland says, has been found by experience to engage the mind without fatiguing or harassing it. The study of animated nature, zoology and botany, with its illimitable fields and its cultivation of the inceptive and receptive faculties alike, and the opportunity it gives for outdoor exercise, is a valuable means of diversion for a mind unhinged or liable to become so. But we must not forget that all men are not studious; the great majority of men rather prefer pursuits which bring them in direct contact and dealing with the outer world. He who wishes to escape the morbid current of his thoughts and fears should select some one pursuit and involve himself in action concerning it. Of all such occupations known to us, gardening is the most wholesome and engrossing. Gardening gives exercise to the body and mind alike, and though mainly an out of door pursuit, it also gives some employment under cover.

Dr. Ireland's paper concludes with a number of excellent suggestions relating to the medical treatment of incipient insanity, the housing and care of patients.

PASSENGER RAILROAD TRAFFIC IN NEW YORK AND LONDON.

According to a recent article in the Railroad Gazette. the steam city railroads of London earn only \$73,000 a mile, while those of New York City earn \$300,000 a mile per annum. It appears the New York railroads carry a far larger number of passengers and run quicker and make more stops than the London roads. In New York it takes from 12 to 15 seconds for the people to get into and out of the cars, but in London it takes about 30 seconds, although the cars in London have side doors, which are supposed to afford greater facilities for the ingress and outgo for passengers. The Gazette says that the superior speed on the New York roads is largely a matter of smarter working. An underground road ought to be able to make greater speed, for it can use heavy engines and so get up to the maximum speed quicker; but, on the other hand, it is questionable if what they gain in this way is not lost in the greater caution needed in working heavier trains and working them in tunnels. These elements necessitate absolute blocking; but, on the elevated railroads of New York, worked in what is almost always a clear atmosphere and with but few obstructions to a long sight ahead, the trains can be run safely at a considerable speed without block signals. One train can run right up to the tail of another and thus take advantage of every second.

It is said that in some cases electricity enough to run The great Field Columbian Museum was opened June fans and sewing machines, to the extent of over one 2. The beautiful Art building of the Columbian Ex- H. P., can be had; it is stated that the gas pipe in position, held at Chicago last year, has been utilized. almost any house near the trolley lines will give seven On Oct. 26, 1893, Marshall Field, one of Unicago's amperes and 300 volts, sufficient to run seven ordimerchant princes, subscribed \$1,000,000, and the success 'nary electric fans or furnish power for seven 16 candle of the Museum was assured. Donations poured in lights. Such a current would do very much better rapidly and the various States of the Union vied with than this. One of the experts said : "If you drive a couple of gas pipes to the return leg under the railroad track, you can get sufficient power to run heavy machinery." As this power seems to be running to waste in the ground, there appears to be no satisfactory reason why it should not be made use of free of charge by any one who has the good fortune to live along the lineof the trolley railway. It is different from secretly tapping water pipes or gas mains. This electricity is running in the ground; it has been discharged or thrown away by the railroad company, which consequently can have no claim upon it.

THE LIMITATION OF VIVISECTION.

The benefits derived from vivisection are incontestable, but like some other good things, vivisection is often wrongfully used. 'The general public and even members of the medical profession are ignorant of the extent of vivisection and of the methods of its practice. In order to promote interest in this subject, a society, having headquarters in New York City, has been formed, entitled : "The Society for the Protection of Animals Under Vivisection." The object of the society is to spread information in regard to the extent of the practice of vivisection and to enforce the laws regarding it. The society is not antagonistic to vivisection when performed in the cause of science by professors of incorporated medical schools, but is opposed to the unauthorized practice in which animals are subjected to useless cruelty and to painful experiments which merely illustrate well known truths.

There is a too frequent use of vivisection in schools, which tends to deaden the youthful mind to the suffering of helpless creatures.

In most of the States vivisection is without legal restriction; but the State of New York provides that vivisection shall only be practiced under the authorization of an incorporated medical school or university (laws of 1867, chapter 375).

In the States which have no laws regarding vivisection, public opinion must be relied upon for a sentiment condemning its unnecessary practice. A request for reading matter on this subject, taken from the best authorities, will be sent on application to the secretary of the society, P. O. box 2828, New York City.

+++++ THE ENGINEER'S WORK IN MODERN BUILDINGS.

The profession of architect as relating to the designing of buildings has occupied a position intermediate between that of a profession and of an art. It has related to the production of the beautiful, and the architectural enthusiast has often placed his field of work on a par with music, and has regarded it as the crystallization of all that is best in the plastic and designing arts. A beautiful building appeals to the senses as a picture and as a statue, its effect depending partly on contour and partly on relief. Again, the artist proper may contribute to the decoration of a building. The sculptor may supply designs for caryatides, or may design special finials and other features that are truly statuesque. The artist in the realm of painting and drawing may control many elements of the design. The full architect, like Michael Angelo, should be both sculptor and painter.

But of recent years a new function has to be called in, in the construction of modern city buildings, which function is the work of the modern civil engineer. Occasionally in the past the engineering aspect was prominent in buildings. The Roman Pantheon and the Cathedral of St. Peter are examples of dome construction worthy of the highest praise as engineering achievements pure and simple. But with the advent of steel in place of stone a new type of engineer has arisen, one who by relying on a material of tensile and compressive strength many times greater than that of brick or stone, produces new effects. He builds bridges of spans only possible by virtue of the qualities of steel. The old-time stone bridge which would carry itself would carry any load that could be put upon it, and no thought of wind strains troubled its constructor. Its weight alone was enough to prevent the possibility of lateral displacement. In the modern steel bridge the load must be taken into account, the wind pressure must be provided for, and the effort is to make the trusses as light as possible. The relation of weight to strength is so much more favorable in steel than in stone or brick that the conservative element of weight of structure only obtains anything like its old sway in the largest of steel structures. Steel has now invaded the architect's realm, and the last few years have seen a new type of city building evolved. one which would be impossible without steel, and in which the modern engineer asserts his presence. The twenty or more storied office building is now based on foundations made by caisson work, perhaps with ompressed air. On the piers thus established the

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FREE ELECTRICITY.

According to a writer in the New York World. there are a number of places in the city of Brooklyn where electricity may be had free of charge, by simply connecting wires between water mains and gas pipes where they enter buildings. Along the lines of the trolley railways in Brooklyn there is a very extensive discharge of electricity into the ground, and these currents find their way to the water pipes and gas pipes. stee trusses, which extend from pier to pier. A steel same time an antiseptic and an analgesic. frame is carried up several hundred feet in the air, even wind bracing is provided for.

story, on the floor above which it is desirable that there It is very soluble in water, and this property permits mediate wall of the lower floor a truss, precisely such must be observed, however, that, as a general thing, sozoiodol (diiodo-paraphenate of sodium). as would be used in bridge work. It is so throughout. solubility has no relation whatever with the quickness The modern office building is only possible because of of action and assimilation of a medicament. Phenace- tiseptic, is form-aldehyde. It has the great advantage the engineer. In its roofing, flooring, and foundation, tine, while being but slightly soluble in water, acts new engineering problems constantly arise, and the | nevertheless as quickly as antipyrine. fully equipped architect is no longer the product of an The success of antipyrine has evoked a series of exapprenticeship at the drawing-board-he must be a ca- periments with the object either of preparing substipable engineer.

A DECISION RELATING TO ASSIGNMENTS.

who hold property in letters patent by assignment has 'nucleus, and then chlorated, bromated, etc., antipyrecently been made by the United States Court of rines. In the second series antipyrine has been asso-Appeals. This is the case of the American Cable Rail- ciated with salicylic acid, and this has given salipyrine. and, on the other, the natural alkaloids are the object way Company vs. the Mayor of New York City. Here ! Tolysal is the salicylic combination corresponding to 'of numerous studies. With the means now at the distofore it has been assumed, and in fact decided, by the tolypyrine. Apropos of hypnotics, we may mention posal of chemistry, it is possible to study the active State courts that the simple recording of an assignment hypnal, which is a derivative of antipyrine and chloral. principles of digitalis, belladonna and a host of other in the Patent Office is *prima facie* evidence of the genuineness of the instrument; but the Court of Ap- have been proposed likewise as antiseptics. peals now reverses this doctrine and holds than an assignment of a patent is not a public document, but find acetanilide and antifebrine, which are prepared syntheses will be only the results of a study of the prois simply a private writing, and there is no statutory by treating aniline with anhydrous acetic acid. If, in-ducts, of their reduction and of their decomposition.provision requiring an assignment to be recorded in stead of operating with aniline, we start from hydroxy- Le Genie Civil. the Patent Office. Section 4898 of the Revised Statutes lated aniline, that is to say, from a product which is permits this to be done for the protection of the as both phenol and amine, and etherify it before acetysignee against a subsequent bona fide purchaser or lation, we shall have phenacetine or phenedine. mortgagee. The section does not make the recorded instrument evidence, and does not require the assign- gine is derived from the acetylation of methyl-aniline. and on one of the funnels was painted the figures 21 75. ment to be executed in the presence of any public officer, or to be acknowledged or authenticated in any as an antirheumatic. Salicylic acid is a carboxylated speed of 21.75 knots per hour was made in an off-shore way before being recorded, and does not provide nor phenol, that is to say, a body that is at once phenol run under forced draught in comparatively shallow contemplate that it shall remain subsequently in the and benzoic acid. It is prepared by passing a current | water, burning anthracite coal. At the above speed custody of the Patent Office. It devolves upon the of carbonic acid over phenate of soda at a high tem- her shafts made 138 revolutions per minute, steam pres-Patent Office merely the clerical duty of recording any perature. Several applications have been found for sure 160 pounds. Streams of water were kept running instrument which purports to be the assignment of a its derivatives, among which may be mentioned sali- over the bearings, but this was an unnecessary prepatent. "We are aware," says the court, "of no prin- pyrine, that we have spoken of above, and salol, which caution, for none of the machinery became unduly ciple which gives to such a record the effect of primary we shall find among the antiseptics. evidence or of *prima facie* proof of the execution or *Asaprol* has the same action as salicylate of soda. the genuineness of the original document. To give it It is obtained by treating beta-naphthol with sul-proved herself to be the speedier vessel. Mr. Cramp such effect would enable parties to manufacture evi-phuric acid at a low temperature. It is the sulphuric said: "I am perfectly satisfied with the showing made stence for themselves." The decree of the lower court ether of beta-naphthol. It is offered in the state of to-day by the Minneapolis, and I expect her to do a was reversed and the complainant's bill was dis- calcium salt very soluble in water. Under the name of knot and a quarter better under the same conditions missed.

Heretofore, as above noted, it has been the practice the document being simply signed by the owner of the which is the hydrate of trichlorated acetaldehyde. patent and attested by one witness.

executed before a notary public in the same manner *nal*, which is obtained from chloral and urethane. that deeds and conveyances of real estate and other. properties are certified.

Medicaments Derived from Coal Tar.

As a consequence of the progress made in the manufacture of coloring materials from coal tar, physiologists form part of the same series. and physicians have been able to experiment with a host of new products, some of which have found a place limited number of characteristic groupings. They are chemically called triiodo-meta-cresol. phenols, acetylated amines and sulphonated, sulphu- Tumenol, thioline and sulphonated thiophene are reted, ideated and chlorated derivatives of the alde- designed for the same use. hydes. Methodical experiments have not been numerrelation between the constitution of these bodies and

It may be that a partition is required on a lower dimethyl phenyl-pyrazolon that constitutes antipyrine. potassa at a low temperature.

tute antipyrines and of analogous pyrazolons, or of mineral oils employed in this state and that serve as solassociating it chemically with other substances. In the first order of ideas has been produced tolypyrine, A decision of considerable importance to all persons which is a paramethylated antipyrine in the phenylic

Thalline and kairine are quinoleic products that

Among the oldest analgesics and antithermics, we

Thymatecine is the phenedine of thymol, and exal-

abrastol it has been used as a microbicide.

2. Hypnotics and Various Medicaments.-One of simply to record an assignment in the Patent Office, the most frequently employed hypnotics is chloral, stroyer Columbia, was launched August 12, 1893, at

In view of the foregoing decision, it will be well for ous organic substances. In this way have been pre- 412 feet long, beam 58 feet, mean draught 22 feet 65 those who are interested in patent property to take the pared : Chloralose, which is a combination of chloral inches, displacement 7,350 tons, indicated horse power precaution of having their assignments more fully au- and glucose; hypnal, which is due to the union of one 21,000. The hull is steel and has a double bottom, thenticated and verified. Such documents should be molecule of antipyrine and one of chloral; and som- with considerable space between the two skins, this

> but its constitution has no relation with that of chloral. all, a commerce destroyer, and is not intended to fight, Chemically, it is called the diethyl-sulphone of di- so she is not armored. Her conning tower is of mild methyl-methane. It is formed by the combination of steel and her protective deck is a variety of turtleback, acetone with ethyl-mercaptan. Trional and tetronal and is 4 inches thick on the sloping portion. The gun

For skin diseases there have been proposed dermatol, which is the subgallate of bismuth; sulphaminol, Patent fuel will be stowed to a thickness of 5 feet as therapeutic or antiseptic agents. The substances obtained by the action of sulphur upon meta-oxidi submitted to such experiments are of very diverse phenyl-amine; resorcinol, which is a combination of one 8 inch standard breech-loading rifle, two 6 inch nature, but there is observed in them, nevertheless, a iodoform and resorcine; and lysophane, which is rapid-fire rifles, and eight 4 inch rapid-fire rifles. The

ous enough and the data furnished by biological chem- series, is diethylene diamine. One of the processes of nition is used, the powder and shot being combined in istry are not precise enough to allow us to establish any preparing it consists in causing ammonia to act upon an immense cartridge, standing nearly 6 feet high. bromide of ethylene.

building is supported, its weight being distributed by even employed as an antiseptic, and asaprol is at the thane, analogous to chloroform as regards constitution. This antiseptic has, as well known, an insupportable

1. Antithermics and Analgesics.-Of all the artificial odor. An endeavor has, therefore, been made to substeel roofing trusses and beams are put in place, and antithermics, antipyrine or analgesine is the most stitute odorless and likewise iodated substances for it. the skeleton of the structure is complete. The process | widely used up to the present. It is derived from Among the bodies proposed to this effect we may menis comparable to the framing of a wooden house. The phenyl-hydrazine, which is itself obtained by dinitrat- tion diiodoacetylene or diiodoform. In order to prebuilding is closed in with walls of brick and stone, but ing aniline and in reducing the dinitro-benzol thus ob- pare this alkaline hypoiodites are made to act upon an these represent only its sheathing. The building de tained. This phenyl-hydrazine is afterward condensed aqueous solution of acetylene, or water upon a mixture pends for integrity on its steel skeleton. In its frame | with aceto-acetic acid, and then, finally, the product is | of iodine and carbide of barium, or else by treating submitted to a methylation. We have at last the acetylene with iodine in the presence of an excess of

There likewise exists a tetraiodo-acetylene. The should be an unbroken or undivided space. The en- of administering it under the most varied forms-a other iodated derivatives are : Traumatol (iodo-cresygineer provides for this by including within the inter- quality that is highly appreciated in pharmacy. It lol, aristol (iodo-thymal), iodol (tetraiodo-pyrol) and

> Formol, which has recently been proposed as an anof being volatile, and, consequently, of penetrating to the very interior of the objects to be disinfected.

> Ichthyol, anytine, thiol and thiolinic acid are sulphonated and sulphureted derivates of organic and vents for products insoluble or but slightly soluble.

> Among the substances mentioned, a small number only will doubtless receive the sanction of practice, but the road is laid out. On the one hand, syntheses are multiplying with the object of finding new series, natural products. We shall certainly succeed in giving such alkaloids a greater energy, perhaps new properties, and even replace them by substances of which the

Trial of the New Warship Minneapolis.

When the Minneapolis returned from sea to Philadelphia June 7, she carried a broom on the foretopmast Salicylate of soda has been for some time employed which showed that the vessel is a record breaker. The heated. The Columbia, on her preliminary trial trip, made only 20.98 knots, so that the Minneapolis has as the Columbia."

The Minneapolis, a sister ship of the commerce de-Philadelphia, in the yard of Wm. Cramp & Son's Ship An endeavor has been made to associate it with vari- and Engine Building Company. The new vessel is space being divided by numerous bulkheads into Sulphonal is likewise a very efficacious hypnotic, watertight compartments. The Minneapolis is, before shields are two inches thick, or only sufficient to protect the gun crews from the fire of machine guns. around the machinery. The armament consists of secondary battery is composed of twelve 6 pounders, four 1 pounders, and four Gatling guns. The vessel is provided with five torpedo launching tubes. The 6 Piperazine, a nitrated product of the closed chain inch guns are loaded at one operation, as fixed ammu-

The brag that the two new ships above mentioned

their physiological properties, provided any exists. Their applications, in fact, exhibit many anomalies. We see products that are very different as to constitusubstances that are analogous, from a chemical point functions, and halogenated derivates. of view, produce very different therapeutical effects With the information that we possess upon this subject it is hazardous to draw absolute conclusions.

The number of organic bodies proposed as antiseptics ance every day. We can mention but a limited number of benzoic acid with naphthol gives benzo-naphthol. here, in selecting the most important of them.

We have arranged these substances as antithermics name of asaprol, is the salt of calcium of the sul-able after being put into actual service to hold anyand analgesics, and hypnotics and antiseptics. There | phuric ether of beta-naphthol. It is a microbicide at is nothing absolute about this classification. A large present proposed for the preservation of wine. number of these products has at the same time several Among the phenolic products of less importance, we of these properties. For example, chloral, which we may mention alumnol, sozal, daphtherine, phenoline, Campania on a voyage across the Atlantic, the may place among the hypnotics, is an analgesic, and is cressine and microcidine. lodoform is triiodated me-ships would be left far astern.

hydrochlorate of phenyl-dihydro-quinazoline.

Phenol, beta-naphthol and gaiacol are characterized the benzolic or naphthalic nucleus.

The use of a large number of phenolic derivates has Abrastol, of which we have above spoken under the

Orexine serves to stimulate the appetite. It is a are commerce destroyers, able to overtake any other ship afloat, remains yet to be verified. We hope the 3. Antiseptics.-Among the organic antiseptics, we government will subject the vessels to actual trial. tion act upon the organism in a similar manner, and find, especially, bodies with phenolic and aldehydic It is true the contractors have managed to squeeze a gratifying rate of speed out of them for a short time, everything being prepared and strained to the utmost. by the phenolic grouping OH directly connected with But how will it be on a sea voyage? Can these new vessels equal such merchant ships as the Campania, Lucania, Paris, New York, Majestic, Teutonic, or as medicinal products is very large, and one or more been recommended. Thus, salol is salicylate of phenol, |Bismarck, Columbia, Normannia, which make from 20 new medicaments are observed to make their appear- and betol is the salicylate of beta-naphthol. The union up to 211/2 knots per hour on almost every voyage? The experience thus far had with our most highly praised government ships is that they have never been thing like their trial trip speeds. We venture to say that were the Columbia or the Minneapolis ordered to keep company with such boats as the Paris or the