

SCIENCE AND INDUSTRY.

Providence, R. I., has just turned out a solid 55,000-pound casting. East Chicago is to be built up with extensive car manufacturing, steel plants and slaughtering establishments.

The output of the Indiana coal fields for 1887 will be greater than for any year in the past history of the State. The sum of \$1,000,000 has been bequeathed by Mr. Richard Berrige for use in advancing economic and sanitary science in Great Britain.

But few people have any idea of the rapid extension and development of the electric lighting business in this country. All the leading electric light manufacturing establishments are crowded with orders.

The South Brooklyn Ferry Company have substituted women for men as collectors on both sides of the river. They work ten hours a day, and receive a salary of \$60 per month. They have not only proved themselves as efficient as men, but more honest.

Ten saw-mills at and about Truckee, Nev., this season, cut 44,000,000 feet of lumber. Last year the total was 33,000,000 feet. Less than 13,000,000 feet of lumber is on hand at the mills, and this will be cleaned out before work can be resumed in the spring.

Professor Edward Hull, director of the Geological Survey of Ireland, in a paper read before the British Association at its last meeting, says that many geographers have overlooked the effect of continents in attracting the oceanic waters adjoining them. He thinks that the attractive force of the land piles up the water of the ocean all along the great continental coasts.

A Yankee scientist in writing of the precious stones peculiar to the United States, has been saying some nice things about chlorastrolite, a gem peculiar to Michigan. The only place in the world where it is found, he says, is Isle Royale, Lake Superior.

A man in Mexico, who was struck by lightning and was supposed to be dead, was restored to consciousness by means of a large quantity of cold water which was thrown over him as the suggestion of a passer-by. It served to re-establish respiration before the paralysis of the heart had become absolute, and the patient recovered.

From many observations on healthy men, Dr. Theodoroff, of St. Petersburg, learns that the vital capacity of the lungs increases from morning till evening, decreasing again during the night. After each meal, too, there is a special increase, followed by a slight decrease, the vital capacity being at its highest shortly after dinner, and at its lowest after getting up in the morning.

Manitoba's Census.

The census of Manitoba, which was taken July 31, 1886, has recently been published. It shows that the population of the province, which in April, 1881, was 63,954, had increased to 108,640. The gain of 42,686 in five years was at the rate of 8,500 a year.

Table with 2 columns: 1881, 1886. Rows include Wheat, bushels; Barley; Oats; Potatoes; Turkeys; Hay, tons.

Dangers of Politeness.

Lady (standing in doorway of prominent Chicago lawyer's office and holding out shabby umbrella)—I beg pardon, sir, but is not this yours? You gave me your seat in a street-car an hour ago, and after you had left the car I found this on the cushion behind me. It has your name and address on the handle. Politeness, you see, sir, [smiling], is its own reward.

NIGHT-TIME.

As on wrecked battle grounds Some black-robed, piteous nun Binds up the bleeding wounds When the day's fight is done, So, stealing o'er the way Where, patently, has passed The heated, burning day To wiper, bruise and blast, Night com's in sable dress, With soothing, soft caress, To heal and sweetly bless.

Sad eyes, which long did weep; Hearts—heavy, sick and worn— Praying for peaceful sleep; Hands weary, brain-torn, Feet that for courted rest, Halt by the sunset gate, Welcome this dark-robed guest, And for her coming wait, Bird of the broken wing, Cease now thy sorrowing— Night-time doth healing bring.

ABOUT THIEVES.

A New York Reporter's Talk with Inspector Byrnes.

How Professional Criminals Are Made—No Such Thing as "Honor Among Thieves"—Rich Ones Who Stick to the "Business."

"How are professional criminals made?"

"They are the product of a wide variety of circumstances," answered the inspector. "A great many might be said to be born thieves. Their parents were thieves, or of a class that is in some way not entirely reputable. The children, male and female, grow up under influences of association and early training that give them no chance to learn to respect the teachings of morality or the restrictions of law. But in looking over the list, and taking the number of criminals who have become celebrated in my day, the percentage is very small of such who became so by reason of early training by criminal parents, or even from natural predilection growing out of relationship of this kind. Even of those who grew up amid surroundings and associations to such a degree that there are few who may be said to have made a mark in the profession."

"Isn't it true that in many cases thieves who have families try to keep their business a secret from their children?"

"Yes, they do it as long as they can. Many of them intend and mean to, but generally speaking it is impossible. The father or mother, whichever is the thief, and sometimes it is both, is away a great deal. To the inquiring minds of children this may lead to a discovery. Then the visits of associates, the chance of an arrest, or any of perhaps a hundred happenings may expose the facts. At first there is a childish horror, natural repugnance, but blood is thicker than water, and sympathy is soon excited. The father or mother does not call in vain for the child's regard and even assistance and support against the law and its operations, which speedily take on the appearance of oppressions to the young mind. Then, unless speedily removed from these influences, the force of circumstances, some pressing want or some seemingly excellent opportunity, makes the child a thief, and another recruit is enlisted in the ranks of professional criminals."

"Does it ever happen that children are successfully kept in ignorance of the business of their criminal parents?"

"Yes, it does. On that score I know of more than one case in point. There are criminals who have put their children in convents or some such institutions when very young, and thus have protected them from ever making the dreaded discovery. They are visited there by their parents at long intervals, perhaps, but always under circumstances when the visit is safe and no exposure risked. One of the most notorious women crooks that New York has ever known has a daughter grown who is a pious and religious woman, a Sister in a convent, and I assume, still ignorant of her mother's manner of life."

"You have only mentioned thieves who have made their mark; does this all apply to the common run of offenders?"

"No, I really did not think of them. They are not objects of study, and would not repay it. Of course, in a large city like this, there are many young boys growing up whose parents are poor and can do little for them, and for this and a variety of other reasons have little control over their children. At from fourteen to sixteen years of age these boys get a taste for going to shows and places of amusement, and an appetite for excitement of all kinds. In most cases the first robbery committed by these offenders is for the purpose of getting money to go to the show. They are led on step by step, and their associations constantly get worse. They become professional thieves, but not of a dangerous grade—that is, not dangerous in the direction of large hauls. They are the most dangerous to life, and the most apt to do violence in committing crime. They are ready to knock a man down to rob him in the street, or shoot one to enable them to escape when discovered plundering a house. But they are easily caught, and seldom are long out of prison. In the recent case of the Weeks murder, the capture of the murderer, who there seemed to be little or no chance at first of such a result, shows the weakness of this class of offenders."

of general education, and of business experience. They fall through family troubles, disappointments, or discouragements of some kind. Once having committed the overt act that makes them thieves, their intelligence is such that their progress in crime is very rapid. It is much greater than that of the ignorant persons who perpetrate a low, mean class of robberies. In forgery this is particularly noticeable. Some of the men who are known internationally as the perpetrators of astounding forgeries, are men of good origin and splendidly educated.

"How do thieves look upon their business? Does it seem legitimate to them?"

"Well, you can not tell much about that. You would have to be a thief or live among them to get at their ideas in a matter like that. They speak of going to work when talking among themselves in a matter-of-fact way. It is the same with confidence men. When they set out to ensnare people and get their money, they always speak of it as 'going to work.' Every time a thief starts out to do a job of thieving, he knows that he takes some chance of falling—that is, of being arrested and imprisoned. In many cases the job seems to be practically without risk, and however dangerous it may be he never undertakes one that he does not expect to get away with. No man is more jealous of his liberty than a professional thief. More ordinary offenders are much more reckless in taking chances of being locked up. One of the first things that a gang of professionals does nowadays when planning for a piece of work is to subscribe in equal amounts what is called 'fall money.' This is to protect any one of the gang who may happen to be arrested, and provide him with counsel and other necessities. It protects them against each other also. A common ownership in a fund like this helps to keep them together. And the one arrested is protected against the desertion of his friends. And if disposed to remain steadfast, they are well protected against the risk of having to try to connect with him to help him. The 'fall money' is left in the hands of a confidential common friend, usually not a professional. Sporting people and saloon-keepers are generally the ones who are well enough acquainted with thieves to be with them, though not of them."

"What are the rewards of successful thieving? Do these men look forward to a time when they can stop stealing and enjoy what they have amassed of other people's wealth?"

"I do not know a person who has been a professional thief and has accumulated money who is not ready to do any thing that he considers safe to increase his wealth, no matter how crooked it may be. He may have enough, with prudence, to live on all his life. But he will always be ready to put up for the expenses of a job out of which he can get some profit, or by stolen property when it can be done with any assurance that there is little risk. Their greed for money is insatiable. There are men in this country and in Europe—I mean Americans in Europe, for I do not know much of foreign criminal matters—who have got a pile of money as professionals. They have never abandoned the ways by which they got it. But they pursue their ways so as to greatly reduce their chances of either going to prison or of contributing to the enrichment of lawyers. Their money gives them a position among their own class. They are sought out by first-rate crooks, the only kind they would have any thing to do with, and by paying expenses and remaining in the background they can share in the profits of thieving at a very little risk."

"That reminds me, Inspector. Who is Adam Worth, who is reported as living in such great style in London, somewhat after the fashion you have indicated?"

"Adam Worth is one of the class I have referred to. He is an American, and some of his people live in this city to-day. He fled the country on account of a Massachusetts bank robbery. He took over a large amount of money and set up an elegant private establishment in London. His home is in Piccadilly. It is frequented by the highest class of English criminals and of American crooks who go across. He is reputed to have added largely to his wealth through his shrewdness in disposing of stolen property from the continent. He is a swell, I tell you. He lives and acts like a gentleman, owns a yacht, and all that sort of thing. Any body who goes over there from here and is known as a 'good man' is sure of being royally entertained by Adam. Yet this place is, I assume, under the surveillance of the police, and he is liable at any time to make a slip that will give them a chance to grab him. He is no double life in the story and the stage acceptance of such things. He does not have any society, except that of his kind. With all his money, and despite his criminal record, his exile is said to be a bitter one for him. He is reported to have made many attempts and offered large amounts to make a compromise in the bank case against him, so that he could return to this country. Criminal as he is, he still has a longing to revisit the land of his birth. He is known to have planned and had carried out some of the most daring robberies in England of late years, among them that of the Dover mail train."

GOOD FOR SOMETHING.

How a Smart Dog Saved Himself from Being Executed.

A Georgia man started out one morning to kill his dog. He had given the animal every opportunity to show his worth, but as he had failed to take advantage of any of them, the disappointed man decided, after holding a consultation with his wife, that Rip, as he was called, should be deprived of his life. The man took down his gun and led the dog away, intending to take him to the top of a distant hill.

"Rip," said the man, "I hate ter shoot you, but you ain't no manner account. You won't tree a 'possum, won't fight a coon, an' won't even run a rabbit, so you've got ter die." Just then, having reached the road, the dog broke away, dashed at a man who was walking along the road, and springing upon him, bit him severely.

"You're got to kill that infernal dog!" exclaimed the victim when he had been rescued. "Wall, I'd start out ter kill him." "Go on then and do it." "But wait a minute. Ain't you the county judge?" "Yes."

"Air you bit bad?" "Yes, I am." "Wall, ez I said, I had started ter kill him 'cuz he ain't no 'count, but—say, air you sartin you air the county judge?" "Of course I am." "Wall, Rip, (affectionately stroking the dog) I won't take you over yonder on the hill, for I have dislikerd that you air good for suthin' after all. Come on an' we'll go home. Bit er county judge. Wy, Rippy, that'll tickle my wife putty nigh to death."—Arkansas Traveller.

The most unique will on record is that of Mrs. Louisa Ramsdell, of Rochester, N. Y., who leaves property valued at \$120,000 and decrees that with the exception of a carpet and stove given to her daughter and \$500 left to her grandson, the entire amount shall be devoted to defray her funeral expenses and erecting a monument to her memory.

ELECTRICAL MUSIC.

An Apparatus for Playing the Piano by Currents of Electricity.

Many attempts have been made in the last quarter of a century to invent a satisfactory system of piano-playing by electricity. In fact, as far back as 1850 Froment made a piano in France in which electricity was used. In 1861 another Frenchman, M. Hipp, took out a patent for a piano in which each note of the key-board was provided with an electro-magnet, connected by wire with a metallic comb, which touched a small metal cylinder covered with paper perforated with holes corresponding to the notes used. This piano was exhibited, but was not perfected.

Speiss, a Swiss inventor, devised another piano in 1864 quite like that of Hipp, but better. In none of these instruments was there any lack of power to execute any air that might be attempted, but they failed to render the notes with the varied gradations from massive strength to extreme delicacy that the discriminating touch of the human fingers evokes from the instrument.

Joseph Webber, a young New York electrician, has now, it is claimed, surmounted the difficulties that caused other inventors to fail, and devised a method of electrical piano-playing so full of promise that one of the chief piano-manufacturing firms of that city has taken it up. The fact that experts connected with a great factory have reported in favor of his system renders it quite probable that it contains important and practical features favorable to its success.

The device itself is simple enough. For every note in the piano is provided a piece of soft iron, wound with wire in the usual fashion, and capable of becoming a magnet when influenced by an electric current. Each magnet attracts a lever attached to a piano key, so that when a current passes to a particular magnet the key corresponding to this magnet is acted upon, and the hammer strikes the string more or less forcibly, according to the strength of the magnetic attraction. The wires running from the magnets attached to each key center around a small cylinder provided with metallic pins, somewhat like the cylinder of a music box, except that the pins, instead of projecting from the surface of the cylinder, are perfectly flat. It is easy to understand how the current can be made to pass a particular note only when a certain metallic point on the surface of the cylinder comes in connection with a comb, each metal tooth of which corresponds to a note in the piano. The chief difficulty to be met with is the problem of giving notes different dynamic values, one note being soft and the next note loud. This has been accomplished by introducing resistance coils into the circuits according to the power of the note wanted, and the tone can be graduated in a sufficiently accurate manner to allow some surprising effects.

The finished apparatus will not be costly, and is so simple in construction that it does not require an expert to attach it to the piano. It may be used in connection with any piano, and at the same time does not in any way interfere with playing the instrument in the ordinary fashion, the key being left perfectly free. It is easy to see that even should the electric device not succeed in playing with the musical expression of a good pianist, there is much work which it might do to general satisfaction. For instance, it might play for dancing, and reel of the latest waltzes and quadrilles, or it might play ordinary music far better than the unskilled amateur could be expected to do.—Chicago Times.

HOME, SWEET HOME.

Why the late W. W. Corcoran Sent Over the Sea for His Author's Remains.

George W. Melville, who was recently nominated by the President to a place in the Navy Department that will give him the rank of Commodore, is known to fame principally as one of the survivors of the ill-fated Jeannette Polar expedition. His return to America from that terrible voyage was one of the inspiring causes that led the rich Washington banker, W. W. Corcoran, to have brought back to America the remains of the sweet song writer, John Howard Payne. It happened this way: When Lieutenant Melville and his companions reached Washington after their rescue they were given a reception by the principal citizens of the capital. An escort met them at the depot on their arrival, and, headed by the famous Marine band that furnishes the music at the White House, the procession started up Pennsylvania avenue. It was a bright, sunny day, and the wide street was crowded. When the band moved along the avenue it played the heart-touching tune of "Home, Sweet Home," and it filled the air with the old-time music that has found an echo in every heart for so many years. In the first carriage rode Lieutenant Melville, and with him the rich banker, Mr. Corcoran had known and befriended John Howard Payne in the struggling days of the song-maker, and the tune awoke old memories in the rich man's heart and suffused his eyes with tears. He thought of the man whose tender lines and sweet music had brought joy to so many breasts, and remembered that his bones lay mouldering in a foreign land, homeless even in death. Then and there he resolved that all that was mortal of John Howard Payne should find an abiding place here at home. That night he wrote to Secretary Frelinghuysen about the matter, and the Government lent its aid through the United States Consul at Tunis, near which place the almost forgotten grave was located. The details were soon perfected, and one bright June day in 1885 the remains of the dead poet arrived in this country and were given a resting place in the land he loved so well. Mr. Corcoran bore all the expense attached to the transfer, and it was the old familiar tune ringing out along the avenue on that pleasant day when Melville came home that first awakened in his heart the resolve to give a lasting burial place to the poet's remains.—N. Y. Graphic.

OXYGEN STARVATION.

Points to Be Considered in the Choice of a Dwelling House.

If we are asked which of the many necessities of life is best entitled to the chief place we must surely reply, oxygen. This gas forms about one-fifth of the bulk of the atmosphere, and our wants are supplied by the act of breathing, so regularly and ceaselessly performed by every one. It is possible to live for a long time without the protection of a house or of clothing; it is even possible to live for many days without food; but if we are deprived for only one or two minutes of oxygen, the consequences are serious, and may be fatal. This is perhaps one reason why, of all things that our bodies require, oxygen is the only one the regular supply of which does not depend upon our own attention. The pangs of hunger and thirst warn us when food and drink are necessary, but they can only be satisfied by our putting forth conscious effort. A man may be hungry, but if he is too lazy to seek out food and raise it to his mouth he will starve. But it is not so with oxygen. We have power, it is true, temporarily to stop our breathing or to increase its rapidity by an act of will; but even when we forget all about it the breathing continues. This is one of the many mysteries of our being always before us, but seldom thought of, and yet it is very striking. This frequent and important act of our daily life has not been entrusted to our care, but has been so arranged for that it is performed every three or four seconds from the moment of birth until death, without requiring one thought from us. The breathing apparatus never sleeps. Again, oxygen is so closely connected with the great vital processes upon which our growth and daily energy depend, that food itself is useless unless accompanied by a large supply of it. Indeed, when the quantity of oxygen which a man consumes in his lungs daily is calculated, it is found to be greater in weight than all the dry food he requires during the same period.

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BOARDER.

"I don't know what's the matter with me, but I haven't been able to eat worth a cent since I came to this house." Landlady—"Were you a museum freak before you lost your appetite?"—Lincoln Journal.