#### SCIENCE AND INDUSTRY.

-Providence, R. L. has just turned out a solid 55,000-pound casting.

-East Chicago is to be built up with extensive car manufactories, 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 bequesthed by Mr. Richard Berrige for use in advancing economic and sanistary 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 attra ting 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. -N. Y. Ledger.

the precious stones peculiar to the United States, has been saying some nice things about chlorastrolite, a gem who became so by reason of early says, "Is Isle Royale, Lake Superior. This island, belonging to the State of of those who grew up amid surround-Michigan, forty miles long, five miles ings and associations to such parentwide, and about twenty miles from the age there are few who may be said to mainland, is composed of amygdaloid have made a mark in the profession." trap, in the almond-shaped cavities of About \$1,500 worth are sold annu- their business a secret from their chilally.

-A man in Mexico, who was struck by lightning and was supposed to be dead, was restored to consciousness by but generally speaking it is imposmeans of a large quantity of cold water which was thrown over him as the sug- ever is the thief, and sometimes it is gestion of a passer-by. It served to reestablish respiration before the paralysis of the heart had become absolute. and the patient recovered. In an ac. of associates, the chance of an arrest, count of the case, communicated to the or any of perhaps a hundred happen-Mexican Academy of Medicine, it is stated that the effect of the electric shock on the system was very much like that of an overdose of chloroform. -N. Y. Ledger.

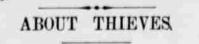
-From many observations on healthy men, Dr. Theodoroff, of St. Petersburg, learns that the vital capacity of the lungs increases from morning till even-

NIGHT-TIME. As on wrecked battle grounds Some black-robed, pitcous nun Binds up the bleeding wounds When the day's fight is done,

So, stealing o'er the way Where, gairishly, has passed The heated, burdened day To wither, 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, briar-torn, Feet that for couried 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. -Adeluide George Bennett, in Good Housekeep-



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 s in some way not entirely reputable. The children, male and female, grow up under influences of association and arly 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 -A Yankee scientist in writing of taking the number of criminals who have become celebrated in my day, the percentage is very small of such peculiar to Michigan. "The only place training by criminal parents, or even in the world where it is found." he from natural predilection growing from natural predilection growing out of relationship of this kind. Even "Isn't it true that in many cases which the gem principally occurs. thieves who have familles try to keep dren ?'

> "Yes, they do it as long as they can. Many of them intend and mean to, sible. The father or mother, whichboth, is away a great deal. To the inquiring minds of children this may lead to a discovery. Then the visits ings 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

and its operations, which speedily his life. But he will always be ready forged check for \$10,000 in Dallas, take on the appearance of oppressions to put up for the expenses of a job Tex., and whom we took on the to the young mind. Then, unless out of which he can get some profit, description of some India ink marks speedily removed from these influences, the force of circumstances, some pressing want or some seemingly excelent 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 1 know of more than one case in point. There re 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

of general education, and of business possess large wealth and considerable experience. They fall through family political influence." troubles, disappointments, or discour-

agements 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 know internationally as

the perpetrators of astounding for-

geries, are men of good origin and

"How do thieves look upon their

piece of work is to subscribe in equal

splendidly educated.

them?"

No

liberty

not of them."

other people's wealth?"

"I suppose they rely upon that firm old rock of tradition, 'honor among thieves?' " said the reporter, inquir- the last quarter of a century to invent ingly

"They rely upon their own shrewdwas the inspector's retort, and he continued: "Honor among thieves! My experience has taught me that there is no such thing. There is not as much real sticking together and consideration for each other's interests as there is in the ordinary relations of life, business and social. have never yet met a thief in my life

business? Does it seem legitimate to who would not save hin self if possi- exhibited, but was not perfected. ble from going to State prison by be-"Well, you can not tell much about traying his : ssociate into confinement. that. You would have to be a thie! In the ordinary course of business or live among them to get at their there are many persons arrested here ideas in a matter like that. They from all walks of life. There are

ing among themselves in a matter-of-standing in the community have been they always speak of it as 'going to do it very much quicker than a prowork.' Every time a thief starts out fessional thief. It is not a moral to do a job of thieving, he knows that difference by any means, and does not he takes some chance of falling'- weaken my first proposition about that is, of being arrested and im- honor among thieves. They are all prisoned. In many cases the job thieves alke for the purposes of this seems to be practically without risk, argument. It is simply, I assume, and however dangerous it may be he that they can more readily be brought never undertakes one that he does to believe that they will benefit themnot expect to get away with, selves by betraying others. The proman is more jealous of his fessional's different habits of thought, than a professional different education and training have thief. More ordinary offenders are to be considered. He is cautious with much more reckless in taking chances the police. He is schooled to it, and of being locked up. One of the first even when disposed to try to help things that a gang of professionals himself by helping them he considers does nowadays when planning for a the step very carefully first."

"You have had some experience amounts what is called "all morey." with both classes, I presume?

This is to protect any one of the gang "Yes, and I say again that the per who may happen to be arrested, and some who have had a good position in provide him with counsel and other the commutiy and the respect and connecessaries. It protects them against tidence of a large circle have proved each other also. A common owner- to me time and again that they will ship in a fund like this helps to keep hasten quicker than an ordinary theif hem together. And the one arrested to protect themselves or try to at the is protected against the desertion of expense of others. I have seen mon his friends. And if disposed to remain of this kind in this very room cry like steadfast, they are well protected children, with big tears rolling down against the risk of having to try to their cheeks, begging to be allowed to connect with him to help him. The tell about others to save their own fall money' is left in the hands of a miserable carcasses from the dungeon. confidential common friend, usually "Instances? yes, but without not a professional. Sporting people names," answered the Inspector to and saloon-keepers are generally the a tentative question. "There was a ones who are well enough acquainted, financial man brought in here ones on with thieves to be with them, though a matter of hypothecation in which two were concerned. He was a big "What are the rewards of successful fellow and had stood well. My questhieving? Do these men look forward tions were answered impudently, and to a time when they can stop s caling he was of course non-committal. I sudand enjoy what they have amassed of dealy turned upon him and told him what I thought of him in terms that "I do not know a person who has were none the choicest, an I then called been a professional thief and has ac- an officer, to whom I said: Lock cumulated money who is not ready to that big loafer up.' In a few hours

do any thing that he considers safe he was begging to have me sent for to increase his wealth, no matter how so that he could tell all he knew. "The comparison is in the case of a crooked it may be. He may have assistance and support against the law enough, with prudence, to live on all a man arrested for laving down a on his hand. He was identified, and certain of conviction, but it was three days before he could make up his mind to try and help himself by telling something about the others in the job. When he found out that he had to go down South anyhow, and take a chance of long imprisonment in one of those stockade juils, he cut his throat in the ferry-house and diel." As the Inspector finished this he suddenly seemed to recall an engagement, and apologetically bowed the reporter out. -N. Y. Sun. GOOD FOR SOMETHING.

### ELECTRICAL MUSIC. An Apparatus for Playing the Plano by

Currents of Electricity. Many attempts have been made in

a satisfactory system of piano-playing by electricity. In fact, as far back as ness and ability to keep under cover." | 1850 Froment made a piano in France in which electricity was used. In 1861 another Frenchman, M. Hipp, took out a patent for a plano 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

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 atspeak of going to work' when talk- men among them whose character and tempted, but they failed to render the notes with the varied gradations fact way. It is the same with confi- good. And I must admit that if it is from massive strength to extreme delidence men. When they set out to en- possible for them to shield themselves cacy that the discriminating touch of quantity of air for each. This is made snare people and get their money, by implicating any one else, they will 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 attracion. 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 and of plenty of space within it, so 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 particuar 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 times as much fresh air from the outnote in the piano. The chief difficulty side is admitted, by means of open to be met with is the problem of giving doors and windows, as can be allowed notes different dynamic values, one note being soft and the next note loud. This has been accomplished by introlucing resistance coils into the circuits according to the power of the note wanted, and the tone can be graduated | only pure blood will give good health. in a sufficiently accurate manner to allow some surprising effects.

The finished apparatus will not be costly, and is so simple in construction hat 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 e 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.

riod. Yet again, if we wish a house and clothing and food, we must work for them, but for oxygen there is nothing to pay. It is free to all, and lies around us in such abundance that it never runs short. Here, then, we see every means taken to insure that all our demands for oxygen shall be freely and fully met, and yet we are assured by medical authorities that a very large proportion-some say one-fourth-of all the deaths that take place is caused, directly or indirectly, by oxygen staryation. Now, what unfortun te circumstances prevent so many persons having a sufficiency of this all mportant gas? The chief one undoubtedly is

congregating in towns. Instead of living in the country, where every household might have a large free space of air around it, we draw together, for the convenience of business, to great centers. There the houses are crowded closely together, often piled one on the top of the other, so that, instead of an overabundance, there is only a limited unfit for the support of life by the very act of breathing; the impurities are increased by the waste prodnets of manufactories; and oxygen is destroyed by every fire and lamp and gas light. The winds and certain properties of the atmosphere constantly remove much of the impure air and bring in a pure supply; but the crowding together in many parts of a town is so great, and the production of poisonous matter goes on so continuously, that instead of each breath containing its full proportion of oxygen, the place of that gas is taken up to some extent by what is actually hurtful to life. When this is the condition of the atmosphere outside the dwelling. it is necessarily much worse within it, for there the displacement of impure air by pure can not take place so rapidly. The consequences are as already stated. Large parts of our town populations never have sufficient oxygen; their lives are feeble and full of suffering. and numbers die before their time. Such facts are painful to contemplate, but a knowledge of them puts the wise man on his guard, and he may do much for himself. In the choice of a house he will remember the advantages of a great air space around it, that bedrooms may not be overcrowded. Or, if a large house is beyond his means, he will take care that the rooms are not crowded with furniture, for every piece of furniture excludes an equal bulk of air. When he enters the house he will see that at all without inconvenience from cold; and as often as possible he will have a blow through, to clear out all odd corners where foul air may linger. Pure air and good food make pure blood, and

## HOME, SWEET HOME.

- Chambers' Journal.

Why the late W. W. Corcoran Sent Over 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 survivers 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. Coreoran 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 moldering 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 1883 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. Graphie.

ing, 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. The force of inspiration and expiration follows nearly the same law. - Arkansaw Traveler.

-A report based upon an inspection of 1.214 factories in 125 different branches of work in Russia states that the hours of labor there vary from six to twenty, and that in one or two special instances workmen were compelled to labor twenty-four hours uninterruptedly. These differences are purely arbitrary and not controlled by the kind of work. In the same district in the same sort of work there is sometimes a difference of eleven hours in the amount of work required in a day in the different factories.

#### Manitoba's Census.

The census of Manitoba, which was taken July 31, 1886, has recently been still ignorant of her mother's manner published. It shows that the popula- of life.' tion of the province, which in April, 1881, was 65,954, had increased to 108,-640. The gain of 42,686 in five years all apply to the common run of offendwas at the rate of 8,500 a year. Do- ers?" ducting the natural increase of the population, the result would show an influx of immigrants at the rate of about 6,600 a year. A table of the birth-places shows that 34,124, were born in the province; 10,322 in England and Wales, 3,621 in Ireland, 5,982 in and for this and a variety of other Scotland, 34,180 in Ontario, 5,978 in Quebec, 1,317 in Nova Scotia, 704 in New Brunswick, 180 in Prince Edward | years of age these boys get a taste Island, and 520 in the Territories. Of the total population of 108,640, 42,843 had migrated thither from other parts of Canada. How some of the principal crops had increased is shown in the following table:

		1001.	1890.
Wheat, be Harley Oats Potatoet Turnips Hay, tons	 ls.,	1,083,073 233,004 1,270,268 556,193 149,025 185,\$79	6,711,180 1,054,034 14,740,047 1,908,070 158,847 450,749

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 au 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.

Prominent Chicago lawyer (with some emphasis)-Madam, it is. I have made a bet of ten dollars against ter cents that I could lose this umbrell on that car. I thought it a perfectl safe bet. I shall never be polite on etreet-car again. - Chicago Tribune.

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,

"You have only mentioned thieves who have made their mark; does this

"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. reasons have little control over their children. At from fourteen to sixteen 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 bea 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 and seldom are long out of prison. In the recent case of the Weeks murder, the capture of the murderer, when there seemed to be little or no chance at first of such a result, shows the weakness of this class of offenders."

"What is there to be said about the called natural-born thieves?"

"A great many are persons of reputable parentage, who have had ad-

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 matterswho 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 1 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. Hy 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 come professional thieves, but not of liable at any time to make a slip that will give them a chance to grab him. His is no double life in the story and the stage acceptation 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 dese for him. He is reported to have house. But they are easily caugh', | 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. H : is k town to | have planned and had carried out some of the most daring robberies in higher class thieves who can not be England of late years, among them that of the Dover mail train.

"There are a number of men and women, too, occupying a similar povantages of excelent early training, sition in this country. Some of them her memory.

How a Smart Dog Saved Himselt 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 hal 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

"R'p." 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've got to kill that infernal

dog!" exclaimed the victim when he had been rescued. "Wall, I did start out ter kill him."

"Go on then and do it." "But wait a minit. Ain't you the

county jadge?"

"Yes. "Air you bit bad?"

"Yes, I am."

"Wall, ez I said, I had started ter kill him 'caze he aiu't no 'count, but -say, air you sartin you air the county judge?'

Of e surse I am."

"Wall, R p. (affectionately stroking the dog) I won't take you over yonder on the hill, fur I have diskivered that you air good for suthin' af er all. Come on an' we'll go home. Bit er county jedge. W'y, Rippy, that'll tickle my wife putty nigh to death."-Arkansaw Traveler.

-The most un que 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 carpat and stove given to her daughter and \$500 left to her grandson, the entire amount shall be devoted to defray her funeral expenses and creeting a monument to

# OXYGEN STARVATION.

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

If we are asked which of the many necessaries of life is best entitled to the chief place we must surely reply, oxygen. This gas forms about one-tifth 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 reguar supply of which does not depend apon 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 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 use less 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 a museum freak before you lost your food he requires during the same pe-

-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 appetite?"-Lincoln Journal.