

magnifies my political importance in my country, and does me too much honor in calling me a proscribed exile. It is true that I served in the Polish insurrection of 1863, that I passed nineteen or twenty months in Prussian prisons, and that I was the editor of a political newspaper in Cracow; but I never was exiled, not having had either opportunity or ability to distinguish myself so much as to receive such a flattering mark of esteem from the Russian government, which is the only one in which the penalty of exile still exists. There are thousands of my countrymen who have done and suffered so much more for the national cause, that I deem it

unworthy of me to assume or accept undeserved titles to the public sympathy and admiration.

At last, may I be allowed to add, in regard to some remarks of the writer about my native land, that although Poland has passed through many more or less fortunate wars, it never was subjugated before 1772, the fatal year when the crime of its first partition was accomplished; also, that the populations of Cracow and Warsaw, far from being mixed, are thoroughly and essentially Polish, as well from origin as in heart.

Yours,

C. BOZENTA CHLAPOWSKI.

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## HOME AND SOCIETY.

### The Boys of the Family.—III.

#### HOW TO BECOME A MECHANICAL ENGINEER.

WHILE the aspirant in the field of mechanical engineering may acquire a satisfactory education at the Massachusetts Institute of Technology, at Cornell University, at the Sheffield Scientific School connected with Yale, at the Rensselaer Polytechnical School of Troy, and at several colleges, including Harvard and the University of Michigan, which make a feature of instruction in technology, none other offers him the same facilities as the Stevens Institute of Hoboken, New Jersey, which, though its curriculum may lead to the degree of Bachelor of Science or Doctor of Philosophy, concentrates most of its forces on this one specialty. The institute was founded in 1867 by the endowment of the celebrated engineer, Edwin A. Stevens; it is pleasantly situated in Hoboken, about one hour's distance from the central part of New York City, and its faculty includes many eminent men, including Henry Morton, the president; Robert H. Thurston, the professor of mechanical engineering, and Alfred M. Mayer, the professor of physics. The collection of apparatus is undoubtedly the most complete in the country, and comprises, besides full sets of those embodying late improvements, the identical instruments used by the most famous discoverers in science,—notably those of Dalton, Gay-Lussac, Dumas, and Regnault. The cabinet of optical instruments has been declared to contain more riches than all the cabinets of France, and, perhaps, of Europe combined, and in the engineering department the collection includes, besides a variety of modern machinery, some invaluable relics, such as the high-pressure condensing engine, tubular boiler and screw, which, early in the century, drove the first steamer built by John Stevens, eight miles an hour up the Hudson. While availing himself of instruments of exquisite adjustment and perfect finish which facilitate his work in a manner unknown to his predecessors, the student can trace the successive developments by the actual object (much more memorable than a printed description), and find a stimulus to ambi-

tion in repeating the experiments made by Faraday or others with the very apparatus that the great physicists themselves employed. Other things being equal, the equipment of its physical and mechanical laboratories would still give the Stevens Institute an advantage over other schools in preparing young men for the profession of a mechanical engineer.

The boy who has a positive talent in this direction is apt to reveal it at a tender age. Like the *cacoëthes scribendi*, which plunges its immature victim into such trifling literary matters as epics and tragedies without compelling a knowledge of orthography or prosody, the mechanical instinct is urgent and overflowing, and applies itself to practice at a very early period. It has been known to separate all the parts of a watch which has been incautiously left within the reach of a seven-year-old—to separate them so perfectly that they could never be put together again; and another manifestation familiar in many large families, has been the unaccountable removal of all the door-knobs, or the suddenly eccentric conduct of an old kitchen clock which has hitherto been unimpeachably regular in its habits. That there are apparently no tools or materials for this instinct to work upon is not an embargo. Its demands upon the domestic pharmacopœia are its most reprehensible feature; it is extravagant in requisitions for court-plaster, witch-hazel and bandages. Gradually developing from a diffusive and barren propensity to tinker, it has achieved three definite results in a case known to the writer, when its possessor was only thirteen years old—a model locomotive that “went” spasmodically, a model marine engine that would not “go” at all, and a model air-pump that inauspiciously burst. But has not the road to success always been paved by such failures?—not failures at all in the eyes of the young mechanician, but exciting and anticipated culminations.

The mother may be happy and content, despite her anxiety over his cut and crushed fingers, if her boy evinces such inclinations for mechanical pursuits; he is surely not idle nor stupid, and they open

amplification of the sound-waves by the electro-motograph may be regulated to suit the necessities of the occasion simply by increasing the area of the diaphragm, it can readily be understood that the most delicate of sounds may be brought out with clearness and, what is more, with absolute accuracy. And in connection with accuracy it may be observed that the electro-motograph, as used for the purpose of amplifying sound, overcomes a defect in the microphone that has been quite a serious drawback to the usefulness of that instrument. The microphone, as is well known, amplifies sound-waves many degrees, making

audible, for instance, such delicate sounds as those made by the feet of a fly passing over paper, but unfortunately, the reproduction of the sound as amplified is far from accurate. On an average, about four times out of ten the sound as amplified cannot be recognized as the original sound, the changes in its character being due to the magnetism employed, which latter interjects its own attending phenomena. All the wonderful results in the amplification of sound, attainable by the microphone may be obtained, and in a more perfect manner, by the electro-motograph.

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#### TOPICS OF THE TIME.

##### Southern Civilization.

WE wonder if the South knows how hard it is making it for its friends and those who would think well of its spirit and society. We know there are two Souths, but everybody does not know it. We are quite aware, and every one is likely to be so, that the South is politically a unit for its own purposes. Even in this we think Southerners make a grave mistake, as Southern solidarity will be sure to beget Northern solidarity, and the South knows what that means for them and their views of national policy. But for this we have no disposition to blame them. We understand in this quarter that the South has no great love for the national flag as such, and that "the lost cause" is still very precious to its politicians and its people. We understand this, we say, and we expect in all their dealings with national affairs only such a policy as would naturally be dictated by the circumstances in which they are placed, and the unrepentant spirit which still possesses them and on which they take their stand and boldly make their boast.

With this we do not quarrel. We expect it. It is the most natural thing in the world that we should have it; but certain events have occurred in the South of late with astounding frequency, which betray a condition of morals and society that makes every true friend of the South and every true American hang his head in shame. Murder after murder is perpetrated in high life with the coolest blood and nobody is arrested for it and nothing is done about it. Now, as we have said, we are perfectly aware that however much of a unit the South may be politically, there are socially two Souths. There is a law-loving and law-abiding South, and there is a South that is neither the one nor the other. We understand perfectly that to a great number of Southern people such a beastly murder as that of Judge Chisholm and his family is horrible. We understand that to these people such notable mur-

ders as have taken place all over the South during the last three months are a great shock and a great sorrow. The feeling finds expression in some of their best newspapers, but the trouble is that this South is utterly overawed by the other South, so that no man dares to move for the maintenance of the law and the punishment of crime. Murder is committed, and the murderer shakes his bloody hands at the law everywhere and walks the streets with entire freedom and impunity. Human life is accounted of no sacredness whatever, and law and the executors of law are held in perfect contempt. The judge upon his bench is not safe. Even the lawyer who tries a case that involves any serious personal relations takes his life in his hands when he does so. The most trivial causes seem sufficient to awaken the brutal instincts of men and to induce the extreme of violence. Fighting weapons seem to be in every man's pocket, as if he lived in a state of war, and he does not hesitate to use them on the smallest provocation.

We read of banditti in Italy who make it unsafe for a traveler who has any money to get outside the lines of ordinary travel, and we wonder at the imbecility of a government that can give him no protection, and at the low state of civilization that renders such abuses and outrages possible. We have no longer any reason to look abroad for anomalies of this sort. These Southern murders give evidence of a lawlessness and a degraded civilization much more notable than anything that can be found among the Italian wilds and mountains. They are abominable, beyond the power of an ordinary pen to characterize. There is nothing whatever to be said in apology for them. The American, when he reads of them, can only hang his head in horror and shame, and groan over the fact that such fiendish deeds can be perpetrated under his national flag without punishment, and without even the notice of those who pretend to administer the law.