

HOW ANALYSES ARE MADE.

Under the auspices of the Natural History Society of Montreal, Mr. Nevil Norton Evans, M.A.Sc., gave a most eloquent and interesting lecture last evening in the chemical lecture room, McGill College, on "How a Chemical Analysis is made." Dr. Wesley Mills presided. The subject of chemical analysis being a very large one, the lecturer stated that he would confine his remarks to the recognition and determination of the metals only.

Chemical analysis is divided into two divisions—qualitative analysis, or the determination of what elements are present in any substance under examination, and quantitative analysis, or the determination of the quantities of the elements present. Qualitative analysis may be divided into three branches—preliminary examination, solution, and analysis of the solution. The object of the preliminary examination is to obtain a more or less general idea of the nature of the substance to be analyzed. Some of the operations of this branch were then described and illustrated by Mr. Evans. Small portions of various substances were introduced into a non-luminous flame, and it was noted whether characteristic colors are imparted to the flame. Chloride of copper tinges the flame a beautiful blue, strontium compounds color it crimson, etc. The method of testing the substance in the borax bead was also illustrated. A small loop is made on the end of a piece of platinum wire; this is heated and plunged into powdered borax, some of which adheres to the wire; this is fused in the blowpipe flame and more borax added until a colorless, transparent bead of borax occupies the loop of the wire. Many metallic compounds when fused in such beads impart to them characteristic colors, such as cobalt colors the bead blue; manganese the bead purple; whilst certain substances when heated before the blowpipe produced "coatings" or incrustations on the charcoal, which are characteristic. After the lecturer had exhibited some of these and an idea as to the nature of the substance under examination had been thus obtained, he then proceeded to bring the substance into solution, which was effected by the use of water acids, etc. The lecturer here explained what is meant by the term precipitate, and illustrated the operation of precipitation and separation by means of filtration. The substance having been brought into solution, groups of metals are precipitated from the solution, one after the other, and appropriate methods for distinguishing the separate metals in the different groups are applied.

It was remarked by the lecturer that one of the most useful re-agents in effecting these separations is a gas with an odor graphically described is text books on chemistry as that of rotten eggs. On this account it was thought best not to use this re-agent at the lecture, but fluids containing precipitates produced by it were exhibited sealed up in glass tubes. The two sub-divisions of quantitative analysis were next treated.—*Montreal Gazette, 30th.*

INSURING OLD MAIDS.

A scheme is on foot in London for starting an "Old Maids' Insurance Society." This would be a novelty in England, but in Denmark several institutions of the kind have been in existence for some time, and have been found to work very well. The societies, of course, do not guarantee that their lady clients shall all be married, and so be insured against the loneliness of a single life; they are benefit societies pure and simple. The premiums vary according to the age of a lady joining such a society, and if they remain unmarried until they are forty they are entitled to an annuity. If, however, any lady marries, whether before forty or afterwards, they forfeit all the premiums they have paid, the amounts going to swell the general fund for the benefit of the unmarried. In this way enforced spinsterhood of slender means are enabled to make some provision for themselves in their old age. There is, no doubt, something worthy of consideration in the idea, and it would be worth while to study the Danish plan in all its details—to ascertain, for instance, whether there is any varying table of fees for the young and beautiful, who are likely to go off quickly in the marriage market, and their less favored sisters whose chances of "going off" are more remote.—*Manchester Examiner.*

CHATTEL MORTGAGES.

The question of chattel mortgages given upon growing crops, even before the seed is in the ground, is a matter which has of late received considerable attention from business men. At the annual meeting of the Winnipeg Grain Exchange last week, President Atkinson referred to the subject, and his remarks include a strong condemnation of the custom. We cannot do better than quote his words in full as follows:—

"The only too extensive system pursued, in late years in this Province, of farmers giving chattel mortgages on their growing crops, has led to considerable trouble and annoyance in handling grain at shipping points. Dealers and elevator owners at these points, this past autumn, in many cases were served with notices from agricultural firms, warning them that they had chattel mortgages on the crops of farmers named in accompanying lists, and further, that in case the dealer purchased any of this wheat, the payments therefor were to be made to the firms serving notice. It is quite apparent that it is an impossibility for the street or elevator buyer to recognize the identity of mortgaged wheat from the free article, the whole grain arriving in wagon or sleigh loads without any distinguishing mark; buyers have no means of knowing who is the owner of the wheat presented to him for sale, beyond the fact that the load has to be paid for in cash to the deliverer thereof. The evil of this system of holding the purchasers of grain, offered in the open market, responsible to the mortgagee, is so great that unless the Legislature provides some relief, the trade will be so hampered and the difficulty of purchasing grain so increased, that precautions will have to be taken by buyers which will increase the cost of handling, and thereby lower prices to producers. It is admitted that the finding of a remedy is not easy, but now that the evils of the system have become so apparent it is to be hoped that the Legislature will find means of meeting the difficulty."—*Winnipeg Commercial.*

NO MORE \$10,000,000 COMPANIES.

By an Act of the Province of Ontario, assented to on May 27th, 1893, it is enacted that where any advertisement issued by a company, association or corporation, or circulated by an officer of such, "purporting to state the subscribed capital of the company, the capital actually and in good faith subscribed, and no more, shall be stated."

And any such corporation or its agent who publishes or circulates any statement which boasts as the capital of his company any larger sum than the amount truly subscribed, or which makes any untrue or false statement as to its management or financial standing, which statement is intended or calculated to deceive or mislead, shall upon conviction before any police magistrate or justice of the peace having jurisdiction where the offence was committed, be liable to a penalty of not less than \$50 and costs, or more than \$200 and costs. And in default of payment the offender, being any officer or agent or employee as aforesaid, shall be imprisoned from one to six months. Any one may be a prosecutor under this Act, which shall go into force on 1st day of January, 1894.

Such are the terms of "An Act for the better prevention of fraudulent statements by companies and others." Province of Ontario (56 Vic., Cap. 33).

ANNUAL INCOMES.

By Mr. Goschen's analysis of the English income tax returns, it was found that in ten years the number of incomes paying duty on up to £500 had risen 21.4 per cent.; those between £500 and £1,000 had not increased at all; those between £1,000 and £5,000 had decreased 2.4 per cent., and those over £5,000 had decreased 2.3 per cent. According to Mulhall's estimate in 1877, £7,770,600,000 of British wealth was distributed among 6,676,000 families, and two-thirds of it was owned by 222,500 families.

The statistics of the United States show quite other results. They prove not only that the wealthy class there is enormously wealthier than the wealthiest class of Great Britain, but also that the wealth of the country is in much fewer hands. Mr. Thomas G. Shearman esti-

mates the average annual income of the richest hundred Americans at about £300,000; and the average annual income of the richest hundred Englishmen at about £90,000.

The earnings of fully four-fifths of American families do not average, he says, £100 per annum. According to the estimate of the wealth of American millionaires, it seems that 25,000 persons own one-half of the entire wealth of the United States; and, if the present rate of taxation and accumulation continue, it is computed that that great country will be practically owned by about 50,000 persons—say one-thousandth part of the present population.

We have cited these figures because they carry on the face of them the refutation of the new doctrine that it is good for the world that wealth should be concentrated in few hands. That 120 persons in the United States should possess among them an aggregate capital equal to the entire national debt of Great Britain is a remarkable fact, which cannot but have vast economic and ethical significance. For it is not conceivable that these hundred and twenty persons can so administer such a fund as, say, 120,000 persons, with smaller proportionate shares in it.—*Chambers' Journal.*

HOW TO MAKE MONEY IN WALL STREET.

The popular idea of making money is perhaps correct; that the art consists in so making use of circumstances as to produce large results from small factors, so that the career of the true financial artist may be summed up in the well worn history of many of our millionaires—they came to New York poor boys, without a dollar in their pockets, and died possessed of whole blocks of buildings and realms of dividend-paying railway stocks. Such results are evidences of talent and industry and command respect. These men have "made money" and an innumerable host of our young men want to do the same. The vast majority will not succeed. A few will succeed, and those who fail and those who succeed will equally obey the operations of natural laws from which no human destinies are exempt.

How to make money in Wall street is only one branch of a great subject; a fragment of the great problem, whose solution occupies the waking hours of nearly every adult male human being on the planet, outside of the savages of the darkest Africa and our own untaxed Indians. And, perhaps, to solve the problem as to Wall street is not more difficult than to solve it as to the dry-goods district, or the cotton and wheat exchanges, or to the manufacture and sale of any commodities whatever. A great many men lose money in Wall street, but I seem to have a dim recollection of having heard somewhere, at some time, of the failure of certain wholesale, as well as of certain retail, dry-goods dealers; and of the entrance of the sheriff upon the premises of grocery firms; and that men have been swamped by too much or too little wheat and cotton; and that some citizens have even come to grief in the manufacture and attempted sale of wooden bowls and clothes-pins, and carpet-tacks and such things. To speak seriously, is there any branch of human employment that is not exposed to vicissitudes? Can we absolutely rely upon the certainty of any given result which depends upon the combinations of the market.—*Henry Clews in February Godey's.*

—The prospects for the new year are more encouraging. Although no little English trade has gone abroad through the strike, there will be in the heavy departments more work in armor plates, marine and railway material; while the Argentine Republic, Brazil and South American markets generally are expected to yield more freely, in harmony with the increased business looked for from the United States, Canada and Australasia.

—It is estimated that the miners' strike cost the country sixty millions sterling in lost wages, work, dividends and damage, direct and indirect. The establishment of a Board of Conciliation would, no doubt, if honorably worked, make an end of all this misery; but while I write the project is stopped by disagreement as to a chairman, and the Speaker of the House of Commons is appealed to by both sides to make the appointment.—*Sheffield Cor. Martineau's Hardware Journal.*