

which is the staple industry of Luton. The precipitating material is an intimate mixture of clay and coke dust raised to a high temperature in retorts, and subsequently treated with crude sulphuric acid. The resulting black powder is thoroughly stirred up with water, and delivered into the sewage in a graduated stream; powdered chalk is also added at Luton in order to get rid of the coloring matters. After treatment a copious precipitate falls into the settling-tanks, and the effluent water is clear, colorless and odourless. The process is said by its inventor to be very economical as well as effective. The sludge, it is believed, can be baked, and used over again two or three times until a valuable manure is obtained. Provisional protection has been obtained for the process.

As illustrating German enterprise, a London paper notes the forward policy adopted by a German firm in the Island of Ratagahana, one of the Maroon group in the South Pacific. Not long since, Messrs Schloss and Trubner purchased this island out and out, and has steadily been preparing for its development. It has been resolved to put the whole of the island under sugar cultivation. The barque "Moonshine," which was chartered and despatched with the first lot of machinery and plant was wrecked and all lost beyond recovery. Messrs. Schloss and Trubner, however, have lodged the necessary credit, and have instructed their agent in England, to purchase on their behalf various plant and machinery to the extent of £130,000, comprising two sugar mills on the latest Liverpool plans, an iron pier, sixteen miles of light railway, a small steamer, and various necessities. The sugar produce will be disposed of in Australian markets and in San Francisco, Oregon and other West Coast ports of America.

At the semi-annual meeting of the New England Cotton Manufacturers' Association in Boston, two vexed questions will be presented which must excite an interesting and valuable discussion. Mr. F. A. Leigh will present a paper upon English carding, giving the result of careful investigations during his recent visit to England, and other members of the Association will be prepared to give statements in regard to American carding as compared with the English system. The other important paper, says the *Boston Bulletin*, will be that of Mr. Hamilton A. Hill upon the subject of high-speed engines, also to be followed by discussion.

As showing the extent to which gas is coming into use in Great Britain as a medium for cooking and heating, it may be mentioned that in the five months since the stove department was opened by the Gas Committee of the Corporation in Glasgow, some two thousand stoves of one kind and another have been fitted up in that city and neighbourhood.

Bevelled glass, for interior embellishment, for glass doors, for mirrors, gasaliers and a dozen other purposes, is among the latest and most attractive of house decorations. It is not generally known, we believe, that an establishment for bevelling glass exists in Toronto. If any one is fortunate enough to obtain permission from Mr. Philips, the managing partner, to enter the extensive premises of the Cobban Manufacturing Co. he may see the interesting process, as also the delicate operation of making mirrors by pouring the molten nitrate of silver over the great plates of glass. Another of the departments in this big building—it has, since its enlargement, 192 feet frontage on Front Street and 102 on Teraulay, and employs 150 hands—in the manufacture

of picture frames. Room after room is occupied with the different processes. In the moulding room, as a visitor puts it, one would at first imagine himself in a bakeshop. Men with aprons and caps are rolling what appears to be dough, but which is really a mixture of glue and whiting. This mixture is then placed on one end of a long, narrow, flat piece of planed wood, and the whole passes rapidly under what appears to be a small wheel encircled by a brass band covered with scrolls, and cut markings. To the surprise of the uninitiated the piece of wood twelve feet long comes out covered with a beautifully moulded plaster closely adhering to it. This is the only machine of the kind in Canada, we are told, and turns out moulding at the rate of 12 feet in 30 seconds. Next the moulding is varnished and gilded.

A manufacturer in Breslau has recently built at his factory a chimney over 50 feet in height entirely of paper. The blocks used in its construction, instead of being brick or stone, were made of layers of compressed paper jointed with a silicious cement. The advantages are the fire-proof nature of the material, the minimum of danger from lightning, and great elasticity.

Mr. Foulis, the Corporation gas engineer of Glasgow, has an invention by which an ordinary coal kitchen range can be converted into a gas-cooking and water-heating range. Hitherto the drawback with gas stoves has been that when hot water was required for the bath-room, or house-heating purposes, a separate fire had to be lighted. By the new arrangement a constant supply of hot water can be obtained, while the fire, which is composed of asbestos and brick work, has all the brilliancy and warmth of a coal fire. A specimen of the converted range is on view at the Gas Office in Virginia Street, and is attracting, says the *Glasgow Herald*, a great deal of attention on the part of householders.

AUDITORS AND AUDITING.

We take pleasure in giving some extracts from the paper read before the Institute of Accountants last week by Mr. Geo. F. Jewell, of London, on "Auditors and Auditing." Our readers will observe that the essayist is thoroughly up in his subject; and some of his recommendations are as courageous as they are sensible:

THE ESSAY.

"As the times change, and we change with them, so new modes of business, and new manners of dealing with things which in themselves are unchanged, are rendered necessary by the variation of surrounding circumstances and certain procedures become indispensable which were formerly, at the most, only optional, and of which the utility was not generally recognized; amongst these, may be classed the science of auditing, which forms the subject of this paper.

The multiplication of undertakings sought to be carried out, not by the capital of single individuals, or of firms, whose members might be personally acquainted with at least the principal details of their business, but by those who deem it to their advantage to make use of their small capital in conjunction with that of others, or, who, having large amounts to employ, prefer to distribute them amongst a variety of undertakings, may be regarded as one of the prominent features of the present century. A very large proportion of the financial and commercial business of the world at large is now conducted by joint stock companies whose name is legion, under their varied organizations and designations. In such a company each shareholder has a desire to know what is being done, and especially whether the adventure is a winning or a losing one, and to what extent. As it is seldom possible for the individual shareholder to satisfy

himself by personal examination of the correctness of these statements, even in cases where the rules of the company would permit such enquiry to be made by him, and as it also frequently happens that other interests than those of the stockholders, such, for instance, as the holders of a Company's bonds or debentures, deposit pass-books and receipts, require a sufficient guarantee of their security, recourse is made to the appointment of an independent examiner, who shall confirm or correct the information offered, and who is usually known as an auditor.

AN AUDITOR'S DUTIES.

The duties of this official are to make a thorough and intelligent examination of the whole of the business of the Company during the period over which his audit extends, to see that the business is being carried on in accordance with such laws as may have been made by the Legislature as are applicable to it, and in such a manner as to violate neither the constitution of the Company nor any of the by-laws made by proper authority for its regulation. If the Company is newly organized it is his duty to see that the issue of stock has been properly made, and the payments on the same duly recorded; if he succeeds another auditor, it should be his first care to satisfy himself of the correctness of the previous balance of the Company's books and statement of assets and liabilities, which should be found to harmonize, and that no hiatus exists between his work and that of the former auditor.

The starting point having thus been clearly defined, he will proceed to examine the records of all business done during the period audited, requiring from the proper officials of the Company such evidence in relation thereto, as from the nature of the transactions and the rules of the Company, they ought to be in possession of; and this having been done and the books of the Company shown to balance, he will proceed to verify the final statements of assets and liabilities and the balance sheet, seeing that the proper entries for closing the books have been made, and, finding all right, will append his certificate.

HE BEGINS.

Allow me, however, in illustration of my subject, to introduce to you an auditor, and his audit, under favorable circumstances. Supposing that he has been appointed to his position as the auditor of a Loan, Savings and Debenture Company, not on account of his relationship to a director, or because he is a "good fellow," or because he is "very poor," and it will be a charity to give him the job," or because he doesn't understand anything about it, and may rather prove a ready tool than confess his ignorance, or for the reason that he does, but can be persuaded to view matters in a variety of lights "for a sufficient consideration"—but by the vote of the shareholders, who have recognized in him sufficient ability to comprehend and execute his duty, and who have given him credit for sufficient integrity and honesty of purpose to do what is right, and accept the consequences.

He recognizes that, in any event, the sooner the current transactions can be verified the better, and therefore as early as possible after his appointment he proceeds to occupy the ground. He enters upon his work, not with the determination to treat every man as a rogue, as has been suggested to be the duty of an auditor, but rather with the determination to understand for himself the reason for and evidence of all the transactions which may come under his audit, so that while neither suspecting dishonest intentions on the one hand, nor giving undue confidence on the other, he may be on the alert to recognize any fraud which may be attempted.

Having informed himself of the business routine, and the character of the records and other evidences which will be available for the confirmation of the various transactions which will come under his audit, and having made himself acquainted with the entire system of bookkeeping in the several departments, some of which may present to him new and convenient adaptations of the accountant's art, and having also "posted" himself as to the effect of general or special Acts of Incorporation, by-laws and constitution upon the operations of the Company, and especially as to his duties in relation thereto, he commences his preliminary investigations, and makes sure of his starting point. This accomplished, he examines the cash account of the Company, for such a period as he can readily complete