

CORRESPONDENCE.

"VENTILATION."

SIR,—In a late issue of the SPECTATOR I find myself called upon by a correspondent signing himself "Commodum et Salus" to furnish the public, through your valuable paper, with an explanation of my system of ventilation, which I had called public attention to, immediately after the accident to the "Sardinian." I have for a number of years (in common with others) recognized the great necessity that existed for a thorough and true system of ventilation, of a simple and economical nature, based upon and working in conformity with natural laws. In the absence of drawings, models, specifications, &c., which cannot be exhibited in a letter, I must necessarily confine myself to simply giving an outline of the general principles which govern my system, and which have commended it to scientists, builders, the press, and hundreds to whom it has been shewn. I find from careful experiments that tubular shafts of cast-iron or other metal sunk to the base of buildings, ships, mines, sewers and all places where foul air and gases are generated can be made a vehicle for carrying away from their lurking places the deadly and vicious poisons that have been the cause of so much calamity in the destruction of life and property. The shaft alluded to is constructed in sections reaching throughout the entire building, ships, mines, &c., from bottom to top, and enlarged in each compartment as it extends upwards, with registers at the base and ceilings of each compartment, the former receiving and carrying away the heavier atmosphere; the latter the lighter, it being a recognized fact that foul air being the heaviest lies at the bottom, while the rarer fluids rise above. In order to keep up a circulation and carry off this vitiated atmosphere, we must supply its place with fresh air; this is done by building on the tops, or in the attics of buildings, reservoirs with air catchers, which supply, according to the outward pressure and size of the apertures, the amount of air necessary to keep up a continuous current. In order to get and keep up this continuous current, a vacuum must be created in the shaft; this may be done by connecting the shaft, at any given point throughout its length, with such heating apparatus as may be found most convenient.

Your correspondent asks if I have brought my system of ventilation to the attention of the Messrs. Allan? I would say that I have done so several times since the deplorable accident to the "Sardinian," but so far without success, being met with the reply (from their Mr. Smith), "That their ships were well enough ventilated, and that such an accident as had occurred to the 'Sardinian' could not occur again." The very next day an accident (from like causes) happened to the "Sarmatian," by which two valuable lives were lost.

Yours, &c.,

JOHNSON BRIGGS.

Montreal, June 24, 1878.

P.S.—It can hardly be expected that I would enter into a full and detailed explanation of my invention to any, except those who propose to adopt it, as the world is not without its plagiarists, or, as the immortal bard has it, filchers.

J. B.

MUSICAL.

The value of an institution having authority to confer diplomas, &c., on musical students can hardly be over-estimated. It is the pupils safe-guard against careless or incompetent teachers; the fact, too, of having to pass examinations at stated intervals stimulates the student to greater exertion, as it places before him a goal to be reached, and gives him an opportunity of measuring his strength with his fellows before competent judges. We accordingly record with pleasure the annual examination of the "Academy of Music" of this Province, which took place at Quebec on the 4th inst., when diplomas in the different branches of musical education were conferred, under authority of Act of Parliament.

By a strange coincidence the examinations of Trinity College, London, (which are held simultaneously in London, Dublin, Manchester and Shrewsbury) were held on the same day. We have not, at the time of going to press, received a report of any of those examinations, but understand that the number of students seeking diplomas is annually increasing, and that these institutions are becoming properly valued and supported by those for whose benefit they were founded.

As many of our readers may not know even of the existence of the Quebec Academy of Music, we would inform them that it has been in existence for several years, having been incorporated in 1868. The examinations are held annually, in Montreal and Quebec alternately, and diplomas are given for proficiency in every branch of musical art. Prizes also are given for special excellence, the Academy having an annual grant from Government for this purpose.

We wish the Quebec Academy of Music every success, and recommend our readers to take advantage of the opportunity afforded them of knowing their exact status, either as theoretical or practical musicians.

Music is now so generally cultivated, and so many (some competent, many more incompetent) profess to teach it, as a means of livelihood, that it is well to have some means of determining beyond dispute whether the teachers having charge of the musical education of our children are competent to discharge that office. This can be done in two ways:—Either compel the teacher to produce a diploma from a properly constituted board of examiners, or, better still, send the pupils before the board; when, if the children have been properly instructed, these gentlemen will, as it were, place the "hall mark" on the teacher's work, by giving to each a certificate according to merit.

At these examinations we are in a position to judge relatively between one teacher and another, and the old-time plan of trusting altogether to "reputation" (made in most cases by an aptitude for advertising rather than for teaching) will become obsolete.

So much for the public. We would now address a word of advice to those having authority to confer diplomas. As the value of a certificate depends entirely on the status and honorable reputation of the person or body granting it, it behooves those in office to select, as examiners, honorable and competent men, and to let each diploma be in reality what it purports to be—a standard certificate of merit.

At the Festival Service of the Sons of the Clergy, at St. Paul's Cathedral, on the 15th ult., Spohr's "Fall of Babylon" was performed prior to the ordinary service, the choir of the Cathedral being augmented for the occasion, and accompanied by an excellent band of about fifty performers under the direction of Dr. Stainer. Spohr's Cantata "God, Thou art great!" was sung as an anthem. The canticles were sung to music composed for the occasion by Mr. Fanning, and were also scored for full orchestra. Mr. G. C. Martin, the assistant organist, played the voluntaries and assisted in the accompaniments with ability.

The celebrated Stradivarius violin, known to connoisseurs as the "Betts Strad," was recently sold to Mr. George Hart for eight hundred guineas. It was purchased by Mr. Betts for a sovereign!!

We scarcely believe that our American friends will agree with us, but in our opinion the success of "Gilmore's Band" in this country cannot be in the slightest degree influenced by the issue of a pamphlet, as an *avant courier*, detailing the minutest particulars of the career of

Mr. Gilmore, even from his birth "near the city of Dublin, Ireland, on Christmas Day in the year 1829." The qualifications of the conductor of a band are determined by the manner in which he conducts; and we are too independent in our judgment to be swayed by the "Opinions of the Press" so extensively quoted in the pamphlet already mentioned, which has been forwarded to us. It must be remembered, too, that the monster meetings in America over which Mr. Gilmore presented, although grand successes there, have not been so considered by several of the European visitors; and when we read, in a speech made to the great Conductor after one of these musical gatherings, the following passage—"Europe has had her great and distinguished leaders and masters who have been famous and celebrated in your profession; but who beside our Gilmore has ever conceived the deep and awful bass of the booming cannon as the fundamental note to a national anthem with which to startle and astonish the world?"—many of us will smile at the idea of the laws of acoustics being so set aside that it becomes necessary to bring in gunpowder to aid the admitted feebleness of the music. Mr. Gilmore need not doubt that his talents will be appreciated at their true worth in England; but we should have preferred to receive him without his printed letter of introduction.—*Musical Times*.

Miss Emma Abbott has given 176 concerts in the past season, and has travelled 18,000 miles, making the sum of \$20,000 on her long trip.

Adelina Patti, Nicolini, and Maurice Strakosch have had a triangular quarrel, and now there is no chance for Patti to come to America at present.

Miss Thursby has had greater success in London than any American singer hitherto.

CURRENT LITERATURE.

GEOLOGICAL SURVEY OF CANADA, A. R. C. Selwyn, Director. Map shewing the distribution of Apatite in Ottawa County. Dawson Brothers, Montreal.

This map shows a tract of land extending northward from the Ottawa River ten miles with a width of four miles, in which are found vast deposits of apatite or phosphate of lime. It is also found in various parts of the County of Ottawa. The quantity of good merchantable apatite seems inexhaustible. Whether regarded in a commercial point of view or in reference to the agriculture of the country, the value of these deposits is beyond calculation. In South Carolina, where there exists similar deposits, a trade has sprung up in apatite which employs a large number of men, requires the service of railway to carry the mineral to the seaboard and a large number of ships for transport. There are various marks on the map to indicate the points where openings have shown rich mineral deposits. What is to be done with this vast deposit of mineral wealth. We predict that many will lose money in purchasing at extravagant prices useless lands, and that many who are fortunate in getting possession of a rich deposit, by mismanagement the investment will be lost. That there is a good business to be done in crude apatite in shipping to England cannot be doubted. This trade requires arrangements to be previously made for the purchase on arrival of the ore, which must of necessity be of the best description. Another mode of utilising the apatite here is to convert it into superphosphate as a fertilizer. In its crude state the apatite is no better than so much sand; but by the addition of sulphuric acid it is rendered soluble in water, and in this condition is one of the most valuable fertilizers. The process of making superphosphate is very simple. It may be prepared from bones by crushing them as fine as possible, and adding to every hundred pounds of bone placed in a barrel seventy-five pounds of sulphuric acid, occasionally working over and finally adding an equal quantity of earth. Superphosphate may be made from the rock mineral; after powdering it add to every hundred pounds of mineral sixty-five pounds of sulphuric acid, work this well and add a bushel of earth. The best mode of obtaining superphosphates is to get it from some responsible manufacturer. Where the superphosphate is made on a large scale with every facility, it can be produced cheaper and better than it can be done otherwise.

Owing to the ignorance of agriculturists of its priceless value there is a limit to the demand for superphosphate in Canada. One establishment could easily supply the whole Dominion.

It may be made a profitable article of export to the West Indies and other countries. The trade in apatite will probably be confined to the export in its crude state. It can be used as ballast, and can be transported like coal. The prepared superphosphate would require to be packed in barrels, which would render it very expensive, besides English dealers will only buy such as is of known strength.

It will therefore be necessary if superphosphate is shipped that the quality and value of each barrel be distinctly marked in the same manner as the different grades of flour or ashes. New Hampshire, which has a most unproductive soil, requires the use of fertilizers. The imposition upon the farmers was so great that a law was passed by which the constituents were to be marked upon each package in exact percentage. Such must be the law in Canada if farmers are to be induced to buy. As to the use of superphosphate there can be no doubt of the great utility as a fertilizer. Experience as well as theory teaches us that the superphosphate is the most valuable fertilizer known. The Valley of the Richelieu was once the most fertile and largest wheat growing district of Canada. The county derives its name Chambly from Champ d'Blé, indicating the richness of the soil. To-day wheat is rarely grown, the soil being exhausted. In this district the superphosphate would be of great value. It is just the soil that requires this fertilizer. The Government appropriation to agricultural societies would be well spent in giving farmers in this district this valuable fertilizer. To show its superiority to all other fertilizers, in point of economy, experiments were tried for four years with different fertilizers, including barn-yard manure, sulphate of ammonia, nitrate of soda, bone superphosphate and rock superphosphate. The result was that while the net profit of barn-yard manure was 1.09, and sulphate ammonia 0.09, ground bone—00.

The gain by use of the superphosphates was 7.61½ for bone and 8.37½ for rock superphosphate. Compared to guano, superphosphate is superior as a permanent nourisher of the plant. Guano is to the plant what brandy is to the human system,—a temporary stimulant. If plants or grains are late or weakly, guano has a remarkable stimulating effect. Intelligent farmers should consider this question of fertilizers. It is simply a question of supplying the waste or exhaustion of soil caused by successive crops. To restore this equilibrium the superphosphate fulfils exactly the requirements of the exhausted soil. Hence its utility. Its cheapness will place it within the reach of every farmer, and it is to be hoped they will be quick to avail themselves of this most valuable means of restoring exhausted or maintaining fertile soils.

Had this development of the phosphates been the only result of all the labour and expenditure of money on the Geological Survey, it will be for the country a profitable investment.

In this age of progression the science of medicine seems to bid fair to keep up in the race and not to be left behind. Among the many "new ideas" brought under the notice of medical men is that of "absorption." It has been pretty clearly demonstrated that the skin has the power of absorbing and expelling at the same time. For instance, if an irritant be applied to the skin, it will be so acted upon that in time a blister will be formed, and if during this process any poisonous substance be applied, such substance will be readily absorbed into the system—thus proving that the skin is capable of a simultaneous double action absorption and expulsion. It is this peculiar power of the tissues that attracted the attention of the inventor of the Liver Pad, and so led to the discovery of The Holman Liver Pad. There can be no doubt that by a judicious use of applications to the skin much good may be derived. It is self-evident that medicine must get quicker into the blood by absorption through the skin than by imbibing a substance which must, before reaching the blood, pass through the various stages of decomposition in the stomach. This Mr. Holman claims for his remedy, and from the great list of testimonials submitted to us, there can be no doubt there is something in it.

THE ACCIDENT INSURANCE CO. OF CANADA is now issuing Policies and Permits for Travel, covering all accidents by land or water—fatal or non-fatal—at the same rate which had hitherto been charged for Insurances covering accidental death only when beyond the limits of Canada. An Insurance of \$5,000 if killed, or \$25 a week if injured, for a three months' trip to Europe, costs now only \$25 in this Company. The Head Offices at 103 St. Francois Xavier Street.—EDWARD RAWLINGS, Manager.—*Adv.*