

## Journal of the Society of Arts.

FRIDAY, DECEMBER 28, 1866.

### Announcements by the Council.

#### CANTOR LECTURES.

The following is the syllabus of the course of Six Lectures "On Pottery and Porcelain," illustrated by specimens of various manufactures, and by photographs and diagrams, to be delivered by WILLIAM CHAFFERS, Esq. :—

LECTURE I.—MONDAY, JANUARY 21, 1867.

ANCIENT POTTERY.—Introduction. Assyria and Chaldea, Egypt, Greece, Etruria, Rome, &c.

LECTURE II.—MONDAY, JANUARY 28.

MAIOLICA.—Italy, Spain, Persia, &c.

LECTURE III.—MONDAY, FEBRUARY 4.

FAYENCE.—France, Spain, Portugal, Russia, Sweden, Denmark, &c.

GRES OR STONE WARE of Germany and Flanders. DELFT WARE, &c.

LECTURE IV.—MONDAY, FEBRUARY 11.

ORIENTAL PORCELAIN.—China, Japan.

LECTURE V.—MONDAY, FEBRUARY 18.

EUROPEAN PORCELAIN.—Italy, Germany, France, Holland, Belgium, Russia, Poland, &c.

LECTURE VI.—MONDAY, FEBRUARY 25.

ENGLISH POTTERY AND PORCELAIN.—Early History, continued to the beginning of the 19th century.

The lectures will commence each evening at eight o'clock, and are open to members, each of whom has the privilege of introducing one friend to each lecture.

A new list of members of the Society has been printed, and any member can have a copy sent to him on application to the Secretary.

### Proceedings of Institutions.

MANCHESTER MECHANICS' INSTITUTION.—The distribution of the prizes, medals, and certificates to the students in classes at the Manchester Mechanics' Institution at the last examinations of the Department of Science and Art, the Society of Arts, and the Union of Lancashire and Cheshire Institutes, took place on the evening of the 14th December, in the lecture-hall of the Institution. Mr. Oliver Heywood, the president of the Institution, occupied the chair, and there were also present—Mr. T. Bazley, M.P., the Mayors of Manchester and Salford, the Rev. Canon Richson, Mr. W. Fairbairn, LL.D., Mr. Thos. Lawton, visiting agent to the Union of Lancashire and Cheshire Institutes, Mr. H. R. Forrest, Mr. D. Fielten, Mr. J. Plant, and others. There was a very large attendance. Letters of apology were received from the Right Hon. H. A. Bruce, M.P., Mr. James, M.P., Mr. Choetham, M.P., and Mr. Alderman Rumney. Mr. Jarrett, the secretary of the Institution, read a statement of the number of successful candidates at the several examinations, and of the prizes awarded. He stated that, at the examination of the Department of Science and Art, 153 candidates presented themselves, of whom 102 were successful. There were 25 first class,

21 second class, 59 third class, 23 fourth class, and 46 fifth class, making a total of 174 certificates of honour gained; last year the total was 293. Two silver and two bronze medals were also awarded at the last examination. At the Society of Arts examination 62 candidates presented themselves, of whom 48 were successful. Certificates were awarded as follows:—8 first class, 26 second class, 23 third class, making a total of 57; last year the total was 63. Mr. John Peiser, one of the vice-presidents, had intimated his intention of giving a sum of £5, to be awarded in three prizes, to the students most successful at the next examination in book-keeping, the class which Mr. Peiser is desirous to encourage. At the Union of Institutes examination, 41 candidates presented themselves; 19 in the higher grade, of whom 13 were successful, and 22 in the lower grade, 13 of whom were successful. Three of the higher grade students obtained prizes offered by the Union, in addition to certificates. In connection with the next Society of Arts examination, the president will continue his prizes of £5 and £3 each to the two students whose aggregate success for the years 1866 and 1867 shall be greatest; Mr. Leppoc repeats his £5 prize to the first-class candidates in arithmetic; and Mr. Peiser, as before stated, offers £5 to the pupils in the book-keeping class. Mr. Alderman Rumney again presents a prize of £5 to the most successful students in the science classes; and the president will give two prizes of £1 each to the two best candidates at the next Union of Institutes examinations.—The chairman having distributed the prizes, proceeded to deliver a very appropriate and effective speech, in which he dwelt upon the past history, and future prospects of the Institution, and summarised the educational efforts which had been made during the past few years. He specially alluded to an important meeting on the subject of compulsory education which had been held in the Town Hall on the previous Monday.—Mr. T. Bazley, M.P., moved a resolution declaring that the system of examinations as conducted by the Department of Science and Art, the Society of Arts, and the Union of Institutes, was conducive to the progress of general education, and therefore deserving of approval and support. He had been very much gratified with the conduct both of the successful and unsuccessful students. He remembered that his friend, Mr. Fairbairn, 40 years ago, was instrumental, in connection with the late Sir Benjamin Heywood, in calling into existence this institution; and Mr. Fairbairn had given another impulse to the cause of education by advocating with eloquence and with pecuniary power the formation of an engineering professorship at Owens College. After remarking upon the advantages of education to the young, and the necessity of freely providing it to the children of the very poor, he combated the worthless objection, as he considered it, to free education, that it was degrading to the parents of the children to whom it was extended, by reminding them that the principle of free education was at the foundation of our universities and public schools. The people of the Continent and of America were in advance of us in this respect, and set us an example which we ought to follow. The Mayor of Manchester briefly seconded the resolution, which was supported at some length by the Mayor of Salford, and unanimously carried. Mr. W. Fairbairn moved a vote of thanks to the donors of the special prizes. Mr. Forrest seconded the resolution, which was carried unanimously. On the motion of the Rev. Canon Richson, a vote of thanks was given to the president, and the proceedings terminated.

#### OPENING OF THE INTERCOLONIAL EXHIBITION.

This Exhibition was formally opened at Melbourne by his Excellency the Governor on the 24th October last, in the presence of a large concourse. The first of these gatherings took place in 1854, anticipatory of the Paris

Exhibition held in the following year. It was a creditable display for the period, a light structure of wood and glass having been erected for the purpose. The collection of articles constituted, however, rather a bazaar than an exhibition, most of them having been supplied by fancy goods men and general importers. Native produce was but poorly represented, and out of the entire list of exhibitors only thirty-six were in a position to contribute to the Australian court at the Paris international gathering. The Exhibition held in 1861 was a great improvement on its predecessor, the articles exhibited of local growth and manufacture being numerous and interesting. The building constructed in 1854, with the addition of an annexe nearly as large as itself, was used on this occasion. It resulted in the Victorian court achieving a proud position at the International Exhibition of 1862. These two events, however, though notable in Melbourne annals, sink into insignificance when compared with the magnificent undertaking which was recently inaugurated. Both in conception and execution this third Exhibition stands out as a grand and peculiar one. For the first time, the various colonies of Australasia meet in friendly competition at an independent gathering. It had been many months in preparation, and the interest attaching to it gradually increased, as exhibition after exhibition, in preparation for the central one, has been held in the large provincial towns of Victoria and the capitals of the neighbouring colonies.

The Commission nominated for the purpose was appointed a year ago. It was speedily perceived that the structure which had served for the previous exhibitions would be utterly inadequate to accommodate the collection which the various colonies might be expected to bring together; and one of the first important acts of the commission was to decide on uniting with the trustees of the Public Library in erecting an edifice worthy of the occasion, and suitable for the requirements of a museum after the temporary purpose had been served. It appears, however, that only the foundations and lower walls of the great hall and octagon are permanent; the superstructure is of wood, and the beauty of the interior is solely owing to its large size and to the elegant decorative colouring which has been laid upon it, under the superintendence of Mr. E. T. Bateman. The buildings occupied by the Exhibition consist of a great hall, a spacious octagon leading to it from the Public Library, two open-air courts on each side of this octagon, a northern wing containing the machines, a southern wing devoted to the pictures, and a large iron annexe, entered from the central hall by a short covered way. In addition to these there are the unoccupied portion of the garden in the rear of the building, the basement underneath the picture-gallery, set apart chiefly as dining-hall and refreshment-rooms, but also with cellars devoted to the exhibition of preserved meats, wines, beers, &c, of which there is a fine collection.

At the date originally fixed by the commission as the limit for the receipt of applications for space, very few had come in; it therefore became necessary to extend it from time to time, until at length applicants became almost more numerous than welcome, and the decided success of the undertaking was assured. This lateness of entry, however, has led to some confusion, both as regards position in the rooms and accuracy in the catalogues.

A few minutes before twelve, so complete were the preparations, that Mr. J. G. Knight, the secretary to the commissioners appeared with bound copies of the "Exhibition Catalogue." As noon struck the vice-regal party arrived. His Excellency, Lady Manners Sutton, and family appeared at the entrance communicating with the Public Library, and proceeded to the dais, and at the moment the band and chorus of 300 performers commenced the National Anthem. As it concluded Sir Francis Murphy, the acting president of the commissioners, stepped forward and read an address, in which,

after the warmest expressions of loyalty to Her Majesty, the commissioners proceeded as follows:—

"By the munificence of Parliament we are now assembled in a hall unequalled in the Southern hemisphere, and which, for extent and accommodation, as well as excellency of workmanship, will, when finished, be a lasting monument of the public spirit of our Parliament and the enterprise of our people. A report in detail of our proceedings will be laid before you, together with essays illustrative of our great national resources and of the social condition of the country, freely contributed by some of the most eminent men in our community. It is also our duty to inform your Excellency of the cordial manner in which this Exhibition has been supported by all classes in this country, and of the intelligent help which we have received from the manufacturers and workmen of every kind, to whose practical and generous efforts we are indebted for much of our success. We congratulate your Excellency on the arrival among us of representatives from New Caledonia, being part of the dominions of His Imperial Majesty the Emperor of the French; and also of the important city of Batavia, part of the dominions of His Majesty the King of the Netherlands, bringing to us the products and manufactures of their respective countries, and pledging themselves to a friendship and brotherhood in the objects of this undertaking. We further show to your Excellency that by the public spirit, intelligence, and industry of our sister colonies, we have gathered within these walls a collection of natural products proving the richness of their industrial resources, and a collection of works of art, manufactures, and machinery exhibiting the genius of their artists and the enterprise and the skill of their workmen, contrasting in friendly competition with our own—all being suggestive of a future time when the Australian colonies will be great and prosperous states, rivalling European kingdoms in all that is worthy of rivalry, and bound together by a united and loyal affection towards the British crown, as well as by the blessings of industry and peace. We earnestly hope that this Exhibition may be as productive of increased intercourse, of friendly relations, and of all the industrial advantages among these southern colonies, as exhibitions of a similar kind have been among European nations; being an additional proof, even in these southern seas, of the forethought and sagacity of the good and illustrious Prince Albert, whose memory will be ever revered, and associated with exhibitions of industry and art."

The report of the Organisation Committee was also handed to the Governor. From this document it appears that the great hall of the building is 220 feet in length and 82 feet in breadth, containing 17,000 superficial feet; the rotunda, 3,000; the north and south wings, 4,250 superficial feet each. Owing to the numerous applications for space by the intending exhibitors, the buildings were found inadequate to meet the demand, and it was therefore deemed advisable to erect the eastern annexe, containing 7,800 superficial feet, and even subsequently to increase its size by 3,000 superficial feet, giving a grand total of 38,500 superficial feet. The objects for exhibition were divided into six great classes:—Mineral products, animal products, agricultural with horticultural and indigenous vegetable products, manufactures and the useful arts, the ornamental arts, and machinery.

A fine collection of specimens of precious stones has been brought together through the energy of the Rev. Dr. Bleasdale. The banks in Melbourne have contributed valuable specimens of the precious metals, whilst from the various mining districts beautiful collections of quartz intermixed with gold have been forwarded. A pyramid is shown illustrative of the quantity of gold produced in Victoria from the year 1851 till a recent date. This structure is intended for transmission to Paris. There is a fair collection of samples of wool; and the local exhibitions held since harvest, assisted by the

agricultural societies of Victoria, have afforded an opportunity of obtaining the best and most varied samples of grain. Australian wine is well represented; and the specimens of indigenous woods, and their products, collected by Dr. Mueller, deserve particular attention.

Products from the exhibitions held at Ballarat, Sandhurst, Castlemaine, Beechworth, &c., have separate courts allotted to them; and complete collections have been presented from the districts of Wangaratta, Duncolly, Clunes, St. Arnaud, and others. The sister colonies—New South Wales, Queensland, South Australia, Tasmania, and New Zealand, are worthily represented by most complete collections of their various products and manufactures.

The north wing has been set apart for the arrangement of various kinds of machinery; and three engines, of twenty, sixteen, and four horse power each, are erected in the adjacent court, to afford motive power. The south wing is intended for the exhibition of paintings. In the open courts are fountains of the most beautiful and novel descriptions, which will add much to the success of the flower shows intended to be held from time to time, and arrangements for which have been made with the Horticultural Society of Victoria. Pipes from the Yan Yean Water Reservoir have been laid all over the buildings, so as to allay all apprehension of accident from fire.

In the eastern annexe will be found carriages of all descriptions manufactured in Victoria.

Much information, in the form of essays, has been provided by gentlemen in public departments, and ordered for publication; and it is intended that these works shall also be published in the French language. Mr. Brough Smyth, of the mining department, has furnished a description of the mineral resources of the colony. Professor M'Coy, professor of natural science in the University of Melbourne, makes a report upon recent and fossil zoology. Mr. Selwyn, government zoologist, has presented an elaborate treatise on the physical geography, geology, and mineralogy of Victoria. Dr. Mueller, scientific botanist, a varied essay upon botany and the general vegetation of the Australian continent. Mr. Ellery, the Government astronomer and director of the meteorological department, gives an interesting description respecting the atmospheric changes of the climate and other observations made at the Melbourne Observatory. Mr. Archer full statistics of the colony.

Lists of jurors were in course of preparation, and a medallion has been designed, which it is intended to attach to a handsome decorated card to be presented to those considered worthy by the jurors of this distinction.

His Excellency, having made a suitable reply, congratulating the commissioners on the success of their efforts, declared the exhibition open.

The musical part of the ceremony now began. First was sung the Old Hundredth Psalm, arranged for the occasion by Mr. Horsley. Handel's Hallelujah Chorus followed, and the performance concluded with a grand march composed by the conductor for the occasion.

The inauguration being now over, cheers were heartily given for the Exhibition, the Queen, and the Governor. Up to the latter part of the afternoon, 1,737 persons holding season tickets passed through the doors.

#### EDUCATION IN FRANCE.

The cause of education, general as well as special, and for youth as well as for adults, is being aided as much as possible by public distributions of prizes and honours in various parts of France. One of these public meetings was held the other day at Privas, in the Ardèche, when the clergy of both denominations, magistrates, public functionaries, and members of the *Conseil-Général* of the town and of the department, and 200 schoolmasters and mistresses were present. The prefect addressed the meeting, and presented, amidst the cheers of the assembly,

the Cross of the Legion of Honour to M. Manson, a public schoolmaster of Vernoux. At Mont-de-Marsan there was also a large gathering at the invitation of the Prefect of the department; M. Guillontet, deputy, presided, and, amongst other things, made allusion in his address to the new school of secondary special education, just inaugurated in the town. "Special education," said M. Guillontet, "responds to a pressing necessity; in past times the State favoured the education of the upper classes, which alone could attain it; now, and in future, it aims at the teaching of the greatest possible number; this is its duty, because the places which heretofore were reserved for a few privileged people are now open to all the world. In a society like ours the democratic level, having effaced the differences which existed between the military and the manufacturing classes, between the magistrate and the farmer, between the advocate and the tradesman, the development of industry, agriculture, commerce, and speculations of all sorts, opens to human industry a wider field than that of public employment and the learned professions. . . . The Government has comprehended and well fulfilled its duty, and, certainly, the result which will accrue from the new organization of public instruction will be one of its noblest achievements." A teacher named Ducasse was then invested with the new decoration of an Academic Officer—the palm branches—and returned thanks on behalf of himself and his fellow teachers for the sympathy extended to them by the authorities of the department. The Prefect of the Loire also presided at a similar meeting at Saint Etienne, and was supported by the *conseils* and other bodies, public officers and teachers of the department. Here, also, the Academic palms of the rank of officer were bestowed on M. Delorme, professor of design in the Lycée, for his gratuitous exertions during five months in improving the education of eighty foremen of works. The director of the Ecole Normale, the inspectors of primary education, and the prizemen of the adult classes, were afterwards entertained at dinner by the inspector of the Academy. At Constantine, in Algeria, the public distribution of awards occurred on the last day of September, under the presidency of the general of division commanding the province, assisted by the councillors and public officers. The inspector of primary instruction reported the results of the past scholastic session with respect to adult education. Out of 1,204 persons who attended the classes 286 could neither read nor write, and 143 could read only; at the end of the session 104 who had begun without any education could read and write, and 46 others could read with tolerable facility. Of the others they had all either improved themselves in what they had learned before or acquired new attainments. Some of the students had, in spite of bad roads, walked many miles to the school and back every evening. The municipal council of St. Ismier, in the Isère, voted a hundred francs in aid of the teacher of the adult classes, M. Hermite, but this worthy master refused to accept the money, but desired it to be devoted towards the expenses of the new school now in course of erection.

The *Conseil-Général* of the department of the Oise has decided on the organization of an inspection of the labour of children in the factories of the department, and has recommended that this duty be performed by the inspectors of the common schools, voting, at the same time, an allowance of 1,200 francs to be divided amongst the inspectors in proportion to the services performed.

#### COMMERCE AND CURRENCY.

The *Produce Markets Review*, in an article on the currency question, after speaking of the differences of opinion that have existed on this subject, says:—

"At the present time there is, it seems, so far an approach to a common ground or partial assimilation of views, on the part of the mercantile world, that a re-

stricted currency is supposed to be more or less associated with those periodical financial crises for which it is so difficult to discover a remedy. It may not be amiss, therefore, at the present moment to inquire how far our system of currency has kept pace with the vast extension of our commerce during the period of seven years, commencing with the year 1858 and ending with 1864, the last year for which correct official returns can be obtained. The comparison would have been still more complete had it been carried back for ten, fifteen, or twenty years; but as no imports of specie were registered at the Custom-house previously to the month of October, 1857, it is evident that no calculations could be considered as complete which should exclude from consideration so important an element as the imports of gold and silver coin. The total value of our exports and imports, in other words, of our external commerce for the year 1864, amounted to £487,571,786, against £304,366,611 in 1858, showing an increase for 1864 of £183,205,175, or of rather more than 60 per cent., in our foreign trade. Although it is impossible to give even relative figures for the increase in our internal trade, it must have augmented in quite as large a proportion as our foreign trade. In addition to these causes for an increased demand for currency, it will be remembered that weekly wages have universally risen of late years; and as they are paid in actual coin, the greater demand from this cause alone must be considerable. To estimate approximately the increase in our currency, we must add together our coinage and imports, deducting all exports:—

The Gold and Silver coin, issued from Mint, from 1858, to 1864..	£41,929,364
Add Imports of British Coin during the same period .....	£8,026,423
	£49,955,787 (a)

From this we must deduct the value of the exports of British coin, the value of the worn coin, re-coined, the decrease in Bank-note circulation, and the money exported by emigrants to British colonies, and by other travellers, during this period of seven years, a large portion of which would not come back: thus, then, we get

Exports of British Coin, from 1858 to 1864 .....	£32,137,304
Worn Coin recoined in same period	699,003
Decrease in Bank-note circulation	341,218
Money exported by 1,110,000 emigrants, and by travellers, say ..	5,000,000

£38,177,922 (b)

Deducting (b) from (a) we get as a result an increase of nearly £12,000,000 in our currency; whilst our external commerce alone was £187,000,000, or more than 60 per cent. greater. There can be no doubt, in fact, that the increase in currency for many years past has not kept pace with the advance in trade. In answer to this, it may perhaps be urged that by means of cheques and bills and the clearing-house system, the rapidity of our circulation has so much increased as to meet all the requirements of trade. This is undoubtedly the case in ordinary times; but it is on the approach or during the existence of a panic that the real trial occurs, for then cheques, drafts, or bills become partially useless, and the demand is almost general for notes and coin. The serious nature of the issue raised may be gathered from the statements made in Mr. J. B. Smith's recent pamphlet on the currency, that the Bank of England and three other joint-stock banks had, at the beginning of last May, only £8,065,080 of cash in hand, against liabilities of £87,913,182. It is true they held securities, but in times of panic even Consols are unsaleable. This state of things is most serious, and unless steps are taken it must inevitably become worse, because trade must continue to increase while the supply of gold and silver cannot augment in the same proportion, and the issue of notes

is limited by law. The banks, from their constitution, must continue to lend money out; financial crises will recur with greater frequency, and if at any time confidence is shaken in the main sources of money supply, such as our large banks, the results must be disastrous. A craft that can sail in smooth water only, and is unable to survive the perils of a storm, is after all but a poor specimen of naval ingenuity. Our currency ought to be sufficiently elastic to expand or contract with the demand, and if this cannot be done with a gold medium, additional recourse must be had in times of pressure to the safety-valve of notes. To cure the evil, various remedies have been proposed; the Bristol Chamber of Commerce, and the Currency Reform Association, suggest the desirability of removing the issue department from the control of the Bank of England, and substituting a National Bank of Issue, "independent of trade and the Government." Without pretending fully to discuss the various issues to which this arrangement might lead, we may remark that the impossibility of adequately performing the functions of banking and issuing has been frequently dwelt upon by many of our ablest financial authorities. 'It is a serious difficulty,' observed a writer in the *Economist*, two months ago, 'that the same bank which keeps the ultimate reserve should also have the duty of lending in the last resort. The two functions are in practice inconsistent—one prescribes keeping money, and the other prescribes parting with money, and no ingenuity can in critical situations fulfil both.'

### Fine Arts.

EXHIBITION OF THE WORKS OF THE LATE HIPPOLYTE BELLANGÉ.—The collected works of Bellangé are to be exhibited in February, in the rooms of the Ecole des Beaux Arts in Paris; and after the exhibition, the sketches of the artist and such pictures as belong to his family will be sold by public auction. Bellangé's last production, "The Guard Dies but never Surrenders," which the artist touched while on his death bed, but which remains still unfinished, is amongst the relics to be sold. It is a remarkably fine specimen of the painter's style, in spite of its incomplete condition, and formed a most attractive object at the Paris Salon this year.

ANNUAL MEETING OF THE FRENCH ACADEMY OF FINE ARTS.—The annual public meeting of this Academy was held a few days since, and was crowded as usual. The principal business of this meeting is the announcement of prizes awarded, and of the subjects selected for future competitions; one of the Trémont prizes, of 2,000 francs each, was awarded between MM. Mathieu and Lecomte Dunouty, painters, and the other to M. Vogel, composer of several operas, including the "Siège de Leyde," and the "Moissonneuses," performed at the Théâtre Lyrique. M. Vogel, finding little demand for great operas, produced, not long since, an opera buffa for the smallest theatre in Paris, the Folies Marigny, in the Champs Elysées, and the President expressed a hope that the prize awarded to him would enable him to surmount the difficulties which stood in his way, and give his attention to works of a higher character. The Lambert prize of 1,300 francs was given to M. P. Nauteuil, painter, to aid him in overcoming difficulties in which he had fallen, in consequence of his father's death. The Deschaumes prize of 1,500 francs, founded to aid young architects without fortune, who have relatives dependent on them, was divided between M. Marcel Boisvert, and M. Méquer. The latter artist was, at the age of twenty-six, a workman in a factory, when his arm was broken by machinery; the limb was incompletely cured, and he was compelled to seek a new occupation; he studied architecture, while getting his living by writing, and afterwards obtained employment as conductor in the department of the Ponts-et-Chaussées, and supported his mother and sister. The prix Leclère was awarded to M. Dutert, architect,

for a design for a monument commemorative of the visit of the Emperor to Algeria. The subject proposed for the same prize next year is "a monumental bridge, situated in the midst of a great city, at the point of an island, magnificently decorated, and presenting an edifice consecrated as a souvenir of a universal exhibition of industry." These terms accord exactly with the position of the Pont Neuf, which touches the point of the island of the old city of Paris, where stands the equestrian statue of Henri IV., and the rebuilding of this bridge, and of the quaint old triangular Place Dauphine, once a court quarter of the town, has long been under consideration. Seven treatises were sent in for the Bordin prize, the subject being the teaching of sculpture amongst the Greeks and modern nations, and the Academy marked its appreciation of the value of these works by multiplying the prizes; that of 2,000 francs was given to MM. Louis and René Mesnard, joint authors; a second prize of half that amount to M. Henry D'Escamp, and honourable mention to a third treatise. The subject for the Bordin prize next year, as already announced in these columns, is the effect of national circumstances, politics, morals, and religion on the *Beaux Arts*; and for 1868 the analogies and differences which appear between Greek and Roman architecture; the authors being instructed to point out, either on the evidence of facts, or by deduction, what artists and artisans contributed to the construction and decoration of the public and private edifices either of Greece or Italy, and what was the civil and social condition of such artists and artisans. The business of the meeting terminated with an historical notice, by M. Beulé, of the life and works of the late sculptor, Francisque Duret, producer of the well-known "Neapolitan Dancer," in the Luxembourg Gallery, "The Improvisatore," the statue of Rachel in Phèdre, and of many other fine works.

### Manufactures.

AGRICULTURAL MACHINERY IN AMERICA.—Mr. James Howard, in a paper on this subject, recently read before the Farmers' Club, says:—"In England, as you are all aware, an enormous demand has set in during the last twenty years for improved agricultural implements. This has mainly arisen from a more correct appreciation of the value and advantages of good machines. In America, owing to the high rate of wages and the difficulty of obtaining an adequate supply of labour, agricultural machinery calculated to save manual labour has been an absolute necessity. Without the reaping machine the crops could not be harvested, and without the thrashing machine they could not be brought to market. Hence the trade in agricultural implements has reached gigantic proportions. From inquiries I made I found that at least 100,000 reaping and mowing machines are made annually in the States. I was there during the harvest—everywhere the reaper was to be seen going; the scythe or the sickle was just as exceptional as the reaping machine was in England ten years ago. The thrashing machines were very inferior to ours, though the Americans were very apt to think they were far ahead of us, and that we were a very slow people; their machines were almost exclusively worked by horse-power. One farmer on the banks of Lake Ontario, who had ten horses yoked to his thrashing machine, seemed much surprised that in England we did all our thrashing by steam-power. He had never heard of such a thing. The implements of the farm, if we except reapers, are of very inferior design and build to our English machines. I thought one great want in American farming was good steerage drills and horse-hoes to follow. In a country where labour is so scarce and dear, the hoeing of the corn crop by animal power would be an immense boon. The drills are not made with a steerage; consequently, the drilling is bad, rendering the use of the horse-hoe im-

practicable; and, as labour is so dear, in most cases the corn and the weeds seem to be left "to grow together until the harvest." Nearly the whole of the implements are furnished with a seat for the men to ride—the idea being to get more work out of the labourers. I found the prairie farmers very desirous of having a good "gang plough," as it is called, on which the ploughman could ride. I told them if the men had easier work, it would be at the expense of the horses. As reaping machines are used, and in consequence open furrows undesirable, the land is frequently ploughed as follows:—A short ridge is set in the middle of the field, the plough passing not only up and down each side, but a furrow is taken off in going round at each end. By this means the plough is always in the ground, and the whole field ploughed without leaving an open furrow. A field may also be commenced by ploughing a furrow all round the outside, and finishing in the middle. The American farmer is not satisfied, as we are, with one team ploughing an acre per day; but expects from each team of a pair of horses two acres to two and a-half acres. I rather doubted so much being done; but was over and over assured by both masters and men that two acres and a-half were not at all an unusual day's work. The furrows, I must tell you, are over a foot wide—none of your fancy ploughing-match style. The land is also generally much lighter than our English soils, and the ploughing is, according to my notions, very much too shallow—a fault not at all uncommon on this side the Atlantic. Steam ploughs have not yet been introduced. Several attempts have been made; but as all the schemes have been with engines to travel over the surface—after Romaine's plan—no wonder they have not succeeded. On the prairies there would be no difficulty in constructing machinery capable of breaking up twenty or even twenty-five acres of such land per day, and this with only three men. Where labour is so scarce, and time such an object, the advantage of the steam plough would be immense. In Iowa I saw a very simple and efficient apparatus called a "horse pitchfork" for raising crops on to the stack, a horse simply drawing the load over a pulley. I also saw a hay-loader attached to the rear of a waggon, and which gathered up and elevated the crop on to the vehicle, thereby saving much manual labour."

IRON BEDSTEADS have been long made for use in hospitals, workhouses, and barracks; but it is not more than thirty years since the trade was fairly established, and iron and brass bedsteads began slowly to find their way into the houses of the middle and lower classes, and the less important sleeping rooms in the best houses in the country. One of the advantages which metal bedsteads possess is the facility with which they can be put together, or taken down, owing to the simplicity of the joints by which the several parts are united. It is a simple dovetail joint, and consequently requires no nut, cotter, or other loose part liable to be lost or to get out of order; and its superiority over its predecessors is attested by the fact that except in officers' bedsteads, those for lunatic asylums, and some few other special cases, it has superseded all others. At the same time that the dovetail joint was adopted, a very convenient and cheap method for making the head and foot rails of iron bedsteads was introduced. This consists of uniting the separate parts of the rails consisting of pieces of rod iron, round, oval, or any desired section, by means of castings in chills or iron moulds. From the date of the introduction of these improvements, about twenty years ago, the trade has developed rapidly. In 1849 there were not more than eight manufacturers who could be reckoned as established in the trade, and of these four or five belonged to Birmingham. Since then the number of well-known makers in that neighbourhood has increased to twenty, and the number of finished articles produced weekly from about 400 or 500 to 5,000 or 6,000. These are absorbed in nearly equal quantities by the home and foreign trades. There are a few manufacturers in London, and some very small ones, hardly worth

notice, in other large towns; but nowhere except in Birmingham and London, and hardly in London, can the manufacture be said to exist as a trade. It is carried on in various continental countries, particularly in France, Italy, and Spain. In Birmingham there are probably from 2,000 to 2,500 persons employed in the manufacture, without reckoning the subsidiary trades of tube-making, malleable iron casting, &c.; of these about half are boys, and one-sixth girls and women.

**TOBACCO MANUFACTORY AT NICE.**—This manufacture, which before the annexation was carried on in a small and unhealthy locality, now occupies a vast and handsome building, with a better ventilation than that prescribed by science for barracks and hospitals. Under the Sardinian government it gave employment to about two hundred women; now it gives occupation to seven hundred and twenty men. The average day wages, which were formerly 40 centimes, are now 1 fr. 51 cents. for women, and the men can earn about 3 frs. 56 cents. The average rate of wages for apprentices is fifty-four centimes. It is anticipated that five years hence from fourteen to fifteen hundred persons will be employed. In France there are seventeen tobacco manufactories, each of which has its own speciality; that of Nice having acquired a reputation for the superiority of its cigars, *bouts coupés* and *bouts roulés* at five centimes each.

**SERICULTURE IN SYRIA.**—The principal localities in the province of Aleppo where the mulberry is cultivated and sericulture is carried on, are the districts of Antioch, Orfar, and the neighbouring countries. The rearing of silkworms there is susceptible of a considerable development, especially in the vast plains of Hamk, situated between Aleppo, Antioch, and Alexandretta, where the land offers all the desired conditions; but the scarcity of manual labour, and the vicinity of lawless tribes, have been great obstacles up to the present time to agriculture. These districts have not been spared from disease any more than other countries where sericulture is carried on. In the towns of Arsons, Payas, and Karadach, in the district of Antioch, where the annual produce formerly amounted to about 44,100lbs. of silk, there has been a considerable reduction. Since the first appearance of the epidemic it has not entirely disappeared from any of the localities that have been smitten with it. In this country the peasants alone devote themselves to the rearing of silkworms; and it is by great efforts and labour that they have been enabled to pass through the crisis that has so desolated the country. A great number of persons have cut down their mulberry trees in order to cultivate the land, and more especially to grow cotton. Those who, possessing sufficient land not to have been reduced to this extremity, still continue to cultivate the mulberry, though always giving preference to other cultures, being persuaded that the disease once produced is transmitted from the worm to the seed (egg), have been obliged to procure healthy seed from places that are known to be exempt from the epidemic. Although their endeavours have not been always successful, it appears that last year a very healthy seed was obtained from Tchandir, a village situated near the river of the same name, a tributary of the Cestrus, about ten leagues to the north of Adalia (Satalia). This seed has been most successful everywhere it has been employed, but for the first time only. The silkworms that were hatched from it produced an unhealthy seed, and the worms from it were directly attacked by the disease, and sericulturists are obliged for the future to use exclusively the Tchandir seed, which it is necessary to import every season from Tchandir. The great demand has rapidly augmented the price, which last year was as low as five piastres (11½d.) per dram. This year it has been sold for double the price, and it is much sought after, as its yield is in the proportion 80 drams of silk to one dram of seed. Although the province of Aleppo has suffered greatly from the epidemic, it is to be hoped that by the intro-

duction of the new seed, the results of which have been most advantageous, the evil will be overcome, and that ancient prosperity will reappear.

## Commerce.

**INTERNATIONAL CURRENCY.**—By the terms of the monetary convention recently concluded between Belgium, France, Italy, and Switzerland—the four governments which have already an uniform system of weights and measures—bind themselves to the adoption of one uniform gold and silver currency throughout their states. For the complete execution of the scheme of an international currency, the copper coinage should also have been assimilated, but at present the experiment is limited to the gold and silver coinage; though, as coins of the latter denomination will be included, in value as low as 0·20 of a franc, or about 2d. of our money, the uniformity will be sufficiently general for all practical purposes. The gold coins are to be five in number, of the value of 100 francs, 50 francs, 20 francs, 10 francs, and 5 francs respectively, all of a certain weight, size, and value prescribed in the terms of the agreement. Similar rules apply also to the silver coinage, which is also to comprise five pieces, in value 5 francs, 2 francs, 1 franc, 0·50 franc, 0·20 franc respectively. Each state is to have the power to refuse all coins “whose weight shall have been reduced by wear to the extent of 0·50 per cent. below a certain fixed allowance in the case of gold, and 0·5 in silver, or where the stamped impressions shall have been effaced.” Two years only are allowed for the withdrawal of the existing circulation, and the contract is to remain in force for a period of fifteen years, when the results will be carefully investigated. It is also provided that “the right of acceding to this convention is reserved to any other state which shall accept its obligations, and which shall adopt the monetary system of the union in whatever relates to gold and silver specie.” The *Produce Markets' Review* observes that this movement in the direction of uniformity, initiated at present by only four of the European governments, is one that, like our free-trade system, or railway communication, or the employment of steam-vessels, or any other ideas of a similar character, originating in the mental activity of the present century, will surely make its way sooner or later amongst all nations which would not behind the age in which we live. The question of an international currency is, in fact, a question of the adoption or rejection of the decimal system, and though there is much that can be urged in defence of other systems, the superior merit of convenience, facility, and correctness in making calculations, must surely outweigh any advantages that may result from the fact that a given number admits of being subdivided into a greater number of divisors. The number 10, for instance, has but two divisors, 2 and 5, whilst 12 can boast of having twice as many—2, 3, 4, and 6. It is not to be denied that there are advantages to be found in existing systems of calculation, but the decimal system alone insures us a rapid and infallible method of performing the arithmetical calculations most in use, whilst it enables us entirely to dispense with others. Those who are practically conversant with the details of work performed in any large counting-house, know by experience the amount of labour and time required for “casting out,” as it is technically termed. It is within limits if we estimate the saving of labour in calculation that might be effected in this direction by the adoption of the decimal or metric system of coinage, weights, and measures, at about 25 per cent.; that is to say, where a man now employs one hundred clerks he might do the work with seventy-five.

**COMMERCE AND INDUSTRY OF TCHÉFOU.**—Tchéfou is situated most favourably for commerce. The French have established there a naval station, and a store of coal procured from Northern China. The British navy



also possesses an island situated in the bay that serves as depôt and hospital. Ships of war of both nations constantly anchor there. Tchefou is the nearest port to Pekin, and is at no time of the year blocked up by ice. From this place during the winter, at the arrival of each mail, the couriers of the embassies and commercial correspondents leave for Pekin and Tientsin. Should the progress of European influence one day induce the Chinese Government to establish free trade, it cannot be doubted but that Tchefou will become a free port open to all kinds of merchandise, and also the great entrepot of European commerce in Northern China. The silk-growing districts bordering on this town are as yet all but unexplored, and in no case have been cultivated. They contain, however, for the regeneration of the exhausted races of the silkworm, resources that might be very valuable if they knew how to turn it to account. The wooded mountains of the environs feed, in fact, a species of wild silkworm that spins a brown silk, the quantity of which might be brought to market would not amount to less than 12,000 bales yearly. The quality of these silks varies according to the various modes employed for the winding, and the care used in this operation. The fabric which is made of it is called in the country *pongee*, and 100,000 pieces of it might be purchased annually. The province of Tchefou also furnishes a large quantity of fine yellow silk. In 1861 and 1862 a thousand bales of this silk were exported; but since a very small quantity of it has been sent in the market, being exclusively employed by the silkweavers of the country for the manufacture of fabrics for local consumption. Formerly, the greater portion of the silk fabrics worn in the north came from Foochoo and other manufacturing towns in the south. This trade has ceased since the devastations of the southern provinces from rebellions, and at present the value of silks imported to Tchefou only amounts to about 1,200,000 francs, or £48,000 annually. The silk trade can only attain some importance in this port by the necessity of the interchange of products of the soil for European goods.

**MERCHANT NAVY OF NORWAY, SWEDEN, AND DENMARK.**—In 1864 the merchant navy of Sweden was composed of 3,198 vessels, the total tonnage of which amounted to 381,162; and the number of Norwegian ships, according to the returns of 1865, amounted to 5,407, of a total tonnage of 1,058,847. The figures show that the total number of vessels of the United Kingdom of Sweden and Norway amount to 8,605, and represent a tonnage of 1,440,009, and give employment to about 48,300 seamen. An increase of 570 vessels, the total tonnage of which amounts to 5,990, has taken place in the merchant shipping of Denmark within the last two years, which formerly was composed of 3,079 vessels, of the total tonnage of 74,140, now numbers 3,649 vessels, with a total tonnage of 80,130; this shows an increase of 8 per cent.

**THE TRADE OF OSTEND.**—The last vessels employed for the cod fishery have now returned to Ostend, and the last sales of this fish have been effected. This year 13,683 tons of cod-fish have been taken by the Ostend fishermen, of which 13,137 tons is Doggerbank cod, and 546 tons from Rockall and the Feroë Islands. This shows an increase of 871 tons on the take of last year, which amounted to 12,712 tons. The quality is excellent, and finds a ready sale. The number of vessels employed in this fishery was exactly the same as that of last year, namely, 156; and the Ostend fishermen still continue to go to Doggerbank in preference to any other spot. The oyster trade has not made any decided improvement on that of last year, although there has been an important reduction in prices. The oyster merchants of Ostend are now bound, by an agreement amongst themselves, to keep up the prices of oysters, and this is partly owing to the general thinning of the beds. This price, however, is considerably below that of 1865. Lobsters are likewise an article of an important trade; they are usually

imported from Norway, and are sold at from one to six francs each, according to their size, or whether alive or dead.

**IMPORTS AND EXPORTS.**—The value of the goods imported into the United Kingdom in 1865 amounted to upwards of £271,000,000; and that of the exports, of British produce and manufacture, to nearly £166,000,000 sterling. Twenty-five per cent. of all our import and export trade arises out of commerce with the eastern countries—India, China, Egypt, Japan, and Australia.

**CUSTOMS.**—The annual Customs' report for 1865 shows a satisfactory result as regards the commerce of the port of London. In all departments of trade there is an increase, which is most marked in the case of tea, as the tendency exists to concentrate such cargoes in the port of London. The quantity of tea entered here for home consumption amounted, in 1865, to no less than 61,000,000lbs., which produced 62½ per cent. of the whole duty collected in the United Kingdom.

**COAL EXPORTS.**—The exports of coal in the nine months ending September were 7,586,500 tons, against 6,938,213 tons and 6,615,915 tons for the corresponding periods of 1865 and 1864. The shipments have increased more or less considerably this year to Russia, Sweden, Denmark, the Hanse Towns, Spain, Italy, Brazil, and British India; but they have decreased to Prussia, Holland, and the United States.

**THE BAMBOO**, which grows abundantly in most of the West India Islands, has been for some time past largely exported from Jamaica to New York in bales and bundles for the purpose of being manufactured into paper, and has been proved equally as valuable as rags.

## Colonies.

**TEA CULTIVATION IN AUSTRALIA.**—The following is from the *South Australian Register*:—"The idea that the China Tea-tree is a delicate plant, and that its success in a climate like this is impossible, will probably turn out to be a great fallacy, if the matter is fairly tested. We are therefore glad to see that the Government have purchased £50 worth of seed, and that a portion of it is to be carefully sown in the Botanic Garden, whilst the remainder is to be distributed throughout the colony, so as to try a variety of situations and soils. From a great deal of information on the subject, which we have obtained from Dr. Schomburgh, it appears that the China Tea-plant may be easily acclimatised in South Australia, for it is a plant which successfully resists drought, frosts, and other severe atmospheric changes. What is particularly important to us is, that so far from a large quantity of moisture being required, it is, in fact, injurious to the plant; and therefore in Asia its cultivation on a large scale is pursued chiefly on the tops and slopes of hills, where good natural drainage is secured; but it flourishes equally well in the soil of plains, where the water does not lodge so as to form puddles about the roots of the trees. As to the soil required, the best is vegetable mould, largely mixed with sand; but it also grows well in many other soils. It takes good hold of the ground, and flourishes in those spots where a thin stratum of earth overlies metamorphic slates, intersected by trap rock, or where the subsoil consists of stony fragments or packed boulders of coarse granite. As to the mode of preparing the ground, sowing the seed, and treating the young plants, we will proceed to give our readers all particulars, as supplied by Mr. Sterndale, who is practically acquainted with the subject, to Dr. Schomburgh. That gentleman says it matters not whether the land for a tea plantation be flat or highly inclined, provided that the soil be suitable and sufficiently drained; but on no account should the land be liable to be flooded or swamped during the rains. Manuring or irrigation are quite unnecessary, unless when applied to weakly seedling plants under the age of twelve months. That the plant is excessively

hardy has been proved by experiment at various altitudes, from 200 to 10,000 feet above the sea level, at which last great height it is found wild in the forests in the form of a hard wood tree, of a height of 25 ft. by 1 ft. diameter, of which the extreme age is unknown. These trees are exposed to storms, snowfall, and frosts, which congeal the streams to the thickness of several inches of ice, while in other localities they are occasionally subjected to hot winds and long drought, under which cereal crops perish for lack of moisture. The general practice in preparing the land is by the ordinary system of ploughing, unless in rocky or precipitous places, where the ground is loosened with a pickaxe to the depth of one foot, for the reception of each seed or plant, the intervening spaces being left undisturbed. Tea plants in Asia flower from about the middle of August to that of February, and the seeds ripen in about thirteen months. All the plants do not come into flower at once, but some are in flower in September, others in November, December, or January. Many throw out a second set of flowers in March, April, May, and during the winter; so that from the same plant unripe and ripe seeds and flowers may be gathered at one and the same time. The first year the number of plants varies from one to seven. The seeds are contained in a capsule. To ascertain when they are ripe, open the capsule, though green, and if their colour is a nut-brown they are ripe; if not ripe, they are of a reddish colour mixed with white. If the seeds are allowed to remain on the bushes a short time after they are ripe, the capsules burst and they fall out. It is necessary, therefore, to remove them. The plants are usually placed at five feet distance from each other, which takes about six pounds of seed to the acre. If the seed be fresh, the general practice is to plant it out at once in the spots where it is intended to permanently remain. This is done by digging a hole, with a pickaxe or mattock, one foot deep, filling it with the loosened earth, and sticking the seed about three inches below the surface. In cases of experiment with inferior seed, or upon untried land, it is most advisable to plant in nursery beds, about six feet in width, into which the seeds are dibbled or drilled at two or more inches apart from each other. The most suitable season for this operation is the commencement of the winter rains, as the moisture materially assists their germination. Some will germinate in four or six weeks, but many will lie dormant for four months, and in most cases none will grow until the advent of the rains. Young small seedling plants stand extreme cold badly; if, therefore, they germinate at such a time, they ought, in a new climate, to have a top dressing of manure, and to be protected by branches or grass, which, when the sun shines, should be removed, to give them the advantage of his beams. In this manner small plants may become fit for removal in two months. As soon as the young plants are three inches high they ought to be weeded, for if weeds are allowed to remain they draw them up, and thus make the plants thin and weakly. It matters not though the weeder, in removing weeds, disturbs seed germinating, as they can easily be put in the ground again. Moreover, the advantage given to the young plant, by opening up the soil around them is great, and more than compensates for the injury done. Plants are sometimes raised from layers and cuttings. The most favourable seasons for these operations is when the sap is beginning to rise and in full action, as during the rains. Seedling plants ought not to be transplanted until eight inches high, and in planting them on the slopes of steep hills care should be taken to place them horizontal to the dip of the land, as the earth is not so liable to be washed away from the roots by the heavy rains. Tea leaves ought not to be gathered until the third year, and then during the rains, in order to allow the bushes to attain a considerable size. If the plants send out long leading shoots in the second year, these

ought to be nipped off in order to induce the plant to thrown out lateral shoots, and become of a thick and bushy form, yielding abundance of leaves. Tea leaves are gathered during the rains, the number of pluckings of each plant being four, and in very wet seasons five, with an interval of from four to six weeks between each. Each plant will yield in the third season about half a pound of raw leaves, or two ounces of manufactured tea of a superior quality, giving an average of about 80 lbs. to the acre. Two years more will increase the yield tenfold, being  $1\frac{3}{4}$  lbs. of manufactured tea to the plant. The process of gathering the leaves is extremely simple, and is chiefly performed by women and children. All old and fibrous leaves are left upon the tree. The young leaves are stripped off with the hand, an inch or so of the soft and succulent stalk being taken with them. The finest kind of black tea (Pekoe) is prepared from the tender buds at the extremity of the twigs, and for this purpose is kept apart from the rest. From the remainder are manufactured the more common kinds, viz.:—Souchong, Pouchong, Congou, Bohea, Young Hyson, Hyson, Gunpowder, Imperial Gunpowder, &c. A woman accustomed to the work will gather in a day from 16 lbs. to 20 lbs. of raw leaves. The proper time for sowing the seed in this colony (South Australia) is from June to August—the present is therefore a favourable opportunity for commencing."

**PRESERVED MEAT.**—Under date October 27th, the *Melbourne Argus*, an Australian journal of great repute, refers to the operation of a new company on the Clarence River, for preserving meat and making extract of meat after Liebig's plan. The preserving is after the usual English process, but with the great advantage of its being performed where meat is rarely over  $1\frac{1}{2}$ d. per lb., and where, therefore, the picked joints are alone packed. The herds of Australia have the advantage of being derived from English cattle, and are only second to them in excellence. The preserved meat is of course principally intended for ship use, and a considerable portion will be sold in the colonies. The extract of meat will probably come to this country, and an opportunity of comparison will be afforded between that which is made of the wild cattle in South America, such as is now being largely sold in England, and the extract made of the progeny of our own English bulls. The *Melbourne Argus* states that the operations of the company are likely to be very extensive.

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### Publications Issued.

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**A HISTORY OF BANKS FOR SAVINGS IN GREAT BRITAIN AND IRELAND.** By William Lewins, author of "Her Majesty's Mails." (*Sampson Low.*)—This work gives an accurate account of the early history of savings' banks, and deals fully with their parliamentary history. With respect to the latest modification of the savings' bank principle as exhibited in the measures brought about within the last few years by Mr. Gladstone (to whom the work is, by permission, dedicated), the author's endeavour has evidently been to treat all the questions involved fully and impartially, and great pains has been taken to secure perfect accuracy both as to facts and figures. In reference to by far the most important measure relating to this subject, namely, the establishment of Post-Office Savings' Banks, the following extracts will not be without interest:—"Much that remains to be told of savings' bank reforms, and of other proposals to supplement the system by fresh provisions, may be told in connexion with the life of a gentleman to whom reference has already been made. Amongst those who have devoted much time and immense labour to bring about a better state of things in savings' banks, the foremost place is undoubtedly due to Mr. Charles William Sikes, of Huddersfield. Mr. Sikes, the son of a private banker of



that town, was born in 1818. We will pass over his early years, only remarking that he received a commercial education, and, in 1833, entered the employ of the Huddersfield Banking Company, the third or fourth joint-stock bank established in this country. It was while Mr. Sikes was cashier of this bank,—which, like other private banks, received deposits above £10, and allowed interest at the current rate,—that his attention was arrested to the question of banks for the people. He witnessed a considerable number of instances of workmen who, beginning with a few pounds, had silently amassed what was to them a little fortune of one, two, and even three hundred pounds; and he became deeply impressed, as he himself informs us, not only with the idea that the number of these provident working people was far less than it ought to be or might be, but that the social and domestic results for good that would ensue would be absolutely incalculable, if bank depositors among the working classes became the rule instead of the rare exception. About this time—the era of the free trade agitation—there was great distress in the manufacturing districts, and Huddersfield, like the rest of the West Riding towns was heavily visited. . . . Mr. Sikes tells us that he had already begun to feel, that though much might be done for the working classes by kindly and temperate advice, the greatest share of the work of their social elevation would have to be achieved by their own individual efforts; he came to the conclusion that his work might well lay in endeavouring to stimulate the poor to more provident habits; and that, if there was anything in the constitution of such societies as were formed expressly to foster these habits which stood in the way of the poor man, the obstacles ought either to be quickly removed, or some new organization must be planned to effect this purpose. With this end in view, Mr. Sikes addressed a long letter to the editor of the *Leeds Mercury*, in 1850, which was subsequently republished in the form of a pamphlet, and widely circulated, recommending the formation of what he called ‘preliminary savings’ banks.’” The author then gives an account of the successive steps which Mr. Sikes took to accomplish the objects he had in view. In 1854 he appears to have published a pamphlet, entitled “Good Times; or, the Savings’ Bank and the Fireside;” an admirable little annual for the class for which it was written, and which obtained a large sale. For some time, however, he appeared to have “carefully abstained,” says the author, “from saying anything that would tend to lessen the influence or usefulness of the existing savings’ banks; but in the year 1855 the time would appear to have arrived when it became necessary to attempt some reforms in their constitution and management.” In 1856 he addressed an exhaustive letter to the Chancellor of the Exchequer, the late Sir G. Cornewall Lewis, on “Savings’ Bank Reforms.” Mr. Sikes deserves the credit of having been the first to point out the inherent defects in all parts of the savings’ bank system, and the first to suggest an entirely fresh form of management. Everything that an ingenious marshalling of figures, an array of argument, and even eloquence could do, Mr. Sikes did, but all appears to have been equally unavailing. The Chancellor of the Exchequer made attempts, as we have before seen, in the House of Commons, to improve the organisation of savings’ banks, but without success. When the Committee on Savings’ Banks was appointed, in 1858, Mr. Sikes was called as a witness. He again described the plans which he had suggested in 1856, and which had undergone little or no modification since that time. The author proceeds as follows:—“Confining ourselves at present to the origination of the principle of Post-office Banks, without reference to the wonderfully simple and efficacious scheme afterwards organised, we find that several different gentlemen had between the years 1850 and 1860, and acting entirely unknown to each other, matured plans, and in one way or another actually proposed them, to remedy

the deficiencies of the existing banks, on some such principle as that eventually adopted. To Mr. Sikes belongs the undoubted merit and honour of having independently originated and matured a plan of operation more or less equal to the object in view; of having persevered in the object of bringing the matter prominently before the public; and of being so fortunate as to have proposed his scheme at a period when the country possessed in Mr. Gladstone a statesman of extraordinary versatility and power at the head of its financial operations, and who had given abundant evidence of his willingness to grapple with uncommon difficulties where a need is proved and the principles of a measure are shown to be sound. Having matured his plan in June, 1859, Mr. Sikes communicated it to Mr. Edward Baines, the member for Leeds, in the form of a printed letter; and this gentleman, well known for his wide sympathy with the industrious classes, after studying its details, expressed his warm approval of the project, and engaged to bring it under the notice of Sir (then Mr.) Rowland Hill, the secretary of the Post Office. That there was now no indisposition—if ever there was—on the part of the authorities to such a measure is evident from the reception it met with at their hands, as shown by the letter below.\* Encouraged to persevere, Mr. Baines and Mr. Sikes had an interview with the secretary and some of the principal heads of the departments of the Post Office, when the draft of a plan was read to them for working such a measure. The next step which Mr. Sikes took was to place himself in communication with the Chancellor of the Exchequer, Mr. Gladstone, and he was met by a cordial acknowledgment. The letter, in which the scheme was explained, was then given to the public, and was read before the Social Science Association which met in Bradford in the autumn of that year, Lord Brougham having also mentioned the matter in his inaugural address. Several Liberal newspapers went warmly into an advocacy of the principles of the measure, if not of the measure itself; and in the early part of November, 1859, the members of the Huddersfield Chamber of Commerce strengthened the hands of their townsman by passing, an unanimous sentence of commendation upon it; and not only so, but they resolved to send Mr. Sikes’s pamphlet to all the Chambers of Commerce in the kingdom, recommending them to support the plan, which several of them eventually did. During the interval, Mr. Gladstone had amply fulfilled his promise to give the subject his best attention. . . . The scheme may be said to have now soon passed out of Mr. Sikes’s hands, and to have fallen into those of others, who saw that it would be necessary largely to remodel it, in order to make it fit into the machinery (of the working of which Mr. Sikes was necessarily ignorant) upon which it would have to be engrafted. On the 16th September, 1861, the Post Office commenced business with 301 offices as Savings’ Banks, gradually increasing the number until in March, 1866, there were 3,369 Post Office Savings’ Banks in the United Kingdom, of which 452 are in the metropolis, and in December last there were 611,819 open accounts, the amount accumulated being £6,526,400—an average of £10 13s. 4d. each depositor.”

HANDY BOOK OF RULES AND TABLES FOR VERIFYING DATES. By John J. Bond, Assistant-Keeper of the Public Records. (*Bell and Daldy*.)—No book of any importance on this subject has been published since that

\* Mr. Rowland Hill to Mr. Baines, M.P., 2nd August, 1859.—My dear Sir,—With modifications which could readily be introduced, Mr. Sikes’s plan is, in my opinion, practicable so far as the Post Office is concerned. The plan also appears to me to be practicable in its other parts; but on these I would suggest the expediency of taking the opinion of some one thoroughly conversant with ordinary banking business, and who is acquainted also with savings’ banks. I need not add, that if carried into effect, the plan would in my opinion prove highly useful to the public, and in some degree advantageous to the revenue. I should be most happy, when the time arrives for doing so, to submit it for the approval of the Postmaster-General.—Faithfully yours, ROWLAND HILL.

by Sir Harris Nicholas, based mainly on the French work entitled "L'Art de Verifier les Dates." The present work is the result of twenty years' experience in dealing with the chronology of public records and ancient documents, and sets forth, in a very lucid manner, the importance of a thorough comprehension of the changes of style in writing dates, especially in connection with legal and other documents. In the introductory preface, Mr. Bond illustrates this by quoting some instances where the change of style has been overlooked by historians and others. One of these, taken from M. Guizot's "History of Oliver Cromwell and the English Commonwealth," is as follows:—"Anne of Austria and Cardinal Mazarin thought it fitting that the young King of France should make some effort to save the life of the King (Charles I.) his uncle, and Louis XIV. accordingly wrote two solemn letters to Cromwell and Fairfax; but before M. de Varennes, who was appointed to deliver them, had left Paris, Charles I. was executed." These two letters are dated "Saint Germain, 2 Fevrier, 1649," corresponding in fact with the 23rd of January, 1648-9 in England; and as the king was executed on the 30th January, 1648-9 (according to the English computation), in all probability there was time for the messenger to have arrived in London between the 23rd and 30th of January. That the alteration from the Julian, or old style, to the Gregorian, or new style, was not made in England until the year 1752, is a fact which has evidently been overlooked. When the adoption of the Gregorian, or new style, into Great Britain was decided upon, a Bill (24 George II. 1751, cap. 23), which Mr. Bond quotes at length in his preface, was passed, and excited general unpopularity. Hogarth, in his painting called "The Election Dinner," has introduced a placard, illustrative of the feeling prevalent amongst the majority of the people, bearing the words, "Give us back our eleven days." To notice in detail each portion of the book would occupy more space than is at disposal; it may, therefore, suffice to state that the more important features are, the information relating to the time of the adoption of the new style in various countries and states; the concise and excellent tables for finding Easter Day; the tables of regnal years; the French revolutionary calendar, and comparative tables of dates and days of the English calendar and the revolutionary calendar, and the perpetual calendar, which has been noticed already in this *Journal*. As a specimen of typography, the book reflects the greatest credit on Messrs. Whittingham and Wilkins. From the foregoing remarks it will be seen that the work is invaluable to persons engaged in the law and literary pursuits, and affords an amount of information interesting to the general reader.

### Notes.

**CHIMNEY SWEEPING.**—It is stated that our present system, in which the machine heads or brushes are formed of woody fibre, is very imperfect for thoroughly cleansing the chimneys, especially in removing the hard lumps of soot which accumulates in them. A new brush has been invented, in which the woody fibre of the brush or head is replaced by steel. The brush itself is a hollow tube of iron, on to which is loosely put four box wood collars about half an inch thick, each having a circular groove in it, for the insertion of numerous finely-tempered steel bars, which radiate from the centre of each collar; the four being firmly bolted together by suitable brass work; this forms an elastic brush, closely resembling those in common use, but with this essential difference, the steel bars, being very elastic, penetrate the whole and every part of the aperture of the chimney in their ascent, no matter how awkwardly built, and allow the light soot to fall through them, and do not put it on the roof; and in their descent thoroughly remove all the hard, so that

there is none left in the chimney to take fire. The inventor, Mr. Thomas Welton, urges this as a manifest advantage over the usual machine; and, in addition, enumerates the following advantages:—It will promptly extinguish a fire in the chimney without damage to the brush. It will core a new chimney without climbing. It can be easily taken to pieces and repaired at a trifling expense by almost any person. It can have a ball and chain attached, so that it may be used from the roof. It fits the brass joints and canes at present in use. It will in many cases cheaply cure a smoky chimney by simply keeping it clean. It will at once, by its use, arrest the accumulation of the hard, tarry masses of soot in kitchen chimneys, builders' workshops, and other buildings where wood, refuse of vegetables, spillings of fat, bones, cuttings of leather, and bituminous coal are burned.

**CANADIAN RAILWAYS AND TELEGRAPHS.**—The government return for the year 1865 shows that there were in that year 2,148 miles of railway in Canada open for traffic. Their cost has been 121,543,189 dols. The receipts for 1865 amounted to 10,910,678 dols. The total working expenditure was 5,778,343 dols. Renewals cost 1,355,759 dols. The Grand Trunk line, 1,377 miles in length, had 38 deaths by accident in the year; the Great Western, with 345 miles, 15; the Northern, with 97 miles, 5. There are three telegraph companies at work in Canada—the Montreal, the Provincial, and an American company, the Vermont and Boston, which has 43 miles of telegraph line in Canada. The total length of the lines in 1865 was 4,978 miles; the number of messages sent 479,331.

**NITRO-GLYCERINE FOR BLASTING.**—Some interesting experiments have lately been made in the canton of Neufchatel with nitro-glycerine, in order to detach some large blocks of rock on the right bank of the Areuse, for the purpose of constructing a dam across the river, to prevent the materials occasioned by landslips being carried down by the floods. The first hole was drilled half-way up the side of the mass of rocks facing the river, 21 feet in depth and two inches in diameter, and was charged with only six pounds of nitro-glycerine; the block of rock that was detached was about 300 cubic metres. A great part of the *debris* fell into the river.

**OLDEST NEWSPAPER IN EUROPE.**—At Ghent (Belgium) there is a Flemish newspaper published, the *Gazette van Gend*, which, perhaps the oldest in Europe, will have been in existence for the last two centuries on the 1st January, 1867. As a souvenir of this anniversary the subscribers are to receive a copy of the oldest number at present in existence. It bears the date of 8th September, 1667. The copies, which have been made by means of photography, have succeeded so well, that it is difficult to distinguish the copy from the original.

**JOINERS' WORK.**—An importation of joiners' work has lately been made into this country from Stockholm, consisting of panelled doors, jamb-linings, architraves and skirtings, machine-made and well put together, of excellent workmanship and of first-rate material. They are made to English sizes, and have been offered for sale at prices considerably below those which are given for English work and material of the same quality. It is understood that the machines which have been employed in making them are of English manufacture, imported into Sweden.

**PARIS EXHIBITION OF 1867.**—It appears that the Emperor has asked the King of Prussia to send one of his model schools to the Exhibition; accordingly, not only will there be the *fac-simile* of a Prussian village school, but the master's house and the playground. The school-room will contain the books, maps, copy-books, &c., in present use in every Government school of that kingdom, besides specimens of essays, extracts, &c., actually done by Prussian school children. Those who take an interest in popular education will be able to judge of the advances of instruction in that kingdom.

POPULATION OF PARIS.—The number of inhabitants at the present time in Paris is 1,825,274. The census made at different times give the following numbers:—

	Inhabitants.
In 1292 .....	215,861
1553 .....	260,000
1718 .....	509,000
1755 .....	576,000
1784 .....	660,000
1800 .....	547,756
1817 .....	713,966
1841 .....	935,261
1846 .....	1,053,897
1851 .....	1,053,262
1861 .....	1,696,131

As to the number of houses in Paris, the author of *Paris, Ancien et Nouveau*, reckons in 1685, 23,223 houses facing the street, not counting those in courts or gardens. Sauval, in 1733, gives 25,000 houses in round numbers. Germain Brice, in his *Description de Paris*, only gives 22,000 in 1752. M. Husson, in his book the *Consommations de Paris*, remarks on the inaccuracy of Sauval, who gave the number of houses in Paris as 25,000, nineteen years previous to Germain Brice, who gave 22,000 only. The *Miroir de l'ancien et du nouveau Paris*, published in 1807, gives 30,000 houses. In 1812, the *Dictionnaire des Rues de Paris*, by La Tynna, reckons 29,400; this is evidently an exaggeration, as by the official census taken in 1817, there were only 26,801; in 1841, 28,699; in 1846, 30,221; in 1851, 30,770; and in 1855, 31,650.

EXHIBITION AT PERNAMBUCO.—The Exhibition at Pernambuco, that was held during the month of October, was closed on the 20th of that month, as the articles, selected by a special commission to be sent to the Paris Exhibition, had to be first sent to the Exhibition at Rio Janeiro, where a fresh selection will be made, to decide which are to be sent to France. As there is but little manufacturing industry at Pernambuco, the articles exhibited were but few, and of little interest. The natural products, on the contrary, were numerous and important. Without mentioning cotton, coffee, and sugar, of which there were magnificent samples, there was a fine collection of woods, textile plants, flour prepared from the banana, arrowroot; a kind of vegetable fibre, admirably adapted for the manufacture of ships' cables, being indestructible by sea water; a clay of a whiteness and unexceptionable purity, suitable for the manufacture of porcelain; the carnauba, a material from which candles of a tolerably good quality are made, and which is also used by sculptors and medal engravers, on account of its plastic qualities and charming yellowish-brown tint; a considerable quantity of well-known medicinal plants, the greater part of which are extensively used in Europe. The collection of woods alone well repaid a visit, amongst which the *Secupira* is especially worthy of note, as being well adapted for indestructible railway sleepers, a specimen having been kept under water for eight years, and being as sound as when first cut from the tree. Amongst the vegetable tissues, those of macaiba, of tucum, of canapixo, and of banana; the first, especially, are of an extreme fineness, and, at the same time, of great resistance; a fishing-net made of macaiba thread would last a great deal longer than one of common twine, and it is evident that very beautiful and solid fabrics might be manufactured from it.

**Correspondence.**

INDIAN ARCHITECTURE.—SIR,—I should have been very glad to make a few observations on Mr. Fergusson's paper, had I not feared to protract the discussion. From the time that Mr. Fergusson first brought forward the subject of Indian architecture, I have always

felt that it is one of great importance in relation to the promotion of art. It illustrates the catholicity of art, and being, as Mr. Fergusson says, free from our own conventional associations, it enables us to study principles without prejudice, and more particularly to ascertain the characteristics of beauty. Beauty is assuredly no recognisable feature in the architecture of India. As to the indispensable connection of fitness and utility with beauty in Indian and other architecture, I am less confident. Forms and details in Indian architecture have no necessary relation to utility, whether they are beautiful or otherwise. Mr. Fergusson is justified in including in his scope Mussulman architecture, for the reasons he has stated, and I can confirm some details. The Mussulman system is not an abolition of previous systems, but a continuation of them. Hence, in religious theories and practices, in jurisprudence and in administration, in poetry, in architecture, and in numismatics, we trace the influence of preceding nations and of the localities in which the new worship is introduced. Hence the necessary distinctiveness of style in Egypt, Spain, Persia, and Turkey. In Turkey, as he says, some buildings for Mussulman worship are simply conversions of Byzantine edifices; others are based on them; Greek architects were in the first instance employed, and now, in many cases, Armenian architects and artists. These architects and artists, whether Mussulman or rajah, are of the class described by Mr. Fergusson—they read little, they draw little—but they study nature, and employ experience and common-sense; and their expedients, handed down from ages and consecrated by experience, are well deserving of attention. It is thus that schools of art are maintained now as in the middle ages—in some cases by the practitioners of the arts, in some cases by monastic institutions, as by members of the bodies of dervishes. All these considerations bear upon the ethnographic value of architecture. This, with other circumstances, was well developed by Mr. Fergusson in his uncompleted works on the philosophy of art, and especially of architecture; and it illustrates the principles upon which architecture and art generally are to be studied. It must be, as he has shown, by observance of the general connection of all art and knowledge on one basis of the unity of science and truth. We shall elevate architecture by bringing it into closer communion with the great body of science, and by bringing to bear upon it the resources and appliances of the world of knowledge. Architecture is, undoubtedly, a great instrument for ethnography, neither more nor less so than philology, but under the same conditions, and this leads me to endeavour to define more forcibly than Mr. Fergusson did, the ethnographic value of architecture. We need no more expect from architecture than from language the functions of precisely determining the race of a people. Architecture, like language, is communicated wholly or partially. Greek architecture or Greek language may be used by an alien people, but we have two results—first, the historical incident of the communication of this Greek element; and, second, its modification by the people to whom communicated. Architecture resembles in its functions the literary functions of language. Just as technical words of Greek or Arabic are communicated to other languages, so are the elements of art; and wherever we find distinctions in this respect we must look for ethnographic differences in the source or origin, in the races to which communicated, or perhaps for both together. This suggests itself with regard to the Hellenic and Ionic art. Hellenic art may have resulted from the adaptations of Egyptian forms by an Hellenic people—Ionic, from the adaptations of Assyrian germs by a people of Asiatic constitution. Whether as regards the past or the present, Indian architecture merits study. For the past it enlists the scholar; for the present, as being a living school of architecture and art, it calls upon the practical man to study and apply its principles.

Until we succeed in creating in England a living school of art, we shall still, as we do now, halt short of a satisfactory result, with all the labour and all the effort we have applied.—Yours, &c., HYDE CLARKE.

**STORM SIGNALS.**—SIR,—I have learnt with much regret the recent decision of the Board of Trade on storm signals, and think their circular should not pass altogether without remark. Admiral Fitzroy was a man who spent a lifetime in the study of meteorology as applied to weather prognostics; and towards the close of his life established a method of signalling on the coast the approach of storms, with a view to caution our seafaring population against approaching danger. The thing is organised, signals erected, the people to a certain extent used to them, and it seems a pity that all he has done should now be abolished; it seems a slur upon the memory of a man who has doubtless done much good in calling the attention of the people to the great use of the barometer as a weather-glass. Might not the signals be under the care of the local government, and the rules for using them given by the Board of Trade or some scientific body? We are told, in answer to that query, that these warnings are founded on rules mainly empirical, and, therefore, should not be issued under the superintendence of a scientific body. Admiral Fitzroy says, in his report published in May, 1864, "That we have proved experimentally how winds and weather may be foretold with general accuracy for two days, at least, in advance, our reports since, 1861 have shown." Now, if I were told that such prophecies were "founded on rules mainly empirical," I should say, no doubt of it; the Admiral certainly very much overshot the mark there; but with storm warnings the case is different altogether. By the barometer we have never-failing indications of great storms, and it is only great storms that the sailor fears; moreover, as it would be necessary to lay down certain definite rules for the guidance of those in charge of storm signals, I would suggest that it should be an instruction to them to hoist a signal "Caution," whenever the barometer is below 30 inches, and falls at the rate of three hundredths per hour; and one of "Danger" whenever it falls at the rate of five hundredths per hour; and that the reasons why these signals are hoisted should be published. As I think that Admiral Fitzroy's judicious efforts to save life should not be altogether set aside, I would suggest to those in authority that this proposition should receive their consideration, feeling satisfied that it is altogether free from the charge of empiricism.—I am, &c., ROBT. H. C. WILSON.

12, Wilson-street, Gray's-inn-road.

#### MEETINGS FOR THE ENSUING WEEK.

- TUES. ...Pathological, 8. Annual Meeting.  
 Anthropological, 3. Annual Meeting.  
 Geologists' Assoc., 7½. Annual Meeting.  
 Royal Inst., 3. Professor Frankland, "On the Chemistry of Gases." (Juvenile lectures.)
- WED ...Pharmaceutical, 8.  
 Obstetrical, 8.
- THUR ...Royal Inst., 3. Professor Frankland, "On the Chemistry of Gases." (Juvenile lectures.)
- SAT. ...Royal Inst., 3. Professor Frankland, "On the Chemistry of Gases." (Juvenile lectures.)

### Patents.

From Commissioners of Patents' Journal, December 21st.

#### GRANTS OF PROVISIONAL PROTECTION.

- Air, measuring the temperature of—3101—C. Wood.  
 Armour plating—3033—J. H. A. Gruson.  
 Artificial incubators—3057—J. Brindley.  
 Beer casks, tapping—3073—W. R. Lake.  
 Bench vices—3174—B. J. B. Mills.  
 Bleaching—3091—C. D. J. Seitz.

- Bottles, washing—2573—W. E. Hickling.  
 Breech-loading ordnance—3049—J. H. A. Gruson.  
 Bricks—3203—J. Toward.  
 Brushes, cylinder—2761—J. P. Debauche.  
 Brushes—3154—H. P. Truefit.  
 Cardboard—3127—G. Backhouse.  
 Cast steel railway wheels—3123—A. V. Newton.  
 Chain cable holders—3171—W. H. Harfield.  
 Clocks—3023—W. E. Gedge.  
 Composition rollers—2955—G. F. Freeman.  
 Compound steam engines—3158—J. Ramsbottom.  
 Cooking apparatus—3156—J. Webster.  
 Corkscrews—3162—H. Bateman.  
 Cotton seeds for decortication, preparing—3021—F. H. Gossage.  
 Elastic seats—3135—G. Howard.  
 Electric telegraph wires, insulating—3192—W. A. Marshall.  
 Fibre, combing—3037—T. Whitley.  
 Fibrous substances, carding—3121—L. Law.  
 Fibrous substances, spinning—3119—J. Kerfoot.  
 Fibrous substances, twisting—3069—J. Berry, J. B. Turner, and C. Vickerman.  
 Floors, coverings for—3053—J. Tasker.  
 Fuel, economising—3031—J. Robinson.  
 Furnaces—2259—D. Caddick.  
 Furniture springs—3129—H. Timmins.  
 Grain, cleaning, &c.—3061—P. G. B. Westmacott.  
 Gun carriages—3035—J. H. A. Gruson.  
 Heavy bodies, raising—3371—J. H. Johnson.  
 Horse hoes—3150—W. W. Pilcher.  
 Iron into steel, converting—3111—T. J. Barron.  
 Leather, uniting—3099—C. H. Southall, R. Heap, and J. Tasker.  
 Magnetic engines—3039—J. Baker.  
 Minerals, cutting—3063—P. Gledhill.  
 Motive power—3125—R. George.  
 Motive-power engines—3029—J. Bernard.  
 Mowing machines—3107—J. E. Boyd.  
 Nails—2969—A. Scholey.  
 Nails—3095—W. Bass.  
 Piston-rods, packing—3206—J. Barwick and S. Tyndall.  
 Portable cases—3019—N. M. Marin.  
 Powder flasks—2198—C. M. Fontenoy and J. N. Dopfeld.  
 Printing machines—3196—R. and H. Harfield.  
 Printing surfaces by photography, preparing—3113—R. H. Courtenay.  
 Projectiles—3204—F. Palmer.  
 Railway breaks—3077—J. and W. Kitchen, and S. Samuels.  
 Railway crossings—3202—J. and E. Firth.  
 Railway engines and carriages, connections between—3164—W. Butler and A. Dalgety.  
 Railway trains, signalling apparatus for—3182—J. Smeeton.  
 Railways, fog signals upon—3166—T. Barker.  
 Reaping machines—3031—T. Wardlaw.  
 Roads—3379—W. H. P. Gore and R. Gore.  
 Rugs, &c.—2885—E. Huxley.  
 Safety lamps—3045—E. Thomas.  
 Salts of soda and potash—3097—J. K. Leather.  
 Shades—3085—F. Tyerman.  
 Smoky chimneys, preventing—3188—D. S. Chater.  
 Submarine excavations—3025—W. E. Newton.  
 Sugary substances, saccharatifying—3146—E. T. Hughes.  
 Telegraphic despatches, confirming—2977—E. J. Payne.  
 Textile fabrics, cleansing—2967—W. S. Macdonald.  
 Vessels' holds, discharging bilge water from—3176—A. Hermann and H. Brethauer.  
 Vessels, raising sunken—3067—T. McComas.  
 Wadding—3103—W. E. Gedge.  
 Water, purifying—3055—C. J. Wahab.  
 Weaving, looms for—3190—E. L. Paraire.  
 White lead—3133—W. R. Lake.  
 White lead—3180—H. A. Bonneville.  
 Yarns—3115—J. H. Johnson.

#### INVENTION WITH COMPLETE SPECIFICATION FILED.

- Nails—3328—W. R. Lake.

#### From Commissioners of Patents' Journal, December 25th.

#### PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

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|---------------------------------|---|
| 3208. F. N. Gisborne.           | 3242. J. H. Johnson.                          |
| 3218. R. H. Taylor.             | 3256. J. H. Johnson.                          |
| 3219. R. Paterson.              | 3263. H. P. Forrest.                          |
| 3212. J. Howden.                | 3290. H. Caunter.                             |
| 3216. W. Clark and W. F. Batho. | 3291. D. Naylor.                              |
| 3240. J. Gjers.                 | 3246. J. Ronald.                              |
| 3273. J. Gjers.                 | 3253. W. E. Newton.                           |
| 3223. J. Green.                 | 3254. S. B. Ardrey, S. Beckett, and W. Smith. |
| 3224. E. J. Green and R. Mason. | 3261. S. S. Gray.                             |
| 3241. A. Turner.                |   |

#### PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

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|----------------------|--|
| 2883. G. S. Goodall. | 2992. H. Cochrane.                       |
| 2896. J. Willcock.   | 2990. J. Whitworth.                      |
| 2906. J. H. Johnson. | 2975. T. S. Cressey.                     |
| 2918. A. V. Newton.  | 2953. X. C. de Nabat and A. C. de Nabat. |
| 2967. S. King.       |  |