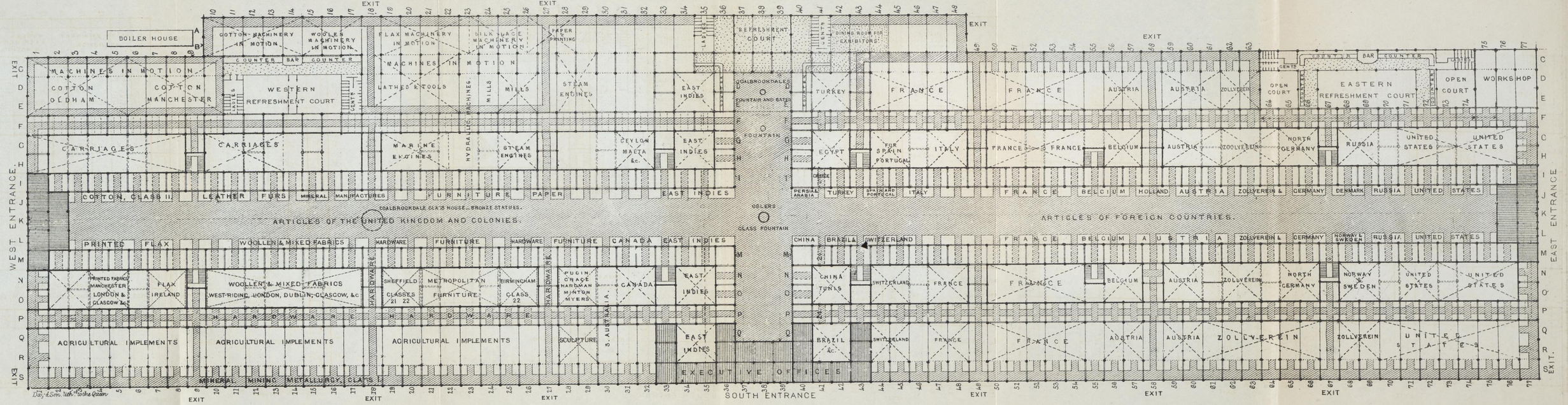
The journal of design and manufactures. Vol. V 1851

London, England: Chapman and Hall, 1851

GREAT EXHIBITION BUILDING, 1851.

COPIED BY PERMISSION FROM THE OFFICIAL PLANS.

PLAN OF GROUND FLOOR.



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GREAT EXHIBITION BUILDING, 1851.

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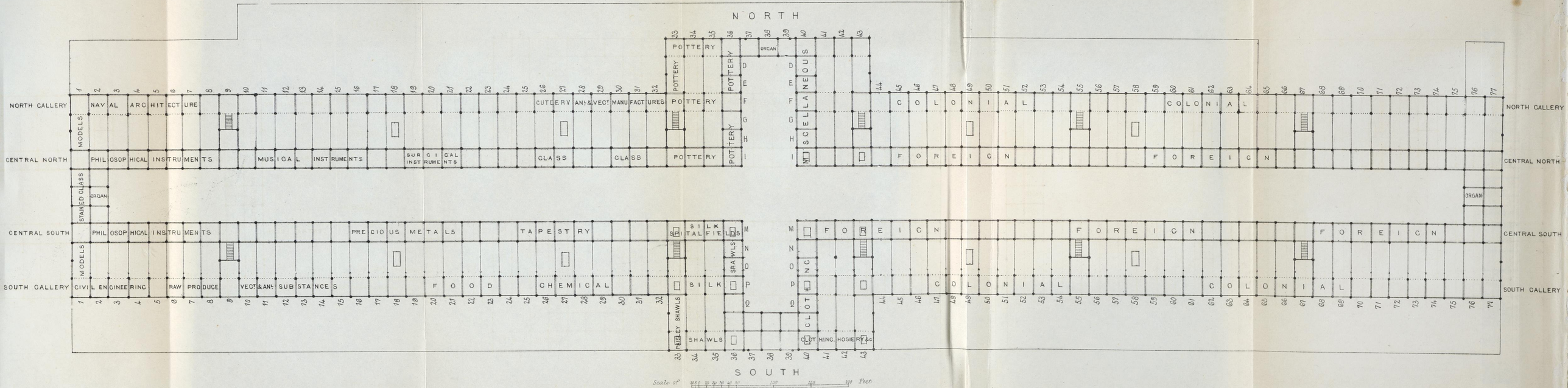
PLAN OF GALLERY.



PRINTED FOR JOURNAL OF DESIGN.

THE

JOURNAL OF DESIGN

AND MANUFACTURES.

WITH

FIFTY-SIX FABRIC PATTERNS INSERTED,

AND

NUMEROUS ENGRAVINGS.

VOL. V.

MARCH—AUGUST, 1851.

"INVENTION OF ARTS, WITH ENGINES AND HANDICRAFT INSTRUMENTS FOR THEIR IMPROVEMENT, REQUIRES A CHRONOLOGY AS FAR BACK AS THE ELDEST SON OF ADAM, AND HAS TO THIS DAY AFFORDED SOME NEW DISCOVERY IN EVERY AGE."

Defoe's History of Projects.

LONDON:

CHAPMAN AND HALL, 193 PICCADILLY.

MDCCCLI.

LONDON:
Printed by G. Barclay, Castle St. Leicester Sq.

INDEX TO VOLUME V.

ILLUSTRATIONS TO VOLUME V.

PATTERNS OF FABRICS.

FABRICS EXHIBITED AT THE GREAT EXHIBITION OF 1851.

WITH NUMEROUS ENGRAVINGS,

And TWO PLANS, shewing the Classification and Arrangement of Articles in the Building of the Exhibition of 1851, *from Official Sources. No.* 1, *Plan of the Ground Floor. No.* 2, *Plan of the Gallery.*

THE

JOURNAL OF DESIGN

AND MANUFACTURES.

No. 25. MARCH 1, 1851. Vol. V.

Original Papers.

EXHIBITION OF 1851 : MONTHLY REPORT OF PROGRESS.

THE first page of our fifth volume may be appropriately opened with the earliest authentic plans shewing the material developement of the great work of the world in the present year. We are enabled to lay before our readers copies of the official plans upon which the articles in the building are now in process of being received and arranged. The two plans reveal almost all that can be known until the doors of the building are opened on the 1st of May. Every British Exhibitor is thus enabled to see approximately in what part of the building his position is likely to be. Extending the plan before him, the reader will observe that the first broad feature of the arrangement is, that the ground-floor is equally divided between Foreign countries and Great Britain and her Colonies : the former taking the east and the latter the west end of the Transept. The next principle worthy of observation is the position of each Foreign country and Colonies, which are placed according to their latitudes : the tropical climates being located at the corners of the Transept. On the Foreign side, on the north, are Persia, then Turkey, Greece, &c. On the south side are China, Morocco, Tunis, Brazil, &c. At the western corners of the Transept are the East Indies, &c. On the Foreign side, each nation will arrange its own goods according to its own taste. On the British side a given spot has been assigned to each of the thirty Classes into which British productions have been divided, and the arrangement of each Exhibitor's articles will be his own. The choice between the ground-floor and the galleries has been, we believe, determined by the proportionate weight and size of the class of articles to be exhibited. Accordingly minerals, heavy machinery, agricultural implements, furniture, and hardware, are necessarily placed on the ground-floor, whilst precious metals, philosophical instruments, glass, pottery, silk, shawls, carpets, and tapestry, are to be found in the galleries.

Another feature in the arrangement worthy of remark is the kind of boundaries into which the several divisions naturally class themselves. These form courts, and they will establish very picturesque and marking features. Thus on the Foreign side there will be spaces of 48 feet by 48 feet or more, in which the productions of each country will be arranged, and which may be easily visited as *wholes*. The visitor one day will go to the Turkey court (G. H. 41 and 42), then to the Swiss court (N. O. 44 and 45), then through the series of French courts (D. E. N. O. P. Q., 50 to 54, &c.), and so on. On the British side, in like manner, he will be able to go to the court of the Printed Fabrics (N. O. 4 and 5), then cross the nave or central passage into the Carriage court (G. H. 3 to 8), or the several Machinery courts (A. B. C. D. E., 1 to 34), then to a Fine Art or Paper court (G. H., 28 and 29) ; crossing the nave again, he may find himself either in the courts of the Woollen Fabrics (N. O., 10 to 17), or the Flax (N. O., 7 and 8), or of Agricultural Implements (Q. R., 2 to 26), or of Sheffield (N. O., 19 and 20) and Birmingham Hardware (N. O., 25 and 26), or Furniture (N. O., 21 to 24), or Church Decoration by Pugin (N. O., 28 to 29), or of Sculpture (Q. R., 28 to 29).

Within these boundaries or courts, and preserving the arterial passages untouched, every Exhibitor is free to fit up the space allotted to him as he thinks conducive to the most effective display of his goods. In only one solitary case

have we heard of a desire to violate these principles for the sake of making a little more exhibiting room, and we have no doubt, as the arrangement advances, that that violation will not be persevered in.

The nature of the building lends itself to a very simple and easy mode of notation, which will be marked throughout on the capitals of the columns. The columns are always at distances of 24 feet or multiples of 24 feet. Every 24 feet is, therefore, numbered and lettered. The 24-feet spaces from west to east are *lettered*, beginning with letter A. at the north and ending with letter S. at the south side. Thus throughout the whole length of the building, say in Avenue F. or P., the visitor, if he only walk straight on, will always find himself in these letters at every 24 feet, passing into a different *number*. So with the numbers southwards starting from the north at No. 18, or 27, or 49, he will continue in the avenues of this number, passing every 24 feet into a different *letter*. Nothing can be simpler: every 24-feet square thus has its own notation, and it will be possible precisely to identify every spot in the whole twenty acres. If any one lose his way in this maze of industry, he will simply have to proceed north or south, and will find himself either in the nave or at the extreme sides, where there are numerous exits.

Having thus described the general features of the arrangement in the building, we will proceed to speak of the state of the arrangement of the several divisions, beginning with those of Foreign countries. We may observe, that the receipt of Foreign goods commenced on the 11th ult., and is now proceeding with full activity. The following will be found to be an accurate summary of the state and prospects of the Foreign side of the Exhibition on the 20th of February, when we were obliged to go to press.

ARABIA.—Two areas on the north side of the building have been apportioned to Arabia. No return of articles yet received.

BELGIUM.—No detailed return has yet been received from Belgium beyond a statement of the space required for each section. As far as can be ascertained each section appears to be well represented. Belgium will be arranged on both the north and south sides of the building. The probable number of Exhibitors is expected to be about 500. Mons. Charles Cuylits, of 55 Gracechurch Street, has been appointed agent.

BOLIVIA.—No communication has been received.

BRAZIL.—Does not intend exhibiting.

BUENOS AYRES.—A communication has been received, stating that steps have been taken for representing Buenos Ayres in the approaching Exhibition.

CENTRAL AMERICA.—Does not intend exhibiting.

CHILI.—Does not intend to exhibit.

CHINA.—The Government in China refused to have anything to do with the Exhibition. But a collection of Chinese articles of industry is now being made, and some consignments have arrived from China. The spot for exhibiting is on the south side of the building, at the corner of Transept.

DENMARK.—No detailed return has yet been received, but merely an intimation that 450 only out of the 2500 feet allotted to Denmark would be required. Space on the north side of the building has been allotted to Denmark. Mr. R. Weslinholz, of 26 Mark Lane, has been appointed agent.

EGYPT.—No communication of any kind whatever has been received: $4\frac{1}{2}$ areas (north) have been set aside for Egypt.

EQUATOR.—Does not intend exhibiting.

FRANCE.—No precise returns have as yet been received from France, but simply an intimation that the whole space allotted will be required. Mons. Sallendrouze de Lamornaix, of George Street, Hanover Square, has been appointed agent: areas on the north and on the south have been allotted to France.

GERMANY: *Austria.*—No detailed returns have yet been received, but they are expected in the course of a few days. C. Buscheck, Esq., and Dr. Schwartz, Chandos House, have been appointed agents. Areas north and south have been allotted to Austria.

GERMANY—*continued.*

North Germany: Hamburgh.—A detailed return has been received, consisting of a great variety of objects, principally belonging to Classes 5, 10, 20, 26, 30. Number of Exhibitors, 107. C. Nobock, Esq. (care of Messrs. McCracken), has been appointed agent.

Hanover.—A detailed return has been received. The articles to be exhibited are not numerous. The number of exhibitors is 11. Mr. F. Stahlschmidt, of 14 Mark Lane, has been appointed agent.

Lubeck.—Has sent a detailed return, but very few articles will be exhibited. The number of Exhibitors is only 11.

Zollverein.—A detailed return has been sent, in German. Saxony, Wurtemburg, and the Duchy of Nassau, have also sent returns, in English separately. The articles contributed by *Saxony* consist principally of woollen and cotton goods, specimens of book-binding, musical instruments, colours, flax, &c. *Würtemburg* sends colours, dried fruits, a few chemical preparations, watches, musical instruments, philosophical and chemical apparatus, linen, wool, hardware (chiefly toys), confectionery, statuary, and painting (encaustic). *Duchy of Nassau*, a large collection of minerals (to be presented to one of our museums after the Exhibition), fancy articles in stagshorn and ivory, &c. Mr. Hebeler, of 106 Fenchurch Street, has been appointed agent. Also Mr. Bourath Stein, with two assistants, viz., Mr. Laechclin and Mr. Muellens, will, together with four other gentlemen, appointed by Bavaria, Saxony, Wurtemburg, and the Grand Duchy of Hesse, act as a Commission for the Zollverein. The position of the Zollverein is on both sides the building. The articles are being delivered.

GREECE.—A detailed return, ready for insertion in the catalogue, has been received. The articles appear nearly all belong to Section I. Among them may be enumerated sponges, honey from Mount Hymettus, and a great variety of marbles. The number of Exhibitors is 28. Areas on the north side of the building have been allotted to Greece.

HOLLAND.—A detailed return, ready for insertion in the catalogue, has been received. The articles to be exhibited consist principally of raw materials (chiefly vegetable substances), agricultural implements, woollen and linen manufactures, leather, books, miscellaneous substances, &c. Areas on the northern side of the building have been allotted to Holland. The number of Exhibitors is 170.

ITALY: *Naples.*—No return has yet been received from Naples.

Rome.—No return has been received.

Tuscany.—A return, in Italian, has been received.

Sardinia.—A detailed return, ready for insertion in the catalogue, has been received. The articles to be exhibited consist of a variety of chemicals, natural products, manufactures in silk, cabinet work, &c. Classes 2, 4, 13, and 26, will be apparently well represented. The number of Exhibitors is 93.

MEXICO.—No returns have been received, but merely an intimation that the space allotted would be required.

MONTE VIDEO.—No communication of any kind has been received.

MOROCCO.—Does not intend exhibiting.

NEW GRENADA.—No return has been received, but merely an intimation that the space allotted to New Grenada would be required.

NORWAY AND SWEDEN.—A return has been received. The articles to be exhibited consist principally of iron ores, iron, ironmongery, silks, &c. Mr. D. Maclean has been appointed agent. Areas on the south have been allotted to Sweden and Norway.

PERSIA.—Does not intend exhibiting, but a collection of Persian specimens will be made.

PERU.—No communication has been received.

PORTUGAL.—No returns have yet been received, but Mr. J. Vanzeller, 5 Jeffry's Square, has been appointed agent.

RUSSIA.—No returns have yet been received; they may, however, be expected in the course of a few days. Mons. Gabriel Kamensky, of 34 Norland Square, Notting Hill, has been appointed agent. Some goods have arrived.

SPAIN.—No return has yet been received. Don José Joaquim de Mora has been appointed agent.

SWITZERLAND.—About fifty of the forms for the catalogue have been received, the remainder may be expected in a few days. A return has also been forwarded, shewing the space required for each Class. The mousselines and embroidery of St. Gall and Appenzell, the ribbons of Bale, the silk stuffs of Zurich, the watchmakers of Jura, and jewellery of Geneva, will be well represented, as will also the wood-carvers of the Bernese Oberland. Mr. Morris Prevost has been charged with the care and consignment of the Swiss articles for the Exhibition, and Mr. J. C. Hillam is appointed Custom House Agent. Mons. le Docteur Bolly has also been appointed, by the Swiss Commission, Commissioner in London. The articles are being delivered.

TUNIS.—A detailed return, ready for insertion in the catalogue, has been received. The list contains a variety of articles, both manufactured and natural products, comprising almonds, dyes, sponges, leather, saddlery, house furniture, woollen blankets, cloth, wearing apparel in great variety, gold and silver embroidery, essences, &c. The names of the Exhibitors are not given.

TURKEY.—No returns have yet been received. Mr. E. Zorab, 1 Bryanstone Square, has been appointed agent.

UNITED STATES.—No return has yet been received. Mr. P. Thompson has been appointed agent. The United States has a position on the north and south of the Transept.

VENEZUELA.—Does not intend exhibiting.

WESTERN AFRICA.—No communication has been received.

The position of the Colonies is indicated by Plans to be next the Transept on the west side, and in the Galleries on the east, if the space be wanted. The official reports at present received from the Colonies are as follows:—

AUSTRALIAN COLONIES.—No direct accounts have been received from *New Zealand*, but some flax and wool will be exhibited by Mr. Tyrrel. *Australian* sheeps' wool will be exhibited by Colonel McArthur and by Mr. Learmonth. Iron and copper ores by the Australian Mining Companies. From *Van Diemen's Land* a collection of articles has been shipped, and may be expected about the end of March. The space required has not been stated. The articles from *New South Wales* are not expected till after the 1st of March, and will consist of wool, salt beef, preserved meat, tallow, neats'-foot oil, neats' tongues, &c., chiefly articles of raw produce, animal, vegetable, and mineral.

BERMUDAS.—No intelligence.

CANADA.—Goods have already been received and are deposited in the building. They consist chiefly of planks of very fine timber, samples of grain and provisions, edge tools (carpenters', &c.), hardware, and some furniture.

CAPE OF GOOD HOPE AND NATAL.—The articles expected principally consist of animal and vegetable products belonging to Classes 3 and 4.

CEYLON.—Lieut. Henderson (Ceylon Rifles) has sent over a few articles of Kandian manufacture, more as curiosities than for any superiority in workmanship, &c. These have not been sent, however, through the Ceylon Committee, who have merely stated their intention to exhibit, but have not transmitted any particulars.

INDIA, &c.—*India*, including Singapore and Labuan, has not yet furnished any report of the articles intended for exhibition; but it has been notified that the 30,000 feet allotted will be filled up. Some of the goods have already arrived. It is expected that the catalogue of Nepaulese articles will be diminished from its original size, as several of the articles are stated to have been broken on their journey to Calcutta. The lists from *Nepaul*

comprehended the following:—Copper models of several temples of deities; bricks, tiles, and building materials; machines for spinning, grinding, churning, vessels for use, plates, spoons, &c.; plough; musical instruments, clarions, cymbals, drums, tambourines; water clock; stone images; gold and silver ornaments, earrings; coins; lamps; silks, wools, canvass; articles of clothing, clothes, silks; furs; bows, guns, swords, knives, scissors; horns of rhinoceros, deers, &c.; tools; baskets; minerals; seeds, fruits, herbs.

MALTA.—Despatches have been received, stating that space will be required, but no enumeration of the articles is given.

NOVA SCOTIA.—The articles from this colony consist entirely of specimens of ores and minerals.

PRINCE EDWARD'S ISLAND.—SIERRA LEONE.—Letters have been received, stating inability to exhibit.

ST. HELENA.—The Agricultural Society of St. Helena intend exhibiting specimens of raw cotton, alkali, and rock-salt.

WEST INDIES.—The only articles as yet communicated are two baskets of shell-work by an English lady and her daughters, residing in the Bahamas.

We believe that the general superintendence of the arrangement of the Colonies has been undertaken by Dr. Lindley, assisted by Lieut. Brownlow, of the East India Company's Engineers. Dr. Royle, assisted by Professor Solly, has charge of the East Indian collection.

We now come to British goods, which, as we have before said, will be classified into 30 divisions. The following table shews these divisions, the space occupied by each, the position, and the gentlemen superintending the several classes. By this time the place of every Exhibitor has been actually marked down in the building:—

I. RAW MATERIALS.	Superintendents.	No. of Exhibits.	Feet. Ground.	Feet. Wall.	Lower Bays.	Upp. Bays.	Position. Letter.	Position. No.
1. Mining and Quarrying, Metallurgy, & Mineral Products	Prof. Ansted Mr. Robt. Hunt Mr. Harman	353	8831	2343	26	..	S	1–26
2. Chemical & Pharmaceutical processes and products generally.	Dr. Playfair Mr. Phillips Mr. Harman	166	1776	505	..	6	South Gallery	26 to 32
3. Substances used as food.	Dr. Royle Dr. Lindley	171	2443	3500	..	8	South Gall.	17 to 25
4. Vegetable & Animal Substances used in manufactures, implements, or for ornament.	Dr. Royle Dr. Lindley Mr. Matchwick	133	3343	2075	..	11	South Gallery	6 to 16
II. MACHINERY.								
5. Machines for direct use, including Carriages, Railway & Naval Mechanism.	Mr. Hensman Lt. Du Cane, R.E.	553	29,700	2600	89	..	North Gallery	1 to 29
6. Manufacturing Machines and Tools.	Mr. Hensman Ens. Craster, E.I.C.E.	326	34,300	2580	103	..	A to E	1 to 26
7. Mechanical, Civil Engineering, Architectural, and Building Contrivances.	Mr. Hensman Lt. Walker, R.E.	195	6000	2182		18	North Gallery	..
8. Naval Architecture, Military Engineering and Structure, Ordnance, Armour, & Accoutrements.	Captain Westmacott, R.E. Mr. Watts, R.N.	331	6000	2190	..	18	Central So. Gallery.	..

	Superintendents.	No. of Exhibits.	Feet. Ground.	Feet. Wall.	Lower Bays.	Upp. Bays.	Position. Letter.	Position. No.
9. Agricultural and Horticultural Machines and Implements.	Mr. B. Gibbs	..	25,000	..	..	..	Q R S	..
10. Philosophical Instruments & miscellaneous Contrivances, including processes depending upon their use, Musical, Horological, and Acoustical Instruments.	Lt.-Col. Lloyd Lt. Gordon, R.E.	515	7400	3705	..	23	North Central & South Central.	2 to 21 2 to 7
III. Manufactures.								
11. Cotton.	Mr. Wallis Mr. W. Hawkins	73	1535	5640	6	..	I J	3 to 8
12. Woollen & Worsted.	Ditto	125	4749	16,100	15	..	L M N O	9 to 14
13. Silk and Velvet.	Ditto	95	1312	2807	..	6	Transept Gall., S.W.	..
14. Manufactures from Flax and Hemp.	Ditto	102	3784	13,344	..	12	L M N O	5 to 8
15. Mixed Fabrics, including Shawls.	Ditto	80	5799	30,040	13	5	L M N O	14 to 17
16. Leather, including Saddlery and Harness, Skins, Fur, and Hair.	Mr. Dodd	186	2321	5494	5	..	I J	10 to 15
17. Paper, Printing, and Bookbinding.	Mr. Owen Jones	170	1753	2987	11	..	G H I J	27 26–29
18. Woven, spun, felted, and laid Fabrics, when shewn for Printing & Dyeing.	Mr. Wallis Mr. W. Hawkins	93	2146	12,480	..	8	L M N O	3 to 5
19. Tapestry, including Carpets and Floor Cloths, Lace and Embroidery, fancy & industrial Works	Mr. Lowe	266	2440	51,800	..	10	North Gallery.	23 to 32
20. Articles of Clothing for immediate personal, or domestic use.	Mr. Wallis.	220	3526	3566	..	8	Trans. Gal., S.E.	..
21. Cutlery, Edge and Hand Tools, & Surgical Instruments.	Mr. R. Thomson Lt.-Col. Lloyd	60	3441	557	..	12	North Gall.	..
22. General Hardware, including Locks and Grates.	Mr. R. Thomson	798	18,404	9985	32	8	L M N O P	18 to 20 25 to 29 3 to 27
23. Works in precious Metals, Jewellery, & all articles of luxury not included in the other juries.	Mr. Lowe	..	3605	233	..	18	South Cen. Gallery.	7 to 22

	Superintendents.	No. of Exhibits.	Feet. Ground.	Wall.	Lower Bays.	Upp. Bays.	Position. Letter.	No.
24. Glass.	Mr. Lowe.	..	2531	5727	..	9	N. Cen. Gall.	23 to 33
25. Ceramic Manufacture, China, Porcelain, Earthenware, &c.	Mr. Lowe Lt. Pasley, R.E.	..	4313	3583	..	14	Transept Gall., N.W.	..
26. Decoration Furniture & Upholstery, Paper-Hangings, Papier Mâché, and Japanned Goods.	Mr. T. Thompson	393	10,638	25,367	25	..	I J L M N O	19 to 25 21 to 25 21 to 24
27. Manufactures in Mineral Substances, used for building or decorations, as in Marble, Slate, Porphyries, Cements, Artificial Stones, &c.	Prof. Ansted	96	3641	1839	..	..	G H I J	18 15 to 8
28. Manufactures from Animal and Vegetable Substances, not being woven, felted, or laid.	Mr. T. Thompson	170	1482	2212	..	..	North Gallery	5
29. Miscellaneous Manufactures and Small Wares.	Mr. Dodd	283	1891	1258	..	7	Transept Gall., N.E.	..
IV. Fine Arts.								
30. Sculpture, Models and Plastic Art, Mosaics, Enamels, &c.	Mr. Owen Jones	..	10,176	5470	..	11½	..	..

In the division of labour among the three working members of the Executive (questions of management affecting general principles being discussed and settled by all), the superintendence of the building, police, admission, &c., have fallen to Colonel Reid and Mr. Dilke, whilst the allotment of space has chiefly devolved on Mr. Cole. As the popularity of the Exhibition has increased, so have the demands for space increased, and the pressure has been so great that the following has been issued :—

"MEMORANDUM ON RE-OPENING THE QUESTION OF SPACE.

"It has been reported to the Executive Committee that, in some cases, whilst the claims of applicants for space were under examination by Local Committees, or by some of the Metropolitan Sectional Committees, the vouchers for space were lost or mislaid, and consequently have not yet reached the Executive Committee. Requests have likewise been preferred to continue to receive further vouchers for space, in cases where the original amounts of space were not fully allotted, when the vouchers were sent in; and further, requests have been made by Exhibitors to be allowed to exchange portions of the space allotted to them with other parties, and Exhibitors having space allotted in two classes have made application to change the relative quantities in each class.

"The Executive Committee regret that at this late period it is impossible to entertain any questions which tend to re-open the question of space. It is necessary to remind Exhibitors that, strictly speaking, the 10th of December was the last day fixed by Her Majesty's Commissioners for receiving vouchers of space from Local Committees, and that the places for each of the Thirty Classes have actually been fixed in the Building. To re-open the question at the present time would be tantamount to disturbing the boundaries of the Thirty Classes, and might jeopardise the opening of the Exhibition.

"At the same time, the Executive Committee will do their utmost to meet those cases where, in consequence of the voucher not having reached the Executive Committee, an applicant for space may have been excluded from no fault of his own. Any application properly certified by the Secretary of the Local Committee as having been made and duly sent by him to the Executive Committee before 31st October, will be examined on its merits, and, if found to be proper, will be admitted conditionally on space being available when the actual arrangement of the articles is in progress."

We do but echo the general approbation of the public in saying, that the scale of prices fixed by the Commissioners seems to be exactly right. The following is their manifesto on this interesting point:—

"Her Majesty's Commissioners for the Exhibition of 1851 have had under their consideration the regulations respecting the admission of visitors, which it appears to them necessary to adopt, for the effectual accomplishment of the purposes of the Exhibition.

"Their attention has been principally directed to the following points:—

"1. The necessity of making such arrangements as shall secure the convenience of the public visiting the Exhibition, whether for study and instruction, or for the more general purposes of curiosity and amusement.

"2. The due protection and security of the property deposited in the Building.

"3. The effective control over the number of visitors, while the servants and officers intrusted with the maintenance of order and regularity in the Building are comparatively inexperienced in their duties.

"4. The necessity of maintaining the self-supporting character of the Exhibition, and of defraying the liabilities incurred.

"5. The desire of the Commissioners to render the Exhibition accessible to all persons at the lowest possible charge, and with the least delay which a due regard to the preceding considerations will admit.

"Having these objects in view, Her Majesty's Commissioners have determined to adopt the following regulations:—

"The Exhibition will be open every day (Sundays excepted).

"The hours of admission and other details will be announced at a subsequent period.

"The charges for admission will be as follows:—

Season ticket for a gentleman	£3	3	0
Season ticket for a lady	2	2	0

"These tickets are not transferable, but they will entitle the OWNER to admission on all occasions on which the Exhibition is open to the public.

"The Commissioners reserve to themselves the power of raising the price of the season tickets when the first issue is exhausted, should circumstances render it advisable.

"On the first day of Exhibition season tickets *only* will be available, and no money will be received at the doors of entrance on that day.

On the second and third days the price of admission on entrance will be (each day)	£1	0	0
On the fourth day of Exhibition	0	5	0
To be reduced on the twenty-second day to	0	1	0

"From the twenty-second day the prices of admission will be as follows:—

On Mondays, Tuesdays, Wednesdays, and Thursdays, in each week	£0	1	0
On Fridays	0	2	6
On Saturdays	0	5	0

"No change will be given at the doors. This regulation is necessary to prevent the inconvenience and confusion which would arise from interruption or delay at the entrances.

"Should experience in the progress of the Exhibition render any alteration in these arrangements necessary, the Commissioners reserve to themselves the power of making such modifications as may appear desirable, of which due and timely notice, however, will be given to the public."

We believe that the Executive Committee are prepared to say that the Exhibition shall open on the 1st May. All the work which devolves on them will be done, and it will rest wholly with the Exhibitors themselves whether *their* work is done or not.

To the honour of Dunfermline it may be recorded, that their counter was the first erected in the building.

RECENT IMPROVEMENTS IN WOOLLEN CLOTHS.

(Powell's Bisunique Cloth.)

In all the vast improvements which have been made in the machines used for the manufacture of woven fabrics, from the first preparation of the raw material to its ultimate finish after it has passed from the loom, there is not a single important deviation from the simple principles of the rudest process of which we have any traces from antiquity. Whilst this may be said truly, even of the most complicated and beautiful machinery which the ingenuity of this country, more than any other, has introduced into the various operations which the fleece, the fibre, or the down, must undergo before it reaches the hands of the weaver, at the same time the truth of the paradox is most complete and remarkable in the case of the loom itself. In carding, combing, spinning, throwing, and warping the beautiful, in some instances the wonderful contrivances by which British invention especially has superseded the labour of man's hand, and to some extent the working of his mind, are in reality but improved modes of applying old principles, or modifications of the primitive handicraft. But they effect, however (by means almost identical), vastly increased rapidity, vastly multiplied quantity, and most varied quality. The card, the spindle, the bobbin, and the reel, are practically the same as ever, but the various and intricate substitutes by which they are put in motion give a totally new character to the operations, and in some degree may be

considered as introducing almost new principles even in the primary processes.

The same cannot be said of weaving. The stupendous machinery of the cotton-mill may disown all obligation to the wheel and spindle, or the simpler distaff; but in every essential except the motive power, and certain accessories for speed and fashion, the newest of our power-looms has every essential principle in common with the plain hand-loom, or the simple apparatus which the tenacious Hindoo keeps unaltered from the remotest age of civilisation. All the working parts are the same, with little modifications. The beams, the treddles, shuttle, lay, and batten, are much alike in both. That the manufacture of every kind of woven fabric has been advanced in all respects to a prodigious extent in the British islands, within the four hundred years that have elapsed since the first settlement of Flemish weavers was fixed by the favour of Edward III. (in the busy and far-famed West Riding), and that much of the wealth, greatness, and even the peace which we now happily enjoy, is owing to that advance, created in part by improved methods of weaving, are of the proudest boasts of our age and country. The great variety of new fabrics which have been of late and are daily produced, especially in worsted and mixed cloths,—such as merinos, paramattas, orleans, and the like,—are rather the results of improvements on previous processes than in weaving itself. Scarcely any alteration can be said to have taken place in the process so as to affect the nature of the product itself.

But we have now before us what appears to be a great departure from the ancient mode of weaving: it is that recently introduced and patented by Mr. Samuel Powell, of Loughborough, Leicestershire. The only essential improvements on the primitive mode of weaving until this time may be stated to be the fly-shuttle, the Jacquard-loom, and the practical application of water and steam power, as substitutes for the hands and feet of man. But the novelty to which we allude consists in the manufacture of a variety of fabrics, which Mr. Powell has chosen to designate by the name of "bisunique," or two-fold, each cloth or fabric having two faces of different colours, but each equally well finished, and capable of exhibiting any variety of pattern or design.

Four examples may be noticed as shewing the application of the new mode of weaving:—

1st. To produce a cloth in which both sides are of one make or pattern (either side shewing a different colour from the other, or both sides of the same colour and finish), the whole of the warp threads are divided into two equal parts, each of a different colour. They are then put into the loom alternately, that is, a single thread of one colour and then a single thread of the second colour, and so throughout, the twist of the one being open band, and the twist of the other cross band. The warp is flushed on both sides, four picks and each coloured warp is bound in or made fast by the same shoot of weft passing through the middle of the warp, there being as many threads above the weft as below it.

2d. To produce a cloth in which one side shews two or more colours, while the other side is of one colour only, it is necessary that one-half the warp threads should be of the requisite proportions, say of red, green, and brown, and the other half of the one colour only. The coloured threads are placed in the loom either alternately and in equal numbers, or in such order and numbers as the intended pattern requires, while the other half of the warp will be seen only.

3d. To produce a cloth of which one side is to be of a different quality from that of the other,—say, one side of fine drab and the other of black, brown, or blue,—one-half of the warp threads are of a fine and the other half of a coarse wool.

4th. All the different arrangements of the 1st, 2d, and 3d, may be combined in one piece, and in this combined arrangement a greater or less number of warp threads are used to form one side than the other; also the threads of the warp may be thicker on one side than on the other, or the threads of the warp on one side may be made of two or more different colours of thread and

twisted together, while the threads of warp forming the other side are all of one colour; or, when preferred, both sides may be made of twisted threads of different colours.

The specimen which introduces this notice will shew the nature and quality of this new manufacture.

Experience only can determine the utility and application of these fabrics, and any advantages they may possess. It is obvious they will lessen the difficulties of supplying a sufficient variety of patterns in remote settlements in the interior of Asia and America, &c. By this invention a single piece of any fabric, woollen, silk, cotton, or mixed, serves the purpose of two, as far as regards choice of colour, pattern, or quality, while at the same time the whole bulk to be carried inland is reduced to one-half what would be generally required. Nor are these the only advantages which they possess, for our traders at home will be enabled to keep double the amount of patterns in the same space which is now required for their ordinary stock, or the same variety of stock which they now keep will be obtainable at little more than half its present cost, and thus the amount of each trader's capital will in effect be greatly increased.

Before 1823 the face or gloss upon woollen cloths was obtained by friction and water, in the process of razing the nap at the "gig-mill," or razing machine. This plan had the advantage of keeping the cloth thoroughly sound, but the gloss obtained was not of a permanent character. About the time we have mentioned attempts were made to fix the gloss by boiling the cloth for some eight to twelve hours. Cloths subjected to this process were wound tightly round a solid roller and covered with a linen or cotton wrapper, and in this state they were boiled in water varying in temperature from 160° to 212°. The tighter the cloth was wound upon the roller and the greater the heat, the higher was the lustre; but unfortunately for the success of the plan, the cloth was made tender in proportion to the duration and heat that it was subjected to. The consequence was, that highly-finished cloths throughout England were regarded as unsound and unserviceable, and from this cause they gave place to goods of a duller appearance. This process of roll-boiling, performed in any way, is injurious to the strength of woollen goods, and the heat and period of boiling was reduced. About the same time that the high finish fell into disrepute in England, the woollen manufacturers of France and Belgium discovered that the gloss could be fixed permanently upon cloths by the aid of steam without rendering the fabric tender, and consequently their goods gradually drove out British woollens from most foreign markets.

The plan pursued in Belgium was that of rolling the cloth tightly round a hollow perforated cylinder, through which steam was admitted into the cloth, and this method was successful in fixing the gloss, and when properly done it did not injure the strength of the fabric; but it was subject to an evil which the stretching of cloth round a cylinder produces, for as pressure is necessary to produce the gloss, the fabric is wound so tightly round the cylinder as to cause an extension or stretching of the cloth in the direction of the warp, so that when the cloth is made into garments and the fabric becomes relaxed from wearing and the effects of the atmosphere, a shrinkage takes place, and causes a puckering on each side of the seams, and along the outer edges of the garments. The French adopted another plan, which avoided this evil, by using a steam-box, the lid of which was perforated, and upon which the cloth was folded backwards and forwards so as just to cover the perforated holes. When thus folded a top plate was screwed down upon it so as to give the required pressure; but another evil was produced little less objectionable than the puckering caused by the Belgian method, for the folding of the cloth caused a crease from list to list as often as it was folded backwards and forwards upon itself, and the same pressure which was sufficient to produce a permanent gloss upon the cloth made the crease equally permanent, and no ironing could enable the tailor to remove this defect. To remedy the above defects a patent has recently been taken out in England, and is known as "Heycock's Patent," which, while it fixes the gloss by the aid of steam, neither stretches the cloth, as do the Belgians, nor creases it from list to list,

as do the French,—as the cloth is neither stretched nor folded, and the pressure is given by mechanical means, while the fabric is strained under the process of steaming equally in length as in breadth.

The cloth of which the piece below is a specimen, is stated to retain a per-

(CLOTH made by HEYCOCK'S PATENT.)

manent gloss, while the fabric itself is preserved sound and uninjured. The success of Mr. Heycock's system must be determined by time; but should the interest of the consumer be advanced, as it seems likely to be in this case, there can be little doubt of the ultimate and permanent adoption of the improvement in place of previous systems of "finish."

ELEMENTARY DRAWING AND MODELLING SCHOOLS.

THE Council of the Society of Arts have circulated among their members a proposal by which they suggest, that the aid and influence of the Society should be engaged to promote the establishment of Elementary Drawing and Modelling Schools, *chiefly* for Artisans.

The Council state that they are strongly impressed with the desire of our young artisans to obtain a knowledge of drawing, and the many advantages which they may derive from it; at the same time the Council are aware of the great difficulties which are at present interposed, from the want of efficient instruction within the reach of the artisan.

The Council do not limit their appreciation of the advantages of drawing and modelling solely to those improved facilities in manufacture which they unquestionably afford to mechanics; but the Council trust that these useful arts will be found to occupy the young in pursuits tending in every way to their improvement, and to provide them with the most wholesome sources of instruction and enjoyment.

The Council are of opinion that this project, while it forms one of those useful undertakings which may properly emanate from the increased progress and influence of the Society, will be found entirely within its original scope and objects. The assistance and co-operation of the Society are made dependent upon the following conditions:—

I. That such Schools shall be called by the names of the localities in which they are established: "The ——— Drawing and Modelling School for Artisans, under the Superintendence of the Society of Arts."

II. The localities, whether represented by corporate or parochial authorities, or by a committee, shall engage to provide, keep clean, warm, and light a suitable room, and fittings, for the use of the School; and also to insure a sum of not less than 50*l.*, by subscriptions, donations, and students' fees, for the support of the School for twelve months.

III. That each locality shall appoint a committee of management, which shall consist of subscribers of not less than 10*s.* each per annum, and shall include some of the members of the Society of Arts (not less than three) residing in the neighbourhood.

IV. That this committee shall adopt the general rules framed by the Society for the government of their affiliated Schools, and that all such Schools shall be under its superintendence.

V. That the committee shall be responsible for the custody and safe return of the property of the Society which is lent for the use of the School.

VI. That the committee shall appoint a secretary and treasurer, who shall keep minutes and accounts; and that the committee shall annually in . . . . . make a report to the Council of the Society of the state and progress of the School.

Upon a compliance with these conditions, the members of the Society engage to render every support and facility in their power, and to use their influence to insure the success of the Schools established. They propose:—

1. To prepare a concise code of general rules, which shall form a useful manual of management and instruction. 2. To recommend a suitable trained instructor, who shall attend and give instruction two hours in each of those evenings weekly, during the appointed period of session. 3. To provide and lend, until the School is self-supporting, suitable drawings, models, and examples; and, occasionally, books of reference. 4. To appoint a rotation of visitors well qualified to superintend the course of instruction, and the conduct of the School. 5. To give, at their annual distribution, by the hand of their President, medals and rewards to those students who have distinguished themselves by ability and good conduct.

THE COTTINGHAM COLLECTION OF MEDIÆVAL ART.

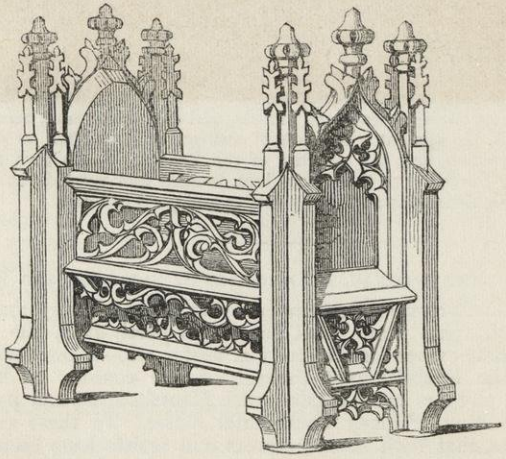
Many sales of private collections of works of art of every class have taken place within the past year. This has arisen partly from the growing taste which the public evince for the study of useful art,—a taste which has been fostered by the establishment throughout the country of Exhibitions of Mediæval Art and Art in connexion with Manufactures, and partly from the unsettled condition of many Continental states. To these causes may be added the facts, that both manufacturers and artists have become impressed with the importance of studying the works of ancient art, which at least manifest a developement of principles, and that the great industrial display about to take place has caused them to search among private collections for types suggestive of new treatment, or combinations of materials. We have now to bring to the notice of manufacturers the intention of the family of the late Mr. Cottingham to offer for sale to the Government the entire collection of models, casts, and specimens of Mediæval Architecture, collected by that eminent architect. The collection has been carefully catalogued, with descrip-

tive notes of some of the more important objects, by Mr. Henry Shaw, whose works on decorative art ought to be known to every manufacturer. The specimens in this collection have been selected from most of the cathedrals and abbeys of England, as well as from Rouen cathedral, the Painted Chamber, and Speaker's lodgings at Westminster, &c., when less care was taken of such things than at present. They consist of examples of Anglo-Norman, Early English, and Pointed architecture, of which the illustrations are very numerous; the Decorative and Perpendicular styles, as well as other features peculiar to the 14th and 15th centuries. Elizabethan architecture is represented by some original ceilings, chimney-pieces, and carved fittings.

The museum, although strictly architectural, contains a large number of specimens of a domestic character carved both in wood and stone, furniture, metal work, and many miscellaneous objects of beauty; while to the antiquarian and sculptor it affords facilities for the study of some of the finest monuments of the 13th, 14th, and 15th centuries.

In offering this collection to the Government, it is hoped that it may be induced to purchase it as the nucleus of a more extensive collection which might be made available, by means of casts, to the instruction of the pupils of our Schools of Design throughout the country,* in which case it would doubtless be of considerable value. We cannot here give a detailed account of the 1453 articles catalogued, and must, therefore, direct attention to a few only of the more interesting specimens in each of the rooms on the ground-floor and basement.

In the Elizabethan parlour we would point attention to the early specimens of carved wood (No. 37), an elaborately-carved oak door and surrounding framework, the former consisting of six panels, carved on each side with medallions containing busts surrounded by foliage of the 16th century, the latter of richly-carved pilasters, frieze, and entablature, shield of arms, &c., with the date 1652 carved on a panel. On the chimneypiece is also the model of a cradle (No. 51), very richly carved in oak and gilt, of Flemish workmanship of the latter part of the 15th century. Our woodcut shews the arrange-



ment of this very elegant design. No. 41, carved oak fittings form a general bookcase, the front containing ten panels filled with medallion busts of the

* We do not know whether the executors of the late Mr. Cottingham are aware that the Government already possesses a large collection of busts and original specimens of ornamental and decorative architecture, being a collection made under the superintendence of Mr. Pugin, for the purpose of assisting Mr. Barry in the decoration of the new Houses of Parliament, and at present deposited at the Government works at Thames Bank.

same character as the door, and a semicircular canopy encloses a bust of the Earl of Essex in a sunk panel. No. 47, a group of two mounted figures, one being in armour, the other in civil costume. No. 48, the companion group, consisting of two mounted figures in armour, partly plate and partly chain mail, the one representing St. Longinus. The first of these groups formed a portion of a composition representing the Crucifixion, formerly in the church of St. Sebald, at Nuremberg; they are of the time of Henry VI., and on the trappings of one of the horses is carved the name of the artist, "Hendaric Roose."

In the first gallery, commencing with No. 83, is a remarkably fine figure of a saint, on a bracket:—

"On the front of his cap are two cross keys, and in his left hand are several others.

"This and the following series of saints, thirty-one in number, were modelled to the same scale from authorities in Westminster Abbey, Henry VII.'s Chapel, Wells, Winchester, York, Peterborough, and other cathedrals, for the purpose of being introduced into the altar screen of Magdalene Chapel, Oxford, at the time it was restored by the late Mr. Cottingham; but were not employed in consequence of objections then taken to their introduction by the College authorities. They represent a most splendid collection of original specimens of mediæval sculpture, and are highly valuable as examples for the study of drapery and costume.

"No. 295. An Altar Screen of Flemish workmanship, of the date of 1490; it is of oak, measuring 7 ft. in height, and 6 ft. 3½ in length, and contains sixteen subjects in alto-relievo, from the life of our Lord, with figures of Prophets and the Evangelists in niches at the sides. The whole is richly painted and gilt, and consists of upwards of one hundred and thirty figures, admirably executed, forming altogether one of the most beautiful works of the kind now existing. The fleurs-de-lis which surmount each compartment did not form a portion of the original design, but were placed there by the command of the Duke of Orleans (Philippe Egalité) while in his possession."

In the north gallery there are some fine busts and casts, a series of figures representing the twelve Prophets, and a model of the doorway leading to the Chapter House of Rochester Cathedral, No. 194:—

"This splendid model is of the full size of the original, which is one of the most beautiful works of the decorated period of Gothic architecture in the kingdom. The design comprises on either side figures in niches, typical of the Jewish religion and the Christian faith; above which, within the hollow of the enriched arch mouldings, are a succession of smaller niches containing seated figures of prophets; the whole terminating at the apex with praying angels and a nude figure in clouds, representing the ascent of the soul to paradise. The whole is executed in the very highest style of art, and is in fine preservation."

Also a very fine series of specimens of wood-carving of the 14th century.

In the basement of the building is a very extensive collection of casts from bosses, pendants, terminations, groining, stall ends, &c. There is also, No. 459, a figure, life-size, of St. Mary Magdalene seated; the drapery of this figure is very gracefully disposed. In the second recess is a cast, No. 545,

. . . "from the curious pendant stone lantern in Patrington Church, Yorkshire. On the bottom is carved a double rose, and the panels on three of the four sides contain effigies in alto-relief of the Blessed Virgin, St. John, and St. Catherine, with their emblems. This lantern forms the pendant boss to the Chapel of the Blessed Virgin, and was so placed as to throw a light on the figure, or painting, above the altar."

Nos. 611 to 625 are a series of remarkably beautiful capitals, perfect specimens of Early English work of the best period.

In the corridor may be noticed (No. 643) a casting of an iron grating, having nail heads at its intersections, a good specimen of its class; also to 649, seven very fine specimens of Norman wall diapers in relief, taken from the nave of Rochester cathedral. In vault No. 4 is a composition, life-size (No. 712), of Christ appearing to Mary Magdalene in the garden; and in the same vault are casts (Nos. 734 to 745 inclusive) from the twenty-four medallions which

. . . "ornament the sides and soffites of the middle range of windows in the north

transept of Westminster Abbey. They were doubtless intended to represent the angelic host or heavenly choir praising the Almighty; most of them have a circular border, with foliage behind, but a few have rectangular borders with semicircular projections at the sides. The angels are all in different attitudes, and some are playing on musical instruments; they are carved in freestone, and display great elegance and simplicity of design, and remarkable boldness of relief, and are also curious for the great variety of musical instruments they exhibit.

"No. 868. Three Scrolls of remarkably bold undercut tracery.

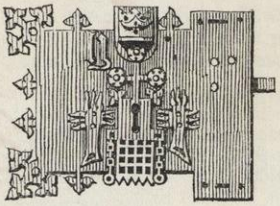
"No. 869. Foliage, surrounding two vesica-shaped recesses, containing seated figures in full relief, the one reading a book, and the other with a scroll. This may fairly be considered as one of the most elegant and finished examples of early English decoration in existence. It is difficult to conceive anything more graceful than the arrangement of the various branches, or more carefully modelled than every portion of it."

The above were taken from the doorway adjoining the Chapter House at Westminster.

"No. 870. Three rich continuous scrolls, of similar foliage with the surrounding moulding, from the Chapter House, Westminster."

Among the specimens of metal-work worthy of notice in the first gallery are the following:—

No. 1390, a very fine Steel Lock, having the badges, and one of the initials remaining, of Henry VIII.; from Hever Castle, Kent.



No. 1398, a very elegant Lantern, brought from Seville, in Spain; of perforated and stamped brass, suspended by three chains, &c. Our engraving represents its general design.

In the recesses and passages leading to the Brocas room are squeezes from many of the finest monuments and tombs in the country, excellent studies both for the antiquary and sculptor; at the same time we cannot but regret that the surfaces of the originals have not been more strictly preserved.

In conclusion, we would insist on the advantages which facilities for visiting such collections as the above would afford to the student in architecture, sculpture, and all branches of decoration. There is scarcely a manufacturer or designer who would not be benefited by possessing a familiar knowledge of such works as are here brought together. Should the proprietors fail in their endeavours to induce the Government to purchase the collection, they will be driven to scatter it by public auction.

JUDICIOUS CONTRASTS AND BALANCE OF QUANTITIES OF COLOUR.

A SUCCESSFUL example of attention to these essential principles is afforded by the present calico print, produced at the works of Gros Odier and Co., and those who agree in our views may procure it at Messrs. Stratton & Faulding's, Coventry Street, London. We find in this specimen that several strong, bright, and very positive colours have been used; but this has been done so

judiciously in respect both to juxtaposition and the introduction of relative quantities, that a very proper subordination of all to one another has been the result. One proof of this is obtained by placing the pattern at a distance, when it is found that there is a flat equal tone of general colouring, and no blotches to destroy shadows, which is a point of importance in all draperies.

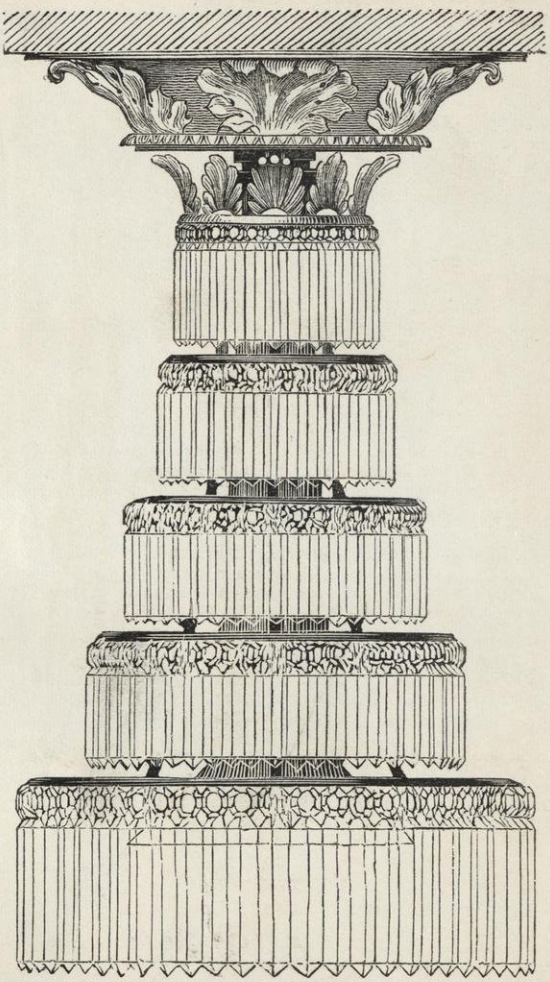
List of New Manufactures.

Useful and Ornamental.

[On the same principle as Literary Journals give a list of new publications issued weekly, so we here afford to manufacturers, &c., the opportunity of announcing the novelties they bring forward, accompanied with such brief remarks as will be strictly explanatory; our readers will bear in mind, that the statements under these circumstances are made on the responsibility of the producers.]

Horatio Carter's Patented Improvements in Gas Burners and Gas Chandeliers.—The principle of this invention is, first, the construction of gas-burners with as many flames in the same place and concentric to each other as its size will permit, the rings being so placed as to allow a sufficient quantity of air to pass on each side of

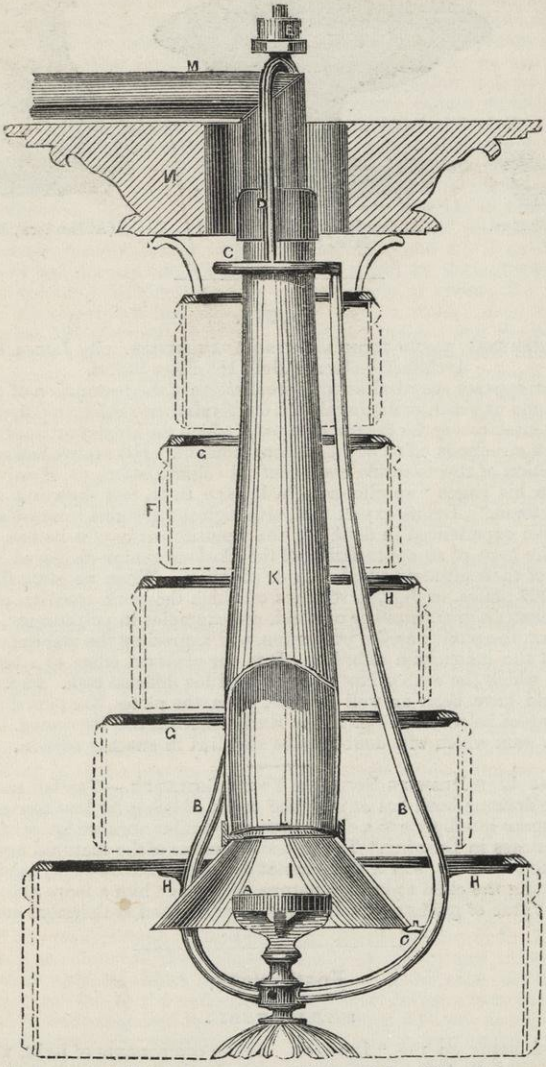
Fig. 1.



the flame as will insure perfect combustion, without lowering its temperature. Fig. 1 represents a cut-glass chandelier illuminated with a concentric ring burner. Fig. 2 a vertical section of the same. This description of chandelier Mr. Carter considers serves to keep the air surrounding the burner at a uniform heat, thereby protecting the glass chimneys from fracture by sudden changes of temperature.

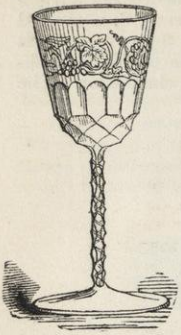
A A, fig. 2, is a three-ring concentric burner: these rings have three supply channels in the arms to insure a uniform supply of gas. The burner A is supported in a triple pendent, B B. The upper part of the pendent terminates in a ring, C, supported by two branch pipes, DD, from a ball and socket, F, through which the supply of gas is admitted. The glass drops are supported by rings, G G. These drops are sufficiently close to prevent any concentrated rays passing beyond the chandelier. The

Fig. 2.



burner A A is surrounded by a concave deflector, I I. The chimney, K, for chandeliers the patentee prefers to have made of ground-glass, with a transparent cone. To produce perfect combustion of the gas, the flame is compressed by causing the whole to pass through an opening of less diameter than the flame, a ring of talc or other material capable of resisting the heat being introduced, and situated in all cases at the top of the flame. The additional advantages possessed by this description of gas chandelier is, that one burner of any required size may be made to light the largest room, while the heat generated by it may be made available for producing ventilation.

Cut Wine Glass, with Venetian Stem.



(At Mortlock's, Oxford Street.)

Black Glass Tazza, Enamelled.

(At Cundall and Addey's, Old Bond Street.)

Parian Jug.

(At Sanders', High Holborn.)

Books.

GOTHIC ORNAMENTS, TAKEN FROM EXISTING AUTHORITIES. By James K. Colling, Architect.—George Bell, 186 Fleet Street.

OUR author appears sceptical as to the realisation of the restoration of that architectural taste among us which so distinguished our forefathers, either in polychromatic design or ornamental tracery, for the furtherance of which the literary artist of every branch is making such strenuous effort at the present moment. His motive is a mournful one for the production of the scientific and beautiful volume before us, if only undertaken to preserve in his pages "specimens of a bygone taste, fast decaying and unlikely ever to be restored." Let us expect that, although the greatest interest and pleasure must have been experienced in detailing the beautiful examples he has given us, he has not lost the hope of an appreciation of the glorious genius displayed in them, and consequently of their ultimate adaptation or adoption. When we state that there are no less than 207 plates, in the two volumes of which the work consists, of the utmost variety and beauty, a great number of which are examples in polychrome, enriched by gold and colour, the public, as the profession, will appreciate the amount of the labour employed and the instruction afforded. It is our pleasant office to attest the ability and care with which the author has accomplished his difficult task. In a work of this nature, it would have been as well to note, upon the plates, the period to which the different examples belong, whether in the Early English, the Decorated, or Perpendicular styles, a want which will doubtless be supplied in another edition.

THE BROAD-LINE DRAWING-BOOK FOR YOUNG CHILDREN.—Cundall and Addey.

THIS little drawing-book has at least the merit of being far less conventional, and therefore far more intelligible to a child, than any similar work we know of, except Mr. Grant's "Exercises in Drawing." The off-hand touches of the matured artist are quite a short-hand to beginners, which they cannot decipher, and are really misleading. Instead of directing the child to imitate nature, they make him a mere mannerist. This book has the virtue of guiding in a different direction, and is therefore commendable.

Institutions.

SOCIETY OF ARTS.

12th Feb.—A paper on the "Laws of Colours as applied to the Arrangement of Coloured Fabrics in the Great Exhibition of 1851," was read by F. C. Calvert, F.C.S.

To understand the laws of colour it is necessary to know the composition of light. Newton was the first person who gave to the world any statement relative to the components of light, which he said consisted of seven colours—red, orange, yellow, green, blue, indigo, and violet. But it is now distinctly proved that four of those seven colours are produced by various proportions and combinations of the three colours now known as the primitive colours, viz., red, blue, and yellow. Several proofs can be given that light

is composed of three colours only. One of the most simple consists in placing pieces of blue, red, and yellow papers on a circular disc, and rotating it rapidly, the effect to the eye being to produce a disc of white light. If, therefore, the eye can be deceived so readily while the disc travels at so slow a rate, what must necessarily be the case when it is remembered that light proceeds at the rate of 190,000 miles per second? The rapidity with which light travels is such that the eye is not able to perceive either the blue, red, or yellow, the sensitiveness of the nerves of the retina not being rapid enough to receive and convey successively to the mind the three or seven colours of which the light is composed.

Before entering into the laws of colour, Mr. Calvert briefly stated what scientific minds had devoted attention to the laws of colours. Buffon followed Newton, and his researches had special reference to what Mr. Chevreul, of whom Mr. Calvert was a pupil, had called the successive contrasts of colours. Father Scherffer, a monk, also wrote on the laws of colour. Goethe, the poet, also. Count Romford, a Scotch philosopher, about the end of the 18th century published several memoirs on the laws of colour. He explained very satisfactorily the "successive" contrast, and arrived at some insight into the "simultaneous" one; still he did not lay down its real laws. Prieur, Leblanc, Harris, and Field, were also writers on this subject. They did not arrive at the definite laws of colour, because they had not divided those laws into successive, simultaneous, and mixed contrasts. These form the basis of the practical laws of colour, and the honour of their discovery is due to Mr. Chevreul.

The motive why a surface appears white or brilliant is, that a portion of the light which falls on its surface is reflected on the retina, and in such a quantity as gives to the surface a brilliant aspect; whilst in plain white surfaces, the rays of light being diffused in all directions, and a small portion only arriving to the eye, the surface does not appear brilliant. When rays of light, instead of being reflected, are absorbed, they appear black; therefore white and black are not colours, as they are due to the reflection or absorption of undecomposed light. It is easy to understand why a surface appears to us to be blue; that is due to the property which the surface has to reflect only blue rays, whilst it absorbs the yellow and red rays; and if a certain portion of light is reflected with one of the coloured rays, it will decrease its intensity: thus red rays with white ones produce pink. On the contrary, if a quantity of undecomposed light is absorbed, black is produced, which, by tarnishing the colour and making it appear darker, generates dark reds, blues, or yellows. The secondary colours are produced by one of the primitive colours being absorbed and the two others reflected; for example, if red be absorbed, and blue and yellow reflected, the surface appears green. There are two reasons why we can never see a perfect blue, yellow, red, &c. The first is, that surfaces cannot entirely absorb one or two rays and reflect the others. The second is, that when the retina receives the impression of one colour, immediately its complementary colour is generated: thus, if a blue circle is placed on a perfectly grey surface, an orange hue will be perceived round it; if an orange circle, round it will be noticed a bluish tint; if a red circle, a green; if a greenish-yellow circle, a violet; if an orange-yellow circle, an indigo; and *vice versâ*.

The next point was that of the different contrasts of colours. The "successive" contrast has long been known; and it consists in the fact, that if you look steadfastly for a few minutes on a red surface fixed on a white sheet of paper, and then carry your eye to another white sheet, you will perceive on it not a red but a green one; if green, red; if purple, yellow; if blue, orange. The "simultaneous" contrast is the most interesting and useful to be acquainted with. When two coloured surfaces are in juxtaposition, they mutually influence each other,—favourably, if harmonising colours, or in a contrary manner if discordant; and in such proportion in either case as to be in exact ratio with the quantity of complementary colour which is generated in our eye: for example, if two half sheets of plain tint-paper—one dark-green, the other red—are placed side by side on a grey piece of cloth, the colours will mutually improve in consequence of the green generated by the red surface adding itself to the green of the juxtaposed surface, thus increasing its intensity, the green in its turn augmenting the beauty of the red. This effect can easily be appreciated if two other pieces of paper of the same colours are placed at a short distance from their corresponding influenced ones, as below:

RED RED GREEN GREEN

It is not sufficient to place complementary colours side by side to produce harmony of colour, the respective intensities having a most decided influence: thus pink and light-green agree—red and dark-green also; but light-green and dark-red, pink and dark-green, do not;

therefore to obtain the maximum of effect and perfect harmony the following colours must be placed side by side, taking into account their exact intensity of shade and tint:—

HARMONISING COLOURS.

Primitive Colours.	*Secondary Colours.*
Red	Green — Light-blue, Yellow, Red.
Blue	Orange—Red, Yellow, Blue.
Yellow orange...	Indigo — Blue, Red, Yellow.
Greenish yellow.	Violet—Red, Blue, Yellow.
Black...	White—Yellow, Blue, Red.

If respect is not paid to the arrangement of colours according to the above diagram, instead of colours mutually improving each other, they will lose in beauty: thus, if blue and purple are placed side by side, the blue throwing its complementary colour, orange, upon the purple, will give it a faded appearance; and the blue receiving the orange-yellow of the purple, will assume a greenish tinge. The same may be said of yellow and red, if placed in juxtaposition: the red, by throwing its complementary colour, green, on the yellow, communicates to it a greenish tinge; the yellow, by throwing its purple hue, imparts to the red a disagreeable purple appearance. It is of importance that every one should be acquainted with the laws of colour who intends to display coloured goods at the Exhibition, and Mr. Calvert clearly demonstrated, by positive examples, that if these laws are neglected, not only will the labour expended by the manufacturer to produce on a given piece of goods the greatest effect possible be neutralised, but perhaps lost; but also, if the goods of one manufacturer are placed injudiciously near those of another, they will decrease the brilliancy of the colour displayed. These effects are not only produced by highly-coloured surfaces, but also by those where the colours are pale, as, for example, in light-mixed greens or light-blues with buffs. The contrast gives the reason why a brilliant colour should never be looked at for any length of time if its true tint or brilliancy is to be appreciated; for if a person look, for example, at a piece of red cloth for a few minutes, green, its complementary colour, is generated in the eye, and adding itself to a portion of the red, produces black, which tarnishes the beauty of the red. This contrast explains why the shade of a colour may be modified according to the colour which the eye has previously looked at, either favourably or otherwise. An example of the first instance is noticed when the eye first looks to a yellow surface and then to a purple one; and as exemplifying the second case, looking at a blue and then at a purple. Therefore it was to be hoped that the Exhibitors would be cautious as regards the colours they employed to place their goods on or surround them by; and those visitors who wish to appreciate the degree of beauty of a given colour, should remember that the eye is influenced by previously looking at other coloured materials. Mr. Calvert also shewed that black and white surfaces assume different hues according to the colours placed in juxtaposition with them: for example, black acquires an orange or purple tint if the colours placed beside it are blue or orange; these effects can be overcome, as well as that of any colour assuming the shade thrown on it by the colour placed near it, by giving to the influenced colour a shade of colour similar to that influencing it. To prevent black becoming orange by its contact with blue, it is merely necessary that the black should be blued, and in such proportion that the amount of blue will neutralise the orange thrown on it by influence. As an instance: to prevent a grey design acquiring a pinkish shade through working it with green, give the grey a greenish hue, which, by neutralising the pink, generates white light, and thus preserves the grey.

The discussion on the paper was resumed on the 19th.

SCHOOLS OF DESIGN.

Worcester is likely, at last, to have its School of Design. Lord Ward has promised an annuity of 25*l.*, with a donation of 100*l.* and a public meeting has been held to support the proposal.—We are glad to hear that the Government has granted the use of Marlborough House, for the purpose of exhibiting the works of the students of the Head and Branch Schools. The Exhibition will open in March.

School of Design, Manchester.—The *Manchester Guardian* thus comments upon the state of the School's affairs at Manchester. Of course it will be said nobody is to blame:—"We forget how long it is since we urged on the public the modest claims of the Manchester School of Design on their support. When the last annual *soirée* of the School took place at Christmas, a very unsatisfactory state of the funds was reported; but we

did not refer to the matter at that time, because, chiefly, the pecuniary requirements then announced seemed so small, that we imagined they would be met as soon as the public were made aware of their existence. It is melancholy to find that circulars are still going round the town, and members of the Council still canvassing from house to house, to procure so trifling a meed of public support as that which this valuable institution sues for. Its annual expenses amount in all to about 1200*l.*, of which Government contributes one-half, and the fees of the pupils make at present another quarter, leaving about 300*l.* a-year to be raised by subscriptions among the inhabitants of Manchester. Is it not too bad that any difficulty should be encountered in accomplishing this purpose? Considering the immense advantages that must accrue from the cultivation of taste in this part of the country, it is one of the most eccentric instances of penny-wisdom ever exhibited by a liberal community. Mr. Henry Drummond's sarcasms, as received with laughter by the House of Commons, are still ringing in our ears; and we happen to know that the quarterly remittance rarely comes down from Government unaccompanied by an expression of surprise that Manchester, of all places in the world, should beg 150*l.* a quarter for the encouragement of its staple trade. A popular fallacy seems to prevail, that it is only the printers of this neighbourhood who are interested in the cultivation of the art of design. That they are most directly interested in it is true, since at least 30,000*l.* of their money goes annually to encourage the practice of the art in Paris; but it is manifest, that, in proportion as manufacturers and all other classes are dependent upon the printers, so are they interested in whatever contributes to the ready and extended sale of the printers' goods. However, the Exhibition is coming, and we shall learn something there, at that hard school which experience keeps open for a certain order of pupils."

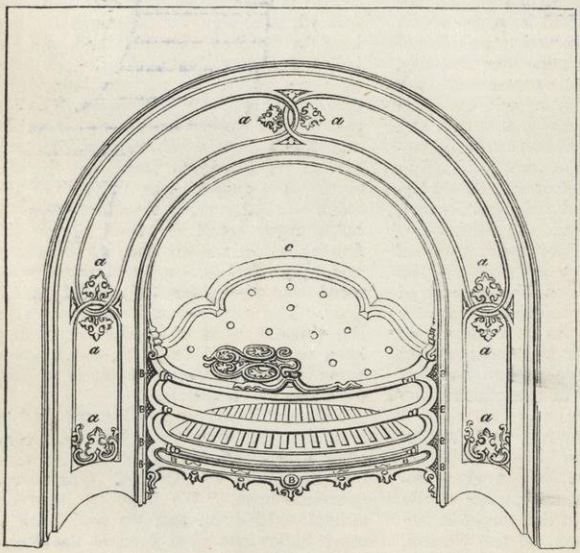
Miscellaneous.

The Queen's Private Visit to the building of the Exhibition on the 19th, with Prince Albert and five of the royal children, seemed to be most heartily enjoyed. Her Majesty was most animated and inquiring, going among the counters, examining the plans, scrutinising the construction, &c. It had been previously arranged by Mr. Cubitt that a trial should be made of the gallery floor on that day, and before the scientific experiment took place, some three hundred workmen crossed, recrossed, danced, stamped, and did everything they could to test the security of the floor, to the great satisfaction of the Queen and the Prince. When the royal visitors had left, Messrs. Brunel, Locke, Maudslay, Field, and others, assembled to witness the experiment of marching over the floor a company of the Royal Engineers. But the measured tread of the soldiers produced no greater impression than the rough stamping of the workmen. The floor stood perfectly firm, and it was the general opinion that a ball might be held in the galleries, so secure was it.

The Ladies' Carpet for the Exhibition of 1851 has been shewn at the Society of Arts, and the lady workers resolved to offer it for acceptance of the Queen. The origin of the carpet is due to Mr. W. B. Simpson, of the Strand, who suggested that a carpet should be made by ladies, to prove the possibility of equalling the looms of the Continent, and the means of easily employing the thousands of educated women on whom the hand of unexpected adversity presses, and for whom it is so difficult at present to procure an honourable livelihood. With these views a committee was formed, a design for a carpet 30 feet long by 20 feet wide obtained, and 150 ladies undertook to work it, each lady taking a piece, the pattern being properly prepared by Mr. Simpson. The 150 pieces were worked and joined together, and the result is certainly satisfactory. Mr. J. W. Papworth furnished the design. His purpose was to produce the effect of a flat surface, no object whatever being represented in relief, except the flowers, which are all the size of nature, and may fairly be supposed to be scattered over the surface of a richly inlaid floor. The entire number of squares in the canvass upon which the carpet has been worked is 17,340,000, which gives some idea of the labour required to produce this single article.

Belfast Exhibition.—We are glad to hear that this Exhibition has been considered very satisfactory, both as to visitors and sales of pictures. Our correspondent says, "We hope to have an annual exhibition, and we anticipate a much better one next year, as the English artists will be more ready to send, this being so successful."

PIRACY OF A REGISTERED DESIGN.—*24th January*, 1851, a case of importance to manufacturers, and which attracted much interest, was heard at the Birmingham County Court, before L. Trafford, Esq. The plaintiffs were the Coalbrookdale Company, and the defendant Mr. John Page, ironfounder, of Aston Road, Birmingham. The action was brought to recover the sum of 30*l.* as a penalty for an alleged fraudulent imitation by the defendant of a fire-grate registered by the Coalbrookdale Company, according to the 5th and 6th Victoria, cap. 100. On behalf of the plaintiffs, Mr. Charles Crookes, the manager, Mr. Robert Eyre, traveller (who, in proof of the estimation in which this particular grate of the Company's was held, said that upwards of 4600 had been sold in fifteen months), and John Cowper, pattern-maker, all in the employ of the Company, proved that the grates were precisely similar with the exception that the leafage used in the ornamental part had been altered, marked *a a*, and that the grates made by the defendant were much inferior to those made by the Company. Two defects in the original model of the Company's grate were also apparent in that of the defendant's, and all the witnesses agreed in their judgment that it was a fraudulent imitation. Mr. Page, the defendant, in his evidence stated that Mr. Lenton sent him a grate from Coventry, and wished him to cast six like it, and he (Lenton) would bear him harmless from all legal consequences, if the design was registered. He (Page) refused to do this, but subsequently made a model from old ornaments and models in his own possession, and thus executed Mr. Lenton's order. On his cross-examination Mr. Page admitted that he went to Mr. Lenton's shop at Coventry, that he took the order for the six grates there, and that a grate was then shewn him as a pattern; but he did not see that it was a registered design, nor was he told that it was one made by the plaintiffs; that he did not know why Mr. Lenton had said he would protect him from the consequences of any infringement of a registered design, if the grate sent should be of that description, but when the pattern came to his factory he (Mr. Page) did not see it was a registered one, although the register mark was plain on the plaintiffs' grate. He further said there would be slight shrinking in a casting made from another grate. He did not recollect how long he kept the pattern grate, nor whether he did not retain it until Mr. Lenton's order was completed. Did not know why, being ordered to make a common grate by Lenton at Coventry, he should require this grate, the registered one, at his manufactory in Birmingham. Mr. Page finally admitted he told the plaintiffs' traveller that he did make the grates for Lenton as much like the registered one as he could. The learned judge said the grate made by the defendant was clearly a fraudulent imitation, and gave a verdict for plaintiffs—damages 10*l.* and costs.



We engrave the original grate. The parts marked *a a* were not pirated, but a worse ornament substituted. It was proved that the back (*c*) must have been cast from the original.

MACHINE PRINTED PAPER-HANGING,

Registered Design,

Manufactured by John Woollams and Co.,
69 Marylebone Lane, Oxford Street.

JOURNAL OF DESIGN. March, 1851.

Original Papers.

EXHIBITION OF THE WORKS OF THE GOVERNMENT SCHOOLS OF DESIGN, MARLBOROUGH HOUSE, PALL MALL.

THIS Exhibition, if it were ten times less satisfactory than it really is, would afford a triumphant testimony to the soundness of the principles which have been always consistently advocated in these pages as necessary to secure efficient management to the Schools of Design. Among other reforms, we have always contended that the Schools of Design should be compelled to afford public evidence of their *works:* and that, like all other mundane institutions, by their works they must be judged. We know full well the unpopularity which our imperative tone on this point of principle of management has incurred from the idle and incompetent, but we have now our triumph. It has always been said by those who would shirk this test, "See how great the general influence of the Schools is,"—"See how the state of design generally has been improved,"—"Look to its palpable influence on manufactures,"—and suchlike vague platitudes, which might quite as fairly be contradicted as asserted. When we contended that we wanted proofs of these assertions; that we disbelieved them without proofs; that we wanted to see the *works* of the Schools, both of masters and pupils; what a terrible outcry was raised! and we were always told that to demand "designs" from the Schools was "a vulgar and pernicious error," and that "exhibitions of works were misleading," and so on. In spite of this balderdash, intoned with a pompous official twang which has now lost its influence, the management of the Schools of Design has adopted "our erroneous and pernicious views;" it has been beguiled into establishing Exhibitions of the Works of the students; and we have now the second of the series, which, with all its deficiencies and all the obvious bolstering with which it has been produced in certain quarters, will be, if we are not greatly mistaken, a most important means of enlarging the basis of the Schools in public estimation. In last year's Exhibition we had only the works of the Head School; this year we have those of the Provincial Schools besides. Next year, or the year after, we venture to prophesy that we shall have not merely drawings from the pupils, but demonstrations of the ability of the masters themselves. We can imagine the indignation and contempt that this prophecy will meet with from those masters who have made scarcely any sign that they are able even to draw decently, much less model or "design." But so sure as we have now obtained pupils' works, so shall we have in time masters' works. And bitter as the draught may be to some, we recommend the masters to prepare themselves to take it, or cease to be masters at all.

This Exhibition tends to strengthen the deep interest which, from the first commencement of this JOURNAL, we have taken in these Schools, and gives one of the best assurances that in time we may look to them for the improvement of design as connected with manufacture, and the formation of a skilful body of art-workmen capable of carrying good design into execution. It is well known to our readers, that our efforts have been greatly instrumental in forwarding those changes made in the constitution and management of these Schools, after the late inquiry by a committee of the House of Commons, and it is to these changes they are now in an effective position to make this public exhibition of their labours. It is, therefore, with pride that we contrast the state of things, when masters and pupils were disputing to whom the merit of some single insignificant work should belong, with the present appearance of the Schools before the world offering designs applicable to manufactures amounting to several hundred works.

We may observe, that this is the first united exhibition of the works of the Head and Branch Schools: the period is well-timed for it, since it will mark the state of their teaching at the opening of that great Exhibition which is to lay before us at one view the ornamental art of the world, and which we may expect to give a vast stimulus to every species of decorative art, and to make an impression on the next annual exposition of School labours. We think,

moreover, that the place granted by the Government for this united Exhibition is significant of its having arrived at a higher sense of the importance of the Schools, and we accept it as ominous that proper accommodation will soon be provided for the Head School.

The first obvious use of the Exhibition is, that it enables us to see all the Schools in juxtaposition with one another; to contrast their methods of teaching; to estimate their aim and intention; and to compare them with one another and with the Head School. Such a review is of immense value; it puts aside at once the froth and parade of provincial speech-making and local journalism, and lays before us matter-of-fact evidence, which enables us to see them in a far different light in works than in words. Some Schools that have modestly and silently progressed, shew here gracefully and in a good light, whilst some, where the talk was loud, fall deep into the shade. Even a cursory view of such an Exhibition does more to enlighten us than volumes of inspectors' reports, since these often "darken counsel with words without knowledge," and are written far more to make men at ease with themselves than to advance honestly the best interests of the Schools,—on the Hudsonian principle "of making things comfortable."

Before commencing our examination, we must say a few words on the general arrangement. On the whole this seems fair and satisfactory, giving each School and each department a due opportunity of displaying its labours, and putting the best works of each in situations to command attention; but it may be regretted, perhaps, that in hanging the works of the Head School, at least, they were not arranged according to the plan of instruction, thereby enabling us to commence in room A. with the works of its elementary school, and gradually to arrive in due order at the results of that teaching in original design in room D. We are quite aware of the novelty of the duty imposed upon the arrangers, and of the many difficulties occasioned by necessary taste and conflicting claims; but it is certainly a defect that we commence in room A. with the very advanced study of the figure, modelling, and architecture, and only after having passed through all the rooms, both of the Head and Branch Schools, arrive at the results of the elementary teaching in room K., on the way out, be it observed, and in a narrow gallery; a place where, perhaps, few will pause, but one of deep interest to us, since we are quite assured that where the foundation is not satisfactorily and honestly raised, the superstructure will be faulty and unsound,—a place, therefore, to which we gave our best attention, in order to test this early teaching and its after progress. With this great exception, we are inclined to think the arrangement of the works judicious and satisfactory, since the Head School in its two departments, male and female, may be compared, and both of these, as a whole, examined in contrast with the general labours of the provincial branches.

A few remarks are made at the commencement of the catalogue which we consider interesting and highly significant, and furnish a comparison with the reports called for by Mr. Milner Gibson on the then state of the Schools. The catalogue remarks:—

"The system of Schools of Design under Government superintendence comprises the Head School in Somerset House, containing 480 students, and 18 Branch Schools,—in Spitalfields, Manchester, Birmingham, Coventry, Nottingham, Norwich, Sheffield, Stoke, Hanley, Leeds, York, Huddersfield, Newcastle, Glasgow, Paisley, Dublin, Belfast, and Cork,—containing 3000 students: total, 3480.

Number of specimens of drawing, painting, and modelling sent from the 18 Branch Schools for inspection	2183
Of which the number exhibited is	1008
Number of ditto sent from the Head School for inspection	7571
Of which the number exhibited is	2234
From the 18 Branch Schools the number of elementary designs exhibited is	26
Ditto of applied designs (of which 104 are from Spitalfields)	214
From the Head School, number of elementary designs	81
Ditto of applied designs	427"

On comparing this with the House of Commons' report we find progress in

all directions, and in some progress of a very satisfactory nature. First, three important cities have been added to the list of localities where Branch Schools are established, viz., Dublin, Cork, and Belfast. Then, again, we find a great increase in the labours of the several Schools, for while last year the 15 Schools then in operation sent up for inspection only 856 works, this year the 18 schools have submitted 2183 works, more than double that average from each. The two departments of the Head School also, which last year produced 6642 works, have this season sent for inspection 7571, increasing its labours by nearly 1000 works. We are far from implying success merely from the number of productions, but this comparison will at least serve to shew the exertions and industry of all and several. We hereby perceive that the Head School still maintains its position in emulation with the united Schools in the provinces even with the three new ones which have been added to their number. But there is another point on which we are inclined to lay great stress, since here we think must be the test of the powers and ultimate success of such Schools, that is, their efforts in design, applicable to our various national manufactures. It is here that the great Exhibition in Hyde Park will be likely to lay bare our nakedness, and thereby we trust to open our eyes to our wants, and to call the attention of our great manufacturers more directly to the commercial value of the Schools; and, however small their efforts and poor their endeavours in original design, if they only shew promise of future results (and we at once and most unreservedly allow they do so), they shall have the best support we can give them. The tables quoted above support us in our hopes of such future results; thus, for instance, last year the whole of the Provincial Schools, including their strong coadjutor Spitalfields, produced but 81 attempts at original design, and the Head School in its two departments 345; this year, however, the 18 Branch Schools exhibit 214 designs, including the 105 contributed by their effective ally Spitalfields, and the two departments of the Head School 427 designs: thus between 200 or 300 designs are exhibited by Schools which their inspector not long back stigmatised as "mere drawing-schools," and between 400 and 500, many of great labour and much promise, from the Head School, in which two or three years ago the masters, director, and students, were disputing who should father the merit of translating St. George and the Dragon from a crown-piece to the centre of a dinner-plate!

We proceed to individual criticisms, more, however, upon the methods of study pursued, and results, than upon individual labours, however excellent. And first in place, though last in the order of arrangement, we must advert to the elementary teaching in the male department of the Head School, to which, after a careful examination, we are inclined to accord a full share of praise both to the methods adopted to give the student a power of hand and correct eye for delineating by a pure and simple line the ornamental forms set before him, and the conscientious and earnest manner in which these methods have been carried out. The results of this careful grounding are amply apparent in room B., one of the most interesting to those who really enter into the merits of the School, since herein are further developed these powers of the pupil, which have been awakened in the elementary department. It seems almost invidious to particularise where the excellence is so evenly distributed, but E. Ireland, M. Wezzell, T. Munday, and C. Kirkley, are names highly successful here; and again, although their course in the School must have been a short one, honourably reappearing in other classes. After room B. we presume the studies of the figure displayed in room A. are entered upon by the student, and the method here seems an excellent one; the figure being outlined from the antique statue, the student proceeds to draw within the outline the form of the bony structure from an actual skeleton, making the processes of the bones correspond with their expression in the statue itself; in a second study he is required to mark the relative position of the principal muscles. A ready knowledge of the figure and a facile power of delineating it in various actions and attitudes, without the assistance to be derived from the living subject, is often a necessary qualification to the decorative designer in several departments; and for the manufacturing modeller and the chaser a

knowledge of the structure of the limbs is most desirable. The same mode of study is applied to modelled forms, and even to the analysis of drawings from the living subject. We find in this room, moreover, evidences that geometry and perspective, and the details of architecture, are taught as the groundwork of design.

In the next room, C., the studies of colour are placed, all the different technical means being evidently taught the student. We have some skilful things here, among them a group, in black and white, of the Gladiator and fighting boys, struck us as both well drawn and painted, and some of the flowers are pleasing and well grouped. We pass slightly over this room, as containing little that is novel in method or produce, to room D., containing the results in original design.

We were at some loss on entering this room to understand the distinction in the catalogues between "Elementary Studies in Design" and "Design" generally; but a sheet of studies on one of the screens, the work of M. Wezzell (No. 161), was explained to us, and the system appears worthy of notice as an excellent method of developing the inventive powers of the student. Some geometrical form, as the lozenge, the hexagon, &c., is given to the class, and each student is required to distribute agreeably within it some leaf-sprig or purely ornamental form, which is also given as the motive of study. These studies progress from a single tint on a ground to several tints, and finally to coloured combinations; and they excellently prepare the student for designing for many fabrics, as carpets, wall papers, &c.: what succeeds the next in rotation, a design for paper by the same student, as the sheet of elementary studies in design, No. 162, hangs over these last, and will report progress for him. We are obliged to pass, without individual mention, the many clever designs for paper-hangings, laces, druggets, and china, contained in this room, which, however, we hope neither the public nor the manufacturers will be inclined to do, but we *must* notice a beautifully-modelled invention for a candelabrum by — Wells, sen., since it enables us to remark on its constructive excellence also, which, we regret to say, is wanting in some of the other modelled designs.

The works of the female department appear rather confused by crowded hanging: the male school is emulously rivalled here, and the fancy and taste displayed, especially in designs for female dresses, are deserving of high praise, as are also the studies of flowers and fruits, many of which are beautifully painted and arranged with ladylike taste and skill. The class for elementary study of design does not seem to be used here, which it might be with some advantage, since there is a want of more *ornamental* severity in some of the carpet and other designs.

The Branch Schools commence with Glasgow first on the list. We are at once struck on entering this room at the changed mode of study; in both departments of the Head School studies of foliage and flowers abound, here they at once cease: good taste, however, and completeness are very apparent in the labours of this School. The drawings of ornament and paintings in tempera are clever, and in the designs we are reminded of many well-known works. What the Government inspector calls "making a show" has, we suspect, a little to do with some of the works exhibited, since we happened to cast our eye on a design for a paper-hanging by J. McCulloch, and some sheets of "ideas" most likely by the same designer, who, if he has increased *his taste* in the School, has evidently formed his practice out of it, since he has belonged to it but "*one* session!"

Spitalfields is principally noticeable for the number of its clever designs for silk goods, nearly a moiety of those from the whole of the Branch Schools. Birmingham, which ought to be a successful School from its locality, does not shine here: its drawings of the figure and of ornament, and its bust modelling, are respectable, but it has little to shew in design, and has very little to mark it as a School of *ornament* at all. One small room holds the works from Leeds, Nottingham, and Cork, the first merely respectable, the two last successful as far as teaching drawing goes. In room H. we have grouped together five

Schools. Dublin, the first catalogued, shews, perhaps from its metropolitan position, more as a school of art than of ornament, and has, moreover, made a figure in the show through those who have not been formed in it; but it looks active and lively, and, with Irishmen as its pupils, will soon make progress; which we doubt not will be the case also with the Belfast School, which has commenced promisingly.

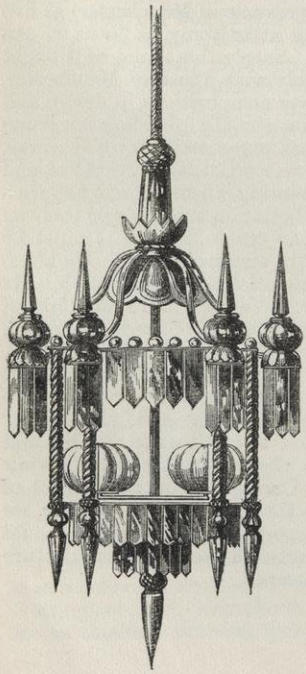
Of Stoke and Hanley we wish that our space would allow us to speak as they deserve: the genuine and careful teaching which they shew in all they undertake is evidenced by some beautiful designs for wine-coolers, wrought out, we presume, by the students. These are worthy of high praise, and shew the end of the care bestowed on the first steps of the pupils in the Schools. The outlines of wild plants are truthful and beautiful. We wish, however, that there had been more painting shewn. We may pass over Paisley, which has been untrue to itself in exhibiting very little, and enter into the last room; and here, first in rank, although not in place, we turn to the Manchester School. It is evident that our remarks have had some weight, and that design for the local manufactures begins, as it ought to do, to obtain a share of attention. This will be found the true course to take, and we shall be happy to see realised, what there is now some prospect of, the Manchester School emulating in design for garment fabrics, the taste and elegance in such designs shewn by the female department of the Head School. It is better late than never, that the skill and knowledge evinced by some of the flower-painters are beginning to be called into active exertion for such an emulation. The School seems to be making progress, although we see here some evidence of the "shewing-off" system. There is a very clever piece of ornamental painting, with "A. Brook, *artist*, nine months in the School," written upon it, and the same name affixed to a group of objects, one of the best exhibited; also a very tasteful design, wherein a lupin was the motive, by a "*designer*" two months in the School. There is no great objection to such works being exhibited. Manchester contrasts favourably with Sheffield, which ought to be a principal School from its local manufactures, the amount of its Government grant, and pretensions before the world; but here we regret to see nothing but careless dirty shading, from figures and casts, by students marked (the very reverse of Manchester) as five and even eight years in the School, the attempts at anatomy, as far as we can see them, being very slight, and *the design none*. Surely this is not as it ought to be. The models, however, compare favourably with those of Manchester, being well understood. Norwich has some clever compositions in design and some good coloured decorations. Coventry seems steadily plodding on, doing little, but doing it tolerably well. Newcastle has some well-executed works, such as would result from the teaching of a clever artist as Mr. Scott is, and has one or two designs, one being for glass-painting, an art connected with the only staple of Newcastle. York comes out better in the struggle than we expected, shews a little in all classes, and in some shines, though it must be confessed that these classes have least to do with ornamental art. Huddersfield, next to Spitalfields and Manchester, produces the most designs, while its elementary works are not of a high character. We pass from this School through a narrow gallery containing the elementary works of the Head School, and on our way out notice a very clever design for a silk hanging, by C. P. Slocombe, grouping together the arms of the kings and queens of England from the Norman conquest, with the arms of the Queen in the centre. We part from the review of these works with a certainty that good seed is very widely sown, which must lead to great results if the culture is steadily and continuously persevered in. We were glad to observe at the private view most of the members who served on the Select Committee on the School of Design. When this Exhibition closes, some of the metropolitan designs, we believe, are to go to the Great Exhibition. We suggest that what remains should be classified, and those likely to be useful in particular seats of manufacture be sent there for the inspection of the manufacturers.

APSLEY PELLATT'S GLASS CHANDELIERS.

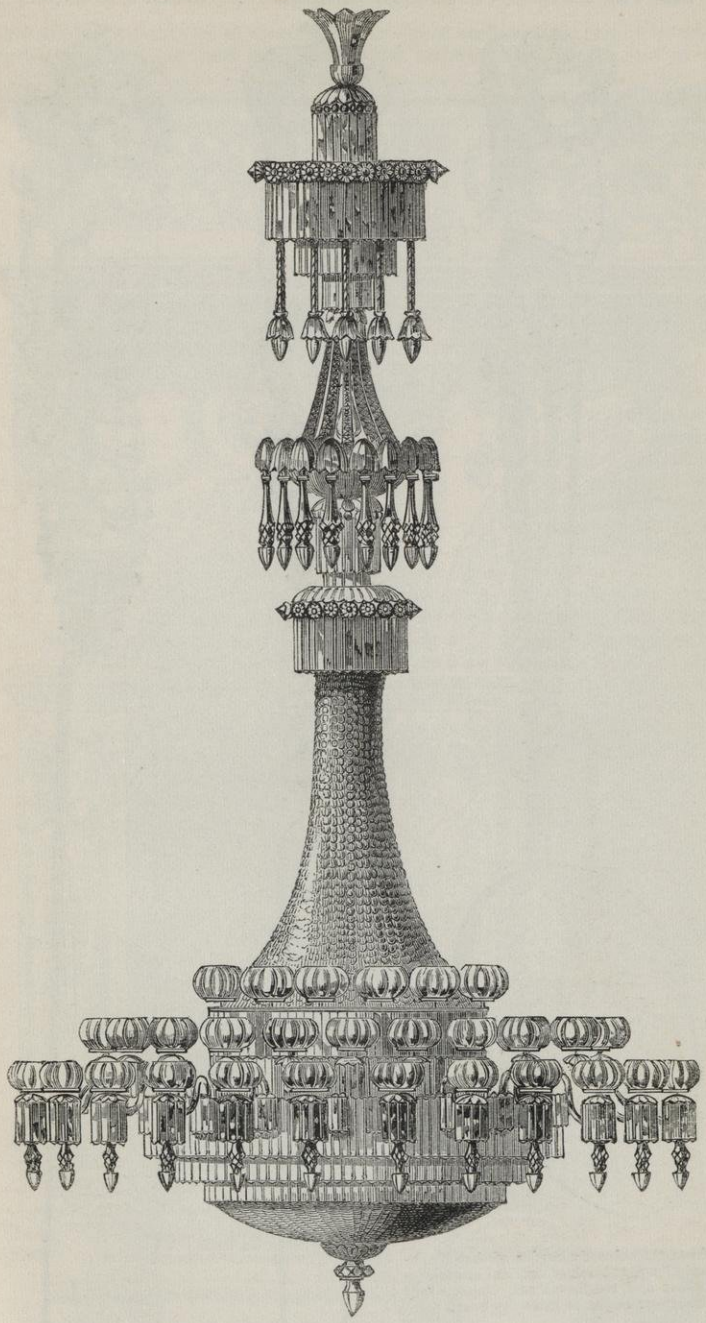
THE applicability of flint-glass for decorative purposes has long been admited, but till within the last few years has not been so extensive in England as it would have been, if the incubus of the Excise-duty had not retarded it. Few manufacturers have directed their attention to the production of more than ordinary decanters or wine-glasses, while a still smaller number have devoted attention to the chemistry of the manufacture. We have hopes that the approaching Exhibition will place before the public many specimens of English manufacture, combining the knowledge of the chemist, the skill of the glass-blower, the talent of the artist and enameller, with the delicacy of finish both of the engraver and the lapidary.

Excepting in a few branches, the British manufacturer has been as far behind his Continental neighbours in the manufacture of the glass itself as in the production of works of art. Till within a comparatively short period, many of the processes employed in the production of ornamental objects, by means of wooden and metal moulds, were unknown, or if known unpractised, partly owing to the peculiar hardness of English glass, partly to the difficulty of finding skilled workmen. We have recently examined some specimens of British manufactured glass, which, both chemically and artistically, do credit to the manufacturers, and are deserving of remark. We allude to the series of glass fittings recently executed for the Pavilion at Brighton.

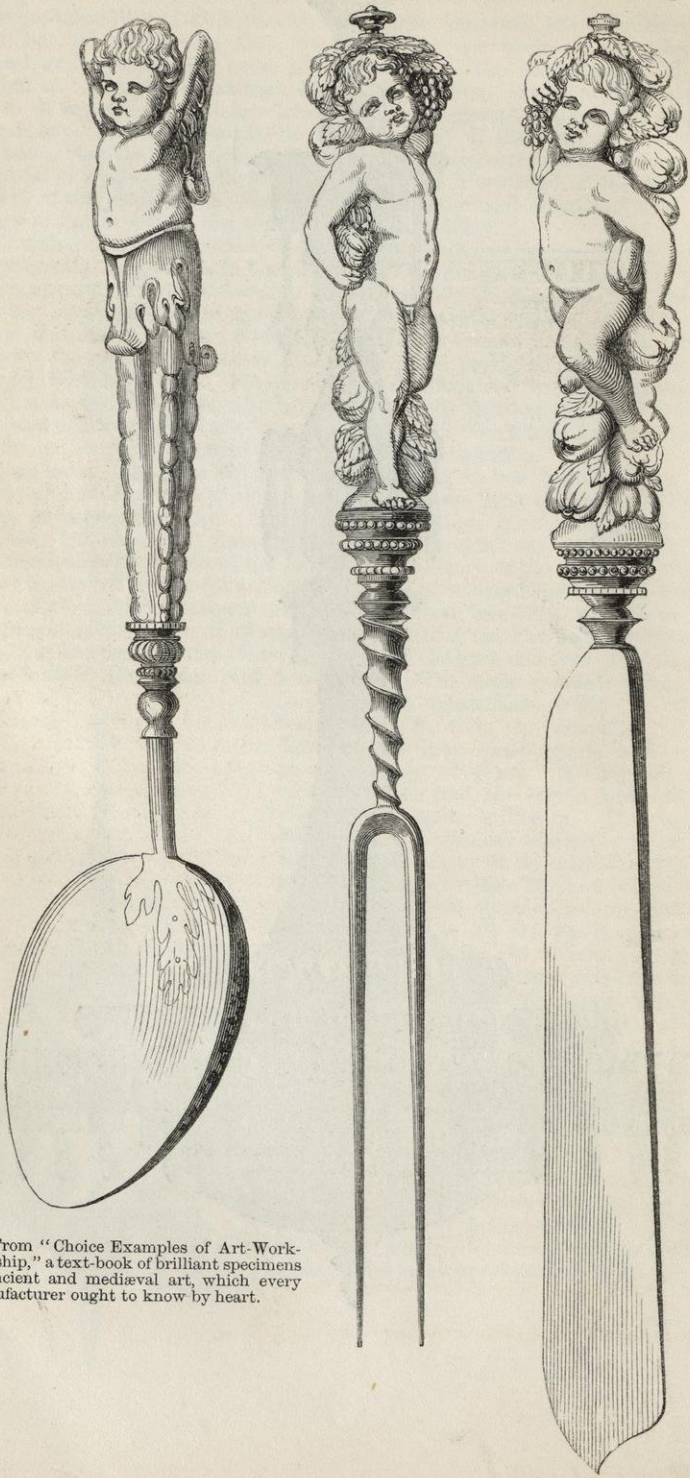
In applying flint-glass to decorative purposes it has hitherto been the practice of manufacturers to combine with the glass large quantities of brass, bronze, or coloured metals. These have, doubtless, given strength to the structure; but where the glass employed was brought into contact with the metal itself, the effect both of the purity and brilliancy of the metal have been entirely destroyed by the refraction of the rays of coloured light. This fundamental error in the treatment of colourless glass has been avoided in the arrangement of the series of fittings recently fixed at the Pavilion at Brighton; throughout the entire series Messrs. Pellatt and Co. have achieved considerable success both in the design and manufacture. The larger woodcut represents the principal chandelier, which is 23 ft. long and 7 ft. 9 in. in diameter: it is lighted with fifty gas-burners, and composed entirely of glass. We see no discord of metal, and the whole presents an effect of prismatic brilliancy. The smaller engraving is a Chinese lantern, one of the series which seems to us well adapted for general use. The entire Pavilion series consists of forty-nine chandeliers, candelabras, &c., containing in all 475 gas-burners, and composed of 35,000 cut drops, besides a large quantity of cut-glass, weighing in all six tons. The pillars of the candelabras present a novelty. They are composed of barometer tubes built into metal sockets, and form stems of any diameter that may be requisite. The upper and lower ends of the tubes are covered with cut-glass from which the branches and feet spring. These glass decorations were executed with great rapidity having been completed in ten weeks.



We understand Messrs. Pellatt are preparing busily for the show of the year, and that their works will occupy an important share of the space appropriated to glass.



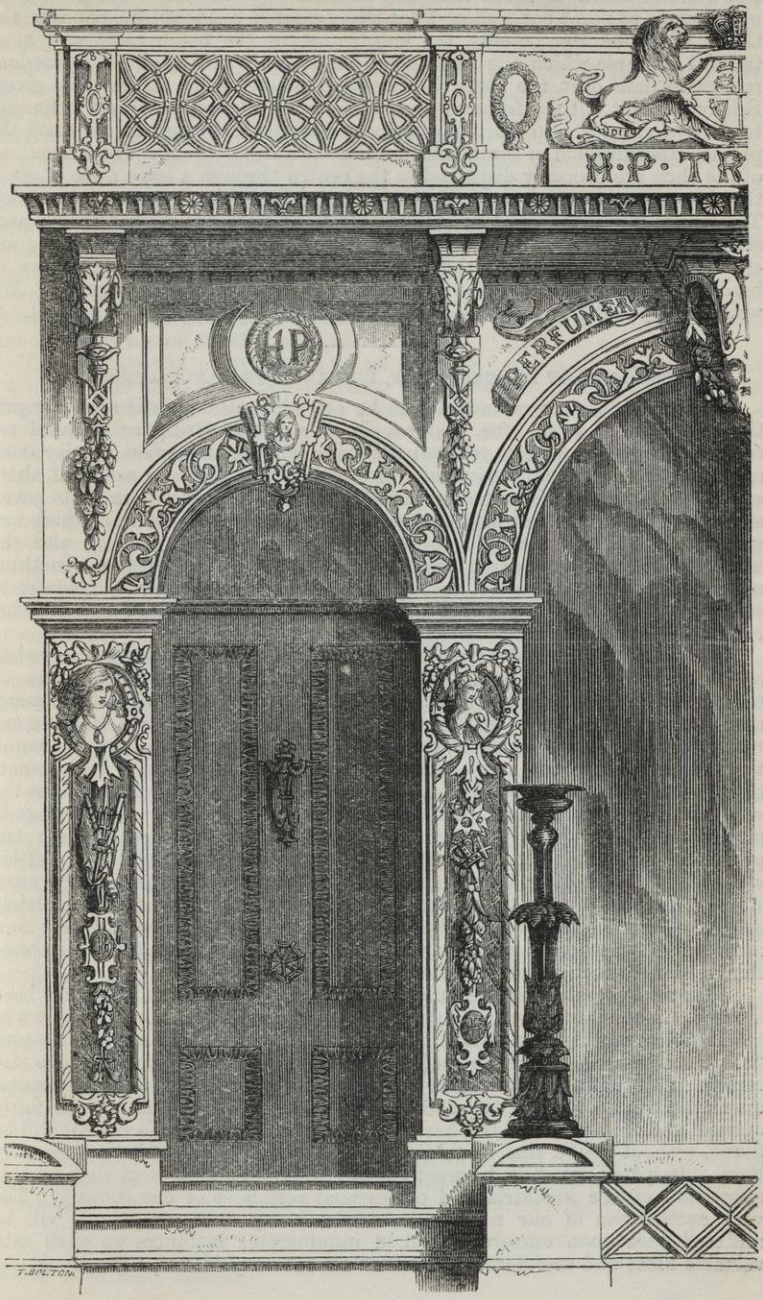
Knife, Fork, and Spoon, with Carved Ivory Handles, in the possession of W. Tite, Esq.*



* From "Choice Examples of Art-Workmanship," a text-book of brilliant specimens of ancient and mediæval art, which every manufacturer ought to know by heart.

SHOP-FRONTS.

THE generally bald, flat monotony of our street architecture might be made to serve as a useful contrast to effective and artistic shop-fronts, and in the



progress of a public taste for useful decoration we hope to see the attention of shopkeepers turned to the subject. It affords a most legitimate opportunity to a tradesman to invite the public to rely on his judgment and good taste, and a better token of them than any amount of wordy advertising. We do not hesitate to point out a shop-front lately erected in Piccadilly, opposite the Green Park, for Mr. Truefitt, the hairdresser, as the handsomest and most tasteful example which the metropolis has recently produced. Our woodcut represents half of it, the other half being a repetition of the portion given. Briefly to point out the features worthy of commendation, we direct attention to the symmetrical and graceful distribution of the architectural lines and the proper subordination of the handsome decorations to them. The attractions of the shop are properly displayed in the centre through a large plate of glass, the shop entrance being on one side and the private entrance on the other. The ornaments are carved in genuine stone, and are not plaster shams, and, standing in high relief on the party-coloured scagliola of the pilasters, are effective. The insertion of the female heads, exhibiting different styles of headdresses as medallions, is a motivo at once graceful and appropriate. We would gladly instance the name of the designer of this front, if we knew it.

PROSPECTS OF THE EXHIBITION, ESPECIALLY IN MANUFACTURES.

THE great problem of industry to be solved next month is now engaging the attention of every one, and people of a speculative turn of mind are constantly endeavouring to realise beforehand all that the great display itself can alone give any just notion of. Even when the whole is arranged, there will be comparatively few who can possibly have a true conception of its parts, so as to sum up its total with accuracy. The croakers as to that which *was not to be* have now merged into those who wonder *what is to be*, and the wonderment and the croaking are certainly on a par, since it takes something more than either to digest an apparent *chaos*, and reduce it mentally to something like the proportions of the *cosmos* which is gradually growing out of it.

It is no longer, then, a matter of doubt whether our national industry shall or shall not be fairly represented, since the unmistakeable fact is before us, that in every department it will be well and worthily displayed. That many may and will be disposed to say that more ought to have been done, we can readily conceive, since, as usual, those who ought to have been in the van of the preparations, in too many instances, hung back until forced to do something or abandon their position to their more perceptive rivals, thus at the very last hour embarrassing both themselves and those who were anxious to serve them, but whose power to do so had become limited through the procrastinating spirit which prompted delay until everything was quite settled without. It is a matter, however, for sincere congratulation that all the great staple branches of our trade and commerce will be fully and completely displayed, and ere another month elapses the great comparison will have been made as to whether or not we are so much behind our neighbours in some things, and so much in front of them in others.

That an energetic, and we trust permanent, spirit of emulation has been aroused in our manufacturing districts, from the wealthiest employer down to the humblest mechanic, is certain. That a cry for excellence, at any cost or sacrifice of the present, has been raised, and an effort made to respond to it, is also certain ; and that a large measure of success has attended the exertions consequent thereon no one will doubt when once the doors of the Exhibition are fairly opened, and a complete review has been taken of its contents—since it will be found, without doubt, that, in a degree far beyond what might have reasonably been anticipated, we shall be great gainers in a national point of view by this exposition of the industrial and commercial resources of our country. The very excellencies of our neighbours, whilst being duly recognised, will be reflected back upon ourselves ; and in innumerable instances we shall gain valuable hints and useful information for our future guidance, alike in matters

to which we have devoted our best energies, as in those on which a thought has scarcely been bestowed.

Looking, then, carefully at the prospects of the Exhibition as it now stands, we find that all our large manufacturing towns are thoroughly represented, and that could twice the space be found it would in many instances be filled with productions which would do us infinite credit; at the same time it is equally certain, that in many departments the necessity for making the most of the space at the disposal of the respective local committees has been of incalculable benefit, in weeding out intended contributions which would not have reached that standard of excellence which seems to have been the general aim. In making the latter remark, it is by no means to be understood that special productions are the rule and the ordinary business articles the exception: on the contrary, it is now a well-known fact that our best manufacturers have simply produced such specimens of their skill as would tend to shew, in an unmistakeable manner, what they were doing; and whilst doing this well, they have not attempted to exceed the standard of a fair market. Of course there are exceptional cases, both as regards excellence on the one hand, and cheapness on the other; but wherever this is the case there has been a good and sufficient reason for that exception.

Take the COTTON manufacture as an example; and it will be found, that whilst on the one hand the coarsest and cheapest productions are fully illustrated and fairly displayed, yet that efforts have been made to realise a greater degree of perfection in every department, alike in cloth and in yarns; and though, in all probability, it will be thought that a more extensive display might have been made of one of the staple productions of the country, yet on due consideration we think it will be found that every useful requisite of the cotton trade is illustrated, and a complete display of its present position honestly given. Manchester, Bolton, Glasgow, and Carlisle, are the leading towns exhibiting in this class; and whilst the wholesale houses of the metropolis display the higher products of the loom in figured muslins, &c., the great manufacturing firms of the north shew the more preliminary processes in yarns, &c. In fine yarns Messrs. Houldsworth and Co. and Mr. Bazley, of Manchester, and others, will make an interesting and valuable display: the latter gentleman illustrating the growth of the cotton plant, and the earlier processes of manufacture. In sewing cottons Jonas Brooks and Brothers, of Huddersfield, will exhibit largely, and the high character of this house is a guarantee of excellence.

PRINTED FABRICS, whether cottons, de-laines, or silks, will be represented by the best houses in the print trade. Manchester, by Thomas Hoyle and Sons, Thomson (Brothers) and Sons, Salis Schwabe and Co., Benecke and Co., Dalgleish, Falconer, and Co., and others; Glasgow, by H. Monteith and Co., James Black and Co.; and London, by Liddiards, Swaisland, Baker, Tucker and Co., Inglis and Wakefield, Crockers, Swainson and Dennys, and the leading wholesale houses, not being actual printers of fabrics, but proprietors of styles and patterns. There can be doubt that the display in this department will be highly satisfactory, and many novelties in modes of productions will be shewn for the first time.*

The weight of fairly illustrating the manufacture of LINENS and DAMASKS will fall, and very appropriately, upon the north of Ireland. The manufacturers of Belfast being quite conscious of the advantages to be derived from such an Exhibition have largely exerted themselves; and we anticipate such a manifestation of skill as will lay the foundation for a large increase of their trade, and a better knowledge as to the real producers of the best linens, cambrics, and damasks. In the latter the productions of Andrews of Ardoyne, Coulson of Lisburn, and Henning of Waringstown, will certainly do credit to this department, whilst the linens and cambrics of other houses will sustain a well-earned reputation. From Dumfermline and Leeds a good display may be

* We understand this Exhibition has been the stimulus which has caused the production of two new colours by Messrs. Liddiard.

anticipated, and the wholesale London houses will shew largely of the articles of which they are proprietors.

In WOOLLEN and MIXED FABRICS the Exhibition will be most rich and effective, and from the elegant and valuable poplins of Dublin, to the coarse but substantial Scotch tweeds and Irish friezes, everything will find its representative. Norwich and Dublin will represent the poplin trade; the West Riding of Yorkshire will display the whole of its industrial products collectively, Bradford in its mixed goods, Leeds in its woollens, Huddersfield in fancy articles, and Halifax in the more ornamental department of mixed furniture damasks, silks and woollens, and in carpets. Messrs. Crossley are making a highly interesting exposition of their patent tapestry carpets. In SHAWLS, too, the West Riding will make a good display of the lighter and more fanciful woollen and mixed articles of this class; but the great shawl display will be arranged in one of the galleries parallel with the transept; and Paisley, Norwich, and the Metropolis, will here manifest the highest polychromatic glories of the loom, and all the best houses in the trade will contribute to this display, which will be arranged in a novel and effective manner.

In WOOLLEN CLOTHS the West of England will shew largely and with excellent effect, whilst in the coarser and useful fabrics the Irish woollen trade will be well represented; blankets from Witney and Rochdale; horse clothing and railway rugs from Chipping Norton and Kendal; tartans from Galashiels, and a very interesting display of the productions of the Highlands of Scotland, chiefly of clan tartans, will complete the most perfect display of the woollen and mixed fabric trades of the United Kingdom it could be possible to bring together.

The SILK TRADE will also be well, if not thoroughly, represented. The known predilection for French goods had a serious effect upon the earlier preparations for this display, and it was only a few of the more spirited manufacturers who dared to think of anything like a comparison with their French neighbours. As the question progressed, however, confidence increased, and though, as compared with other branches of industry, the silk trade will not be so largely represented, yet, as a whole, it will be a more satisfactory display than could have been anticipated. Twelve months ago the greatest apathy prevailed in Spitalfields, and even opposition was displayed by manufacturers who have since earnestly desired to get more space and better opportunities for shewing what they can produce, than their early notions led them to ask for. All this is natural enough. Too long used to rely upon any one but themselves, finding that Manchester and Macclesfield were doing that which ought to be done at Spitalfields, and that the French manufacturer was making the most of his market, it would have been wonderful had the conviction seized at once upon men so situated. Gradually, however, it grew, and now small, comparatively speaking, as the display of Spitalfields silks will be, yet we have not the slightest doubt that it will be entirely satisfactory, and bring with it a better reputation, and consequently a better state of things, than has existed for many years past. Manchester and Macclesfield will be worthily represented by the leading houses in each place; and examples of the preparation of raw silk for the purposes of manufacture will form an interesting feature of this department.

In LEATHER, SKINS, and FURS, the exhibitors are numerous, although the space occupied is not great. Messrs. Bevington will display leathers of various kinds, and the towns of Glastonbury and Knaresborough in skins will be pre-eminent. But the chief feature of this class will be Mr. Nicholay's collection of FURS, which will certainly be one of *the* points of the Exhibition.

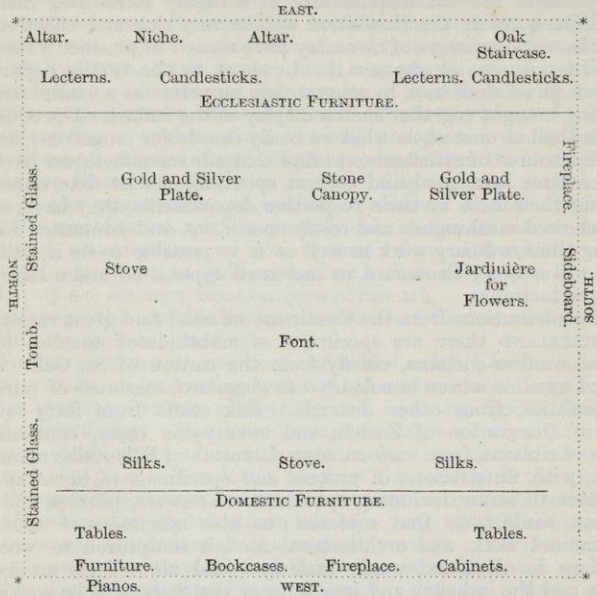
The Exhibitors of SHOES are many; Messrs. Hickson and Sons, of Smithfield, and Mr. Sparkes Hall, being the largest.

Messrs. De la Rue, Spicer, Joynson, Venables, will represent PAPER of all kinds. In the Central Avenue Messrs. De la Rue will have a beautiful envelope machine in working placed in the centre of their stall. BOOKBINDING and Fancy Stationery and Printing come into this class, and the bookbinders and lithographic printers of London are expected to be strong.

Opposite to Paper, on the south side of the Central Avenue will be the MEDIÆVAL COURT, which will excite great notice. It will prove that whether we are to go back or not to the style of our forefathers, we at least can compete with them in excellence of production. The accompanying diagram

PLAN OF THE MEDIÆVAL COURT.

Exhibitors: Messrs. Pugin, Crace, Hardman, Minton, and Myers.



shews the arrangement of this court, and will remove the erroneous impression that Mr. Pugin intended to erect a Roman Catholic chapel in the Exhibition. It will be seen that there are implements here not only for secular, but temporal purposes of all kinds.

In GLASS Messrs. Pellatt will be the largest exhibitors, especially in cut glass. Oslers rest their fame chiefly on their Crystal Fountain. Bacchus, Lloyd and Summerfield, Oslers, Rice Harris, Chance, and Powell, occupy considerable space in this class. Next to Glass is POTTERY, and here the familiar names of Copeland, Minton, Rose, Wedgewood, Ridgway, and Chamberlain, will be found vindicating, as we believe, the pre-eminence of England in fictile wares. MINERAL MANUFACTURES are in a court on the north side. Here will be placed all kinds of terra-cotta brickwork. The Society for Improving the Dwellings of the Labouring Classes are erecting a house of hollow bricks. Lord Lovelace shews how well flues and chimneys may be built. Mr. Minton will prove what can be done with his encaustic tiles, and Mr. Singer with his tesseræ. Orsi, and Armani, the Seeleys, Ransome and May, are all exhibitors.

HARDWARE will be excellently represented by Birmingham and its Messengers, Winfields, Potts, Elkingtons, Sturges; whilst Sheffield will put forth its strength in all kinds of steel-work. We hear promising accounts of the grates of Messrs. Stuart and Smith, Jobson, Hoole and Co. In WHITE WARE, Messrs. Dixon, Broadhead and Atkin, &c., and in CUTLERY, Messrs. Rodgers and the chief manufacturers, will shew what Sheffield can produce. Messrs. Feetham, Benham, Pierce, and many others, will exhibit grates and metal-work from the metropolis. Hardware is the most extensive of all the manufacturing classes, and will amply vindicate the smithery of the United Kingdom.

The display of GOLDSMITHS' WORK and JEWELLERY will be very considerable. In certain kinds of large work, such as racing plate, we shall stand high, and in

costly jewellery our position will be maintained, but in the more cunning artistic display, like that which Holbein and Benevenuto Cellini would have delighted to shew, we may expect to be outdistanced by the French at least.

In HOSIERY GOODS, Nottingham and Leicester will exhibit largely, and in general articles of clothing the display will be of a satisfactory character. In the HAT trade all the leading houses exhibit, and Messrs. Christy illustrate the whole process of the hat manufacture in a highly interesting manner. In HAIR and EMBROIDERY the Exhibition will be very rich and effective; and in RIBBONS the manufacturers of Coventry have united to produce a result which cannot fail to impress all who see it. In short, in the textile department of the Exhibition we shall have to congratulate ourselves as a commercial people upon having brought together such a display of the industrial products of the country as shall at once shew what we really can do for ourselves; and on the whole it is a source of satisfaction to find that our manufacturers have entered into this matter in a good and earnest spirit, for, whilst determinately bent upon doing their best in their respective departments, they have, as already stated, eschewed meaningless and costly specialties, and contented themselves with doing their ordinary work as well as it is possible to do it, and we have no doubt will reap a rich reward in increased reputation and a large demand for their productions.

In the contributions from the Continent we shall find great variety. Thus from SWITZERLAND there are specimens of embroidered muslins for ladies' dresses and window-curtains, chiefly from the canton of St. Gall. Jaconets, gauzes, and muslins woven in colours *à la Jacquard*, merinoes of pure wool of various qualities, from other districts. Silk stuffs from forty-two manufacturers of the canton of Zurich, and twenty-one cases, containing 2814 specimens of ribbons, from various manufacturers of Bâle: also manufactures of leather, with illustrations of process and specimens of boots and shoes; manufactures in straw, including specimens of flowers, plumes, and wreaths for bonnets, made from that material; as also specimens of wood-turning, carving, cabinet work, and architectural models sculptured in wood. The contributions in clock and watch-making would alone form an interesting exhibition, and the industry and ingenuity of the Swiss will be well displayed in this department. The various portions of the construction of time-keepers will be ingeniously illustrated, and we shall find some extraordinary specimens of mechanical skill alike in these as in musical boxes. In printed fabrics Bovel and Co., of Neuchatel, exhibit cambrics, jaconets, and satins. Vauclin, Du Pasquier, and Co., of the same place, also send an excellent selection of cotton prints.

From GERMANY the contributions are all of an interesting character. The mineral productions of *Prussia* are largely illustrated, as also numerous chemical products used in manufactures. The porcelain and stoneware manufacture is also worthily represented, and there are numerous specimens of glass manufacture from Frankfort, together with specimens of type-founding and letterpress printing. In textile fabrics, velvets and woollen cloths of various kinds, embroidered llama stuff, shawls, and plaids manufactured in some instances from British yarns. Morocco and neats' leather, with manufactures of the same; specimens of paper manufacture; and, as a matter of course, a full illustration of the Berlin iron manufacture, together with high-class works in bronze. From *Saxony* there are rich silk stuffs for tapestry, furniture, carriages, &c.; satin, damask, brocatelle, and coteline; damasks in cotton and silk, cotton and wool, and wool and silk, in various colours; laces and embroideries in the manner of Brussels. Saxony also exhibits largely in the woollen manufacture, which will be thoroughly illustrated in its various branches, and that too by all the leading manufacturers; llama flannels, hosiery, and gloves, these latter the product of the mountainous districts of Saxony, employing 20,000 people. In miscellaneous manufactures there will be great variety, of which musical and philosophical instruments, together with examples from the Royal Manufactory of Porcelain at Meissen, are not the least interesting in the higher departments. Saxony, too, is famous for

its oiled cloths for table-covers, as also for floor-cloths, and the Leipsic manufacturers worthily represent this branch of the national industry. *Wirtemberg* also exhibits largely, and the specimens of its industry are of a most interesting character. Watches, clocks, and musical instruments, excellent specimens of cotton manufacture, woollen cloth, linen damasks, and silk furniture stuffs; the raw material for these latter being produced in the royal establishments of Wirtemberg. The specimens of leather are also numerous, and the use illustrated in bookbinding and fancy work. Paper-making, chess-men, toys for children of a very ingenious character, papier mâché, straw plaitings, confectionary, and a great variety of industrial and artistic productions, all shewing the results of mental activity and manual skill of this small German state in a most satisfactory manner. *Hesse* contributes interesting specimens from the salt and peat works at Salzhausen; of ultramarine, and samples of agricultural products from the Central Board of Agriculture for Hesse, together with models of agricultural implements, &c. Examples of the manufacture of leather, specimens of paper and printing, and manufactures of straw, are also contributed. From Offenbach a collection of ornamental manufactures in iron is sent; from Darmstadt articles of jewellery and ornaments in gold and silver. Stained glass and carving in wood and ivory are amongst the examples of fine art.

From *Hanover* the contributions are more select than numerous, but make up in quality for limit in quantity.

The *Nassau* government engineers of mines exhibit, in the names of the mining proprietors, an interesting series of mineral products; copper ore, lead ore, copper pyrites, zinc ore, manganese ore, iron ore, lignite, slate, fuller's earth, and potters' clay. Also iron in various stages of manufacture, nickel metal, and a combination of it with arsenic, &c.; as also an assortment of marbles and clay-pipes. The latter to shew the quality of the pipe-clay of Nassau. Some excellent works of art and musical instruments are also sent.

From *Hamburg* the contributions are of a very miscellaneous character, and will be largely illustrative of the various pursuits centralised in a large city. As an example, we shall find kettle-drums and printed and painted table-cloths, oil-cake and pianofortes, mousseline-de-laine cravats and bird-cages, electro-magnetic clocks and embroidery. From *Lubeck* preserved vegetables and eatables generally, embroidery, guns, and leather.

From Tunis are sent various manufactures made up into articles for personal use in the Tunisian, Kirman, and Arab fashion, and silk dresses in imitation of Indian products. In metals, stirrups, stilettos, knives, scissors, &c., from Biserta; and ornaments in gold and silver, as used by the Bedouin Arabs: an Arab hair tent, carpets, bags for feeding horses, martingales, Arab guns and swords, bornuses (Moorish cloaks), mantles, joubbas, and ostrich skins with the feathers. The dried fruits of the north of Africa will be well illustrated, as well as the vegetable productions generally.

Sardinia contributes raw materials of a first-rate character—merino wools, raw silks, olive oil, and mineral productions in great variety. Velvets, silk plush for hats, and embroidered cambric handkerchiefs, from Genoa. Watches and musical instruments from Turin, as also specimens of high-class carving in pear-wood and ebony. There are also some beautiful specimens of furniture and mosaic work from Nice and Genoa, together with examples of sculpture from the latter city.

From Greece we shall find a very interesting collection of raw materials contributed by the Greek government; chiefly minerals, as illustrative of the natural resources of the country, and singularly useful as shewing the sources from whence the ancients drew the materials for their works of art. Marbles of various kinds from Mount Hymettus and Pentelicon; emery, pozzolana, lithographic stones, meershaum, and soap earth. Rosa-antico from Scutari, and black marble from Tripolitra. In manufactures, silk sashes, mosquito curtains, and handkerchiefs, together with specimens of silk in its raw state, and as manufactured into thread at the Piræus; as also several rich dresses and works of art from Athens.

DENMARK sends machinery, musical, philosophical, and surgical instruments. A rich assortment of porcelain from the Royal Manufactory at Copenhagen, however, constitutes the leading feature of the contributions from this country, the specimens of general manufacture being limited, although varied.

HOLLAND sends raw materials of a most useful and practical character, and the machinery, with few exceptions, is equally so. Some of the philosophical instruments are likely to be very interesting; amongst others a powerful steel magnet, of an attractive force equal to 500lbs. English. In manufactures, ropes, blankets, woollen coverlets, bed-ticking, with a few carpets and specimens of embroidery and silk, constitute the mass of the articles shown. In metals and glass there are few examples, and but a very slender representation in the department of fine arts.

The UNITED STATES articles for the most part have arrived, but are at present unpacked. RUSSIA, too, is hardly in motion yet.

AUSTRIA will make a good show in most branches, but especially in furniture: a suite of four rooms will be fitted up in the most costly way.

COMING REFORM OF THE PATENT LAWS AND THE EXHIBITION.

IF the pages of our last volume be consulted, it will be seen how surely our predictions of the advent of Patent Reform are in course of fulfilment. When the Government, without any resistance, last session suffered the House of Commons to mutilate the Lords' Bill (vol. iv. p. 7) which protected from piracy inventions exhibited in 1851, we said this step was sure to lead to a much wider demand. Thus we see, that not only has the Government brought in a bill which restores the protection to any inventions which may be exhibited in Hyde Park, but the Vice-President of the Board of Trade has declared that the Government intend to take up the subject of Patent Law Reform itself, and to appoint a Select Committee in the Lords to consider the subject. On the 17th March,—

Earl Granville requested Lord Brougham to postpone the introduction of the bill of which he (Lord Brougham) had given notice for an alteration of the patent law, when he informed him that it was the intention of the Government to bring in a bill for that object. The evidence given before the committee on the Designs Act Extension Bill unanimously pointed to the necessity of a change in the law relating to patents. After much consideration the Government had framed a bill with the view of remedying the acknowledged defects of the law, and, in compliance with the wish expressed by noble lords on both sides of the house, that their lordships should have some business to occupy their attention at an early period of the session, the bill would be introduced into this instead of the other house. The bill would be brought in in the course of next week, and, as it would be better not to have two bills relating to the same subject, he hoped Lord Brougham would not object to postpone his measure until the Government bill should be read a second time, and with his bill referred to a select committee.

Lord Brougham acceded to the proposal with the greatest possible satisfaction.

We never entertained any doubts that out of the evil of last year would come good. There are three opposing parties on this question, each of whom will no doubt be heard. First, the patent-agent interest, which is even prepared to modify a little the present absurd system. Next, a large class, represented by the heads of the British Association and the Society of Arts, and the most philosophical of political economists, think that invention should be recognised as a property; that its rights should be defined, and that the public should be left free to determine the value of them. A third, but small class, consists of some political economists who contend that there should be no rights in invention at all. Our own views entirely accord with those of the second class. The Second Report of the Society of Arts, just published, has some remarks which may be quoted:—

"The rights of inventors being already admitted by law, the Committee think it may be useful to discuss what those rights should be. It has been asked whether, like rights in land, in capital, and personal property, they should not be rights in

perpetuity; or whether they should be limited in duration, like copyrights in art and literature? Without entering on this question, it appears to the Committee to be for the public good that rights in invention should not be perpetual. Inventions in science are based upon ideas and knowledge, which are the common property of the period, and they are the answer to wants previously uttered by the public. The discoveries of any one period could hardly have been made in any antecedent period, because they are the results of the condition of science and knowledge at the particular period brought to a practical result by minds specially directing themselves to it. It is right policy to reward the *first* successful discoverer, for that reason; but it would discourage invention if the rights of the first discoverer were perpetual, and in force against all others who might and would, independently of the first discoverer and his labours, have sooner or later arrived at the like result. When a new principle has once been discovered, it often happens that there may be found different modes of realising it; but it likewise may happen that the mode first discovered may be not only the best and simplest, but the *only* one; and it would not be for public advantage that any one individual should have an exclusive property in perpetuity in that *one* mode. In literature the copyright is not for the idea, which, however new, at once becomes common property, but for the particular words and style in which it is expressed; and this limitation is a sufficient protection to the author, because the public, as a general rule, greatly prefer the original thought as originally expressed to a second-hand version of it.

"If it be conceded that the rights of inventors ought not to be in perpetuity, it may be asked, What, then, should be their duration?

"What is the duration of analogous rights? In literature it is at least 42 years, and it may be longer. In sculpture and plastic art the original designer has rights for 14 years, and longer. In engravings, 42 years. In ornamental designs for manufactures it may vary from 9 months to 6 years. In designs for articles of utility, dependent on form or configuration, it is for 3 years. For those other classes of invention which are the subject of letters patent, the duration is 14 years, and may be extended to 28 years. And as this period is already recognised, the Committee consider that 21 years should be adopted. In this question of duration there are two points to be considered, which appear to be somewhat antagonistic. Under one aspect it is for the *public* interest that the inventor's right should exist as short a time as possible, in order that the public may have the free use of it; but it is also for the public interest that the invention should be as perfect as possible, and to obtain this perfection the right must be secured to the inventor for a sufficient time to induce him to bestow his labour and capital in perfecting it. What is that limit of time which shall reconcile these two apparently opposing interests? It is clear that the duration of the right cannot be officially determined by the intrinsic merits and character of the invention. *It is public experience alone which settles the question of merits.* If the invention prove valuable, and an ultimate period be fixed, the Committee are of opinion that the proprietor should determine for himself whether it is worth his while to keep it. If it be not valuable, and the right of usage is in abeyance, then it is for the public interest that the right should lapse. Generally speaking, it is for the public interest that the right, whether valuable or worthless, should not endure for long periods. Hence it would seem to follow, that the wants of the public and the proprietor would be best met by making the right *renewable at intervals* up to a certain fixed period, the proprietor himself having the option of renewal under certain conditions."

"The late Mr. Holdsworth, M.P., well observed:—

"'It has been stated, that patents may be multiplied to too great an extent; I conceive that idea arises from this circumstance only, that as the law is not clear with regard to patents, so many are obtained that appear defective in law, which by confusing workmen really do mischief; but if the law be made so clear and defined, that a patent for a something really useful, when taken out, would be found to be secure, then I cannot conceive that we can have too many patents, as they are the reward of man's ingenuity. One man has a property in the funds, another in land, a third man in the powers of his head, evidenced by his inventions; and I conceive that if you were to attempt to limit the number, you would at once cramp men's ingenuity, and not give those who are clever their fair value in the market, because their brains are the only property which they possess.'—*Holdsworth, M.P.* 1829.

"The Committee submit that these apprehensions are, in fact, mere chimeras, and positively contradicted by the experience of the working of the Ornamental Designs Act, and even of the Literary Copyright Act. Under the Designs Act, the recognition

of the right in a pattern, or series of simple lines, printed on calico, is probably the smallest kind of right that can be received. It is impossible to conceive a smaller outlay of inventive power than is demanded to produce a variety of crosses, or circles, or other geometric forms for such a purpose. No invention of a mechanical action or process can be compared with the cotton print for simplicity. These cotton designs are produced by tens of thousands. An extensive printer will create at least five hundred patterns a-year, and there are probably some twenty printers at least who do so; certainly, there are ten thousand new calico patterns produced every year, and an average of half, or about six thousand, are claimed and registered as legal rights, which is done by payment of one shilling. The penalties for infringement are from 5*l.* to 30*l.*, recoverable in the simplest way upon summons before a magistrate. If ever there seemed to be a likelihood of unconscious infringement, or an easy road to it, it is here: if ever a multitude of rights could create confusion and interruption to trade, it would be manifested in calico-printing. But the practical working of this Act has been such, that there has not been an average of twenty convictions per annum during the creation of at least fifty thousand small rights. As for unconscious infringement of any one of them, such a thing is hardly possible; no two persons, however alike in taste and education, being set apart to devise a pattern on a given subject, would ever do precisely the same thing; and it would be the same with inventions. It is a law of nature that no two things can be precisely alike. Even manufactures from the same mould present important differences. There would be sure to be such minute differences as to constitute an independent originality in all inventions, however trifling. Moreover, the moral effect of the recognition of small rights in ornamental design has been to make all parties who, before its passing, were accustomed to be pirates on one another, extremely respectful and observant of the rights of others.

"The same facts and arguments equally apply to literary copyright. A popular song is the easiest thing to plagiarise; but it is very rare indeed that we hear of such a thing, and we do not hear either that music dealers or musicians are impeded in their pursuits by the number of musical compositions. And it may be also noticed that another effect has followed the recognition of rights in ornamental design, which has had a constant tendency to elevate the general standard of the excellence of them. Cotton printers produce better prints since the passing of the Act, and there can be no doubt that any additional period of copyright which the Board of Trade may confer will tend to increase this effect of substituting goodness for mere variety and quantity.

"The argument, that the present great cost of Patents, by rendering the rights few, is a benefit to manufacturers, is unsound. The money test does not determine the merit or legality of the invention, but simply proves that the inventor could either afford to pay the fees, or that he could induce some one else to pay them for him. In short, the very reverse of the inconveniences prophesied may be expected from cheap registration of invention. Make little rights respected, and a better tone of morals is fostered towards all rights, both large and small. What would be our state of society if the law repudiated cognizance of any thefts below a pound in value? No one will contend that the public has not derived great benefit from the easy recovery of small debts, and that since the County Courts Bill has been passed there has been a tendency to incur small debts. Quite the contrary. The same beneficial results would follow with registrations of small inventions. The public advantages in the progress of science and discovery would be very great by the facility thus given to record anything whatever that seemed to be of practical worth. Every scientific man is now obliged to ask himself, Is the discovery worth 300*l.*? and when he decides that he cannot get the Patent without infinite trouble and cost, his discovery goes unregistered—probably to be revived again and again by others richer and more adventurous than himself. Recognise the rights of inventors, and invention will be elevated into a science. Those who fear such a result are those who fear the spread of education, and are like those who, in the middle ages, would have burned astronomers or metallurgists as witches; and who, even in the memory of the present times, denied the pretensions of geology or political economy to the rank of sciences."

The principal features of the Bill to protect Inventions will be seen from the following abstract:—

The preamble states, that "whereas it is expedient that protection should be afforded to persons desirous of exhibiting new Inventions in the Exhibition of the

Works of Industry of all Nations in one thousand eight hundred and fifty-one, it is enacted, that

"Any new Invention for which Letters Patent might lawfully be granted may at any Time during the Year One thousand eight hundred and fifty-one, but not afterwards, be publicly exhibited in any Place previously certified by the Lords of the Committee of Privy Council for Trade and Foreign Plantations to be a Place of Exhibition within the meaning of the Designs Act, 1850, without prejudice to the the validity of any Letters Patent to be thereafter, during the Term of the provisional Registration hereinafter mentioned, granted for such Invention to the true and first Inventor thereof: Provided always, that such Invention have previously to such public Exhibition thereof been provisionally registered; and that the same be not otherwise publicly exhibited or used by or with the Consent of the Inventor prior to the granting of any such Letters Patent as aforesaid: Provided also, that no Sale or Transfer of the Right to any Invention so provisionally registered, or of the Rights acquired under this Act, or under any Letters Patent, shall be deemed a Use of such Invention; and the Publication of any Account in any Catalogue, Paper, Newspaper, Periodical, or otherwise, shall not affect the validity of any Letters Patent to be during such Term granted as aforesaid."

A Certificate of Invention is to be granted for provisional Registration by the Attorney-General.

The Certificate of Invention is to be registered by the Registrar of Designs, "Provided always, that if any Invention so provisionally registered be not actually exhibited in such Place of public Exhibition as aforesaid, or if the same Invention be in use by others at the Time of the said Registration, or if the Person by or on whose Behalf the said Registration has been effected be not the first and true Inventor thereof, such Registration shall be absolutely void."

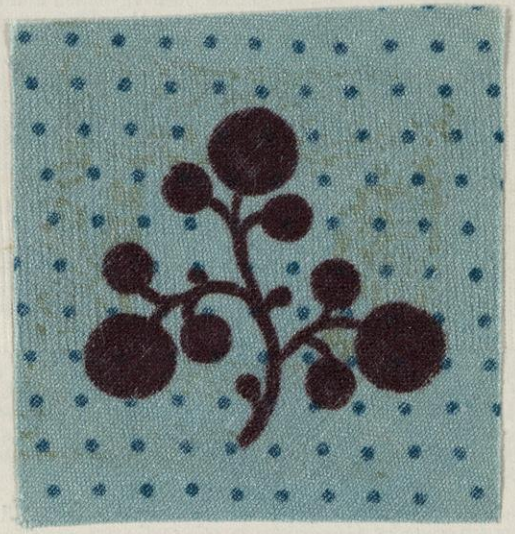
The Description is to be preserved, and Invention to be marked with the words "Provisionally registered." The Provisional Registration will confer same Benefits as under the Designs Act, 1850. Letters Patent thereafter granted are to be as valid as if Inventions were not registered or exhibited. Rights may be acquired under the Designs Act, 1842, notwithstanding the Publication of the Design abroad; and the Designs Act, 1850, and this Act, are to be construed as One Act.

It will occur to everybody, that if the principle of the Bill is sound as respects the Exhibition of Inventions at the Great Show, it is equally so in respect of all little shows. If encouragement is to be given to exhibit inventions in London, why not in Manchester, or Glasgow, and elsewhere? We will discuss this point when the Bill becomes law, which it is likely to do immediately. It has passed both Houses of Parliament.

NOVELTIES IN PRINTED FABRICS.

Messrs. Liddiard and Messrs. Inglis and Wakefield have courteously sent for our inspection their spring novelties, and we have examined some of other manufacturers whose names are unknown to us. We are led to infer that every printer must be reserving what he considers to be his triumphs in his art to be first seen in the Crystal Palace, for a more uninteresting lot of designs we have never looked over than those submitted to the public at the present season. The two most remarkable features in the lots alluded to are the attempt to imitate in printing the sober effects of the alpaca fabrics and to reproduce on *mousseline de laine* and cotton the effete effects of *chene* silk. Judged by a common canon of good taste, however successful these attempts may be, we should consider them reprehensible merely as *imitations*. As for the *chene* silk effects, they are barely tolerable even as they were originally produced on silk. The lustre of their material reconciled us to them, but to have them without this lustre is unbearable. Another effect made this season is to combine the *chene* silk style with the natural flower style, and with the woven effects of the cachmere style! And a pretty mess is made of it. We hope that at present we have only seen the dregs of the printing factories, and that much better

things are in store; if not, our printers may prepare themselves to be thoroughly beaten by France and Switzerland. But we have better hopes.



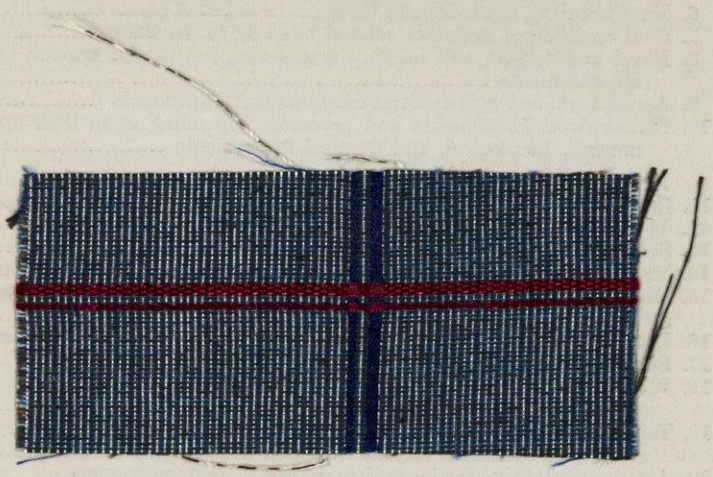
From Messrs. Liddiard's specimens we select the present example as offering the most remarkable novelty in style, and as being simple and quite effective.

MIXED FABRIC OF FLAX, ETC.

THE attention of the public has of late been continually directed to the experiments made by agriculturists, throughout the United Kingdom, in the cultivation of flax, as well as to the various processes, both mechanical and chemical, which have been proposed or employed in the separation and dressing of the fibre. Very lately it has been announced that Chevalier Claussen had discovered a mode which enables him, by the combined action of an acid and an alkali, to rend asunder the fibres, thereby producing what has been called flax-cotton, and from which some yarns have been spun at Bradford upon a throstle as fine as 80's cotton.

It will, doubtless, be interesting to our readers to see in what way manufacturers are employing the flax as at present prepared, notwithstanding the

difficulties which have stood in the way of its purification from resinous gums. We have, therefore, inserted in our present number a specimen of vesting, which has been forwarded by Messrs. Bull and Wilson, and it may fairly be



expected that it will command an extensive sale during the spring and summer seasons. It is composed of silk, flax, and cotton, in equal proportions, and will probably supersede the heavier fabrics which have prevailed so much of late, and which were composed of silk, wool, and cotton.

EXHIBITION OF 1851 : MONTHLY REPORT OF PROGRESS.

THE most important principle decided since last month is that affecting the constitution of the JURIES. In a previous volume (vol. iv. p. 90), we gave the outline of the system upon which Professor Playfair proposed to establish the juries for the distribution of medals. This has now been adopted by the Commissioners, and the details of the plan settled. The conditions which have been thus decided upon are, that there shall be one jury to each of the thirty classes into which the Exhibition is divided, the number of jurors in each jury being determined by the amount of articles exhibited in each class, and with reference also to the greater or less diversity of the objects included in it. In deciding upon the number in each jury, practical considerations have alone been studied, and no abstract idea of the relative importance of the classes is involved in the numbers attached to them. The following list describes the thirty juries, and the number of jurors to each jury :—

	Raw Materials.	No. of Jurors.
1.	Mining, quarrying, metallurgical operations, and mineral products ...	8
2.	Chemical and pharmaceutical processes and products generally.....	8
3.	Substances used as food.....	6
4.	Vegetable and animal substances chiefly used in manufactures, as implements, or for ornament	8

Machinery.

5. Machines for direct use, including carriages and railway and naval mechanism 12
6. Manufacturing machines and tools 12
7. Civil engineering, architectural and building contrivances 8
8. Naval architecture and military engineering; ordnance, armour, and accoutrements 8
9. Agricultural and horticultural machines and implements ..... *
10. Philosophical instruments and processes depending upon their use; musical, horological, and surgical instruments 12

Manufactures.

11. Cotton 10
12. Woollen and worsted 12
13. Silk and velvet 10
14. Manufactures from flax and hemp 10
15. Mixed fabrics, including shawls, but exclusive of worsted goods (class 12) 12
16. Leather, including saddlery and harness, skins, fur, feathers, and hair 10
17. Paper and stationery, printing and bookbinding 8
18. Woven, spun, felted, and laid fabrics, when shewn as specimens of printing or dyeing 10
19. Tapestry, including carpets and floor-cloths, lace, and embroidery, fancy and industrial works 10
20. Articles of clothing for immediate, personal, or domestic use 8
21. Cutlery and edge tools 6
22. Iron and general hardware 12
23. Working in precious metals, and in their imitation, jewellery, and all articles of vertu and luxury, not included in the other classes 8
24. Glass 8
25. Ceramic manufacture, china, porcelain, earthenware, &c. 8
26. Decoration furniture and upholstery, including paper-hangings, papier mâché, and japanned goods 12
27. Manufactures in mineral substances used for building or decoration, as in marble, slate, porphyries, cements, artificial stones, &c. 6
28. Manufactures from animal and vegetable substances, not being woven or felted, or included in other sections 6
29. Miscellaneous manufactures and small wares 10

Fine Arts.

30. Sculpture, models, and plastic art 12

270

Very detailed classified lists of each of these divisions form the limitation of subjects in each of them, while the articles will be arranged in the building as much as possible in the thirty classes, so as to be coincident with the field of action of each jury, and to facilitate its labours. One most important point to be considered in connexion with the constitution of the juries was, as to how far Exhibitors might be allowed to be placed upon the juries. It was obvious, that to exclude all Exhibitors would be, in effect, to shut out nearly the whole of the persons best qualified to act as such, and in order to avoid this difficulty it has been decided that *Exhibitors may accept the office of jurors upon ceasing to be competitors for prizes* in the class to which they are appointed, and these will not be awarded either to them individually, or to the firms in which they may be partners.

It will be admitted that this decision, while it secures impartiality in the tribunal, at the same time enables a selection to be made of fit persons for the duties. Many of the most talented and experienced Exhibitors would infinitely prefer the honour of being selected as a juror, and of having their names

* The jury for Agricultural Implements is made exceptional, as the Agricultural Committee, consisting of eminent members of the Royal Agricultural Society, have undertaken the functions of the jury. Foreigners may be added to this committee, if desired.

recorded in that capacity, than as the recipients of the medals which will be awarded.

It has been decided that the juries shall consist of an equal number of British subjects and of foreigners ; but if foreign Commissioners do not send a sufficient number of foreigners to represent one-half of the jurors in each class, the deficiency will be made up by the appointment of British.

Country, as well as metropolitan, districts will be represented in the juries, each of which will be presided over by a chairman, to be nominated by the Commissioners, and he will be aided by a deputy chairman, to be elected by the jury.

The regulations with respect to the appointment of the English jurors are, that those towns which exhibit to considerable extent in any of the classes will be invited to send in a list of names of persons who would efficiently represent the knowledge of such class as a juror. In cases of such nomination it will be necessary to state, according to the classified jury list, the subdivisions of the class with which the person recommended is specially acquainted ; and all nominations must be made in classes, and not in the aggregate. As it is highly probable that the number returned may be larger than required, the Commission charges itself with the duty of reducing the lists to the standard number for each jury ; and it is provided that those persons who have been recommended as jurors, but who from the small numbers of the jury are not placed on it, may, on the application of a jury, be called in on special occasions to give aid, under the title of associates, but without a vote. The final selection of jurors from the lists returned will be made with a view to the full and complete representation of the particular class or subject, and no personal considerations whatever will be allowed to influence their selection. Although it will doubtless happen that the services of all the persons recommended will not be required, it must be borne in mind by such parties that the confidence displayed in their integrity and ability by the committees which may have recommended them will be in itself a high and a lasting honour, and will more than compensate for any disappointment which they might feel at not being appointed to act as jurors, or possibly even to assist as " associates." Invitations accordingly have been addressed to Local Committees, and we cannot doubt that there will be a published list of the parties recommended by them : each of the juries will be allowed to appoint one of their own body as a reporter.

It is proposed also to form a body, with the title of " Council of Chairmen," such Council to be formed of the chairmen of each of the thirty juries. In the absence of the chairman, the deputy chairman will be allowed to take his seat at the Council, which will be constituted, as far as practicable, of one-half British and one-half foreigners. With respect to the duties of this body, the first will consist in framing the rules for the guidance of the juries ; and as it is necessary, in order to do this, that the Council should meet at least one week earlier than the juries, provision has been made against any delay by vesting their appointment in the hands of the Commissioners, leaving it, as we have already stated, to the juries themselves to elect deputy chairmen. A second very important duty of the Council of Chairmen will be to determine the conditions under which the 1st, 2d, and 3d class medals respectively are to be awarded, and to define the general principles to which it will be advisable to conform in the award of prizes in the several departments of the Exhibition. It is the wish of the Commission that medals should be awarded to articles possessing decided superiority, of whatever nature that superiority may be, and not with reference to a merely individual competition. *The three classes of medals are intended to distinguish the respective characters of subjects, and not as first, second, and third in degree for the same class of subjects.*

The Council of Chairmen will also be required to see that the awards of the individual juries are made in accordance with the rules before they are considered final. The Council of Chairmen will further be required to consider those cases in which juries recommend pecuniary grants to individual Exhibitors, as the Commissioners will not be disposed to consider the propriety of so doing unless such recommendation of the jury is sanctioned by

that body. In order to explain the wishes of the Commission, and to explain its rules in cases where such assistance is required, a nominee of the Commission will attend the meetings of the Council, but will not possess a vote, or act in any way as a member of the body. As some of the most important duties of the Council of Chairmen are preliminary to the action of the juries, it is necessary that they should meet one week previous to the assembling of the juries. The first meeting will take place on Monday, the 5th of May.

The juries may act in matters of detail by sub-committees, but no award can be made except by the majority of the jury, and such awards must not be published until after they have been submitted to the Council of Chairmen for the purpose of securing uniformity of action; and the awards of a jury, when reported by the Council, will be considered as final. The juries will commence their duties on Monday, May 12, at ten o'clock, and they will be aided in the general transaction of the business by a person to be named by the Royal Commissioners, who by himself, or by a deputy approved by the Commissioners, may be present at their deliberations, for the purpose of explaining the rules of the Commission; such person, as in the case of the Council of Chairmen, will not, however, be allowed any vote or interference in the adjudication of the rewards.

With respect to the meeting of juries, the following regulations have been agreed upon:—

"The jurors, on being appointed, will receive immediate notice of appointment, and their names will be published.

"The chairmen will be required to meet on Monday, the 5th May, at ten o'clock.

"The juries will meet for the transaction of business on Monday, the 12th May, at ten o'clock.

"Although it is impossible to set apart special days in which the juries alone can examine the articles exhibited, to the exclusion of the public, arrangements will be made to carry on these examinations with as little inconvenience as possible.

"Jurors, immediately on their arrival in London, are requested to report themselves at the Jury-office, in the Exhibition building, where they will obtain their juror's ticket, and receive all necessary information."

The Commissioners delayed their decision with reference to the mode of appointing foreign jurors until after a meeting of the recognised agents of foreign commissions, who have been requested to state the principles which it would be agreeable to their respective countries that the Commission should adopt. The Agents have met, and have agreed that Jurors, without reference to any specialty, shall be nominated for each country in the following proportions:—

France, 33; Belgium, 8; Switzerland, 4; Austria, 15; Spain, 4; Portugal, 2: Tunis, 1; Turkey, 3; The Zollverein, 19; Russia, 6; United States, 21; Denmark, 1; North Germany, 3; Greece, 1; Holland, 1; Italy, 6; Sweden and Norway, 2.

The Executive Committee have notified that the Exhibition will positively open on the 1st May. The doors are closed against all packages and carts on the 2d April. Any goods admitted after that date must come in unpacked, and any goods sent after the 10th must pay a fine of 1*l.* per 28lbs. weight to the general funds.

The sale of Season Tickets has been considerable. Up to the 24th March 3480 tickets for gentlemen, and 2702 tickets for ladies, had been sold.

Books.

THE COMMERCIAL HAND-BOOK OF CHEMICAL ANALYSIS. By A. Normandy.—George Knight and Sons.

THIS work was undertaken in order to afford practical instructions for the determination of the intrinsic or commercial value of substances used in manufactures, trades, or the arts; and could this desirable end be properly carried out, a valuable and serviceable book would be offered to the public. Unfortunately the subject is vast as it is varied, and as the art of adulteration and sophistication is ever changing, and as all articles of consumption in trade, in manufactures, in the arts, in a word, all that can be made matter of commerce and be sold is adulterated, falsified, disguised, or drugged, it requires more than a Hercules to cleanse this Augean stable of impurities,

nothing less than a succession of works can compete with this species of industrial perseverance or perfidy. Among the articles of domestic use, the adulteration of which has been noticed by Dr. Normandy, with the means of detecting the fraud, may be enumerated,— ale, arrowroot, beer, blanc-mange, bon-bons, brandy, bread, cheese, chocolate, cocoa, coffee, oils, flour, gin, honey, isinglass, milk, porter, rum, salt, sugar, tea, and wines,—a frightful catalogue, yet containing most of the necessaries of life, submitted to the fraudulent practices of the unprincipled, who let out upon us all the evils of Pandora's box. It appears that the limits of the work have not allowed the author to enumerate all the villanies of this "death-in-the-pot" system. When the various means of sophistication in almost all branches of trade, particularly in those connected with medicaments, are brought to light, it becomes a grave question whether, under the Board of Health, the formation of a sanitary police, capable of restraining such wholesale corruption, should not replace the obsolete and now inefficient means employed to battle with the cupidity and abject vice of the unprincipled trader.

Dr. Normandy's work indicates the methods by which compounds in general can be distinguished from each other, and shews the specific application of those methods to compounds of a particular kind, whether contaminated by impurities or sophisticated by additions, and to what extent,—or whether the constituents, known to exist in the genuine articles, are present in their proper proportions.

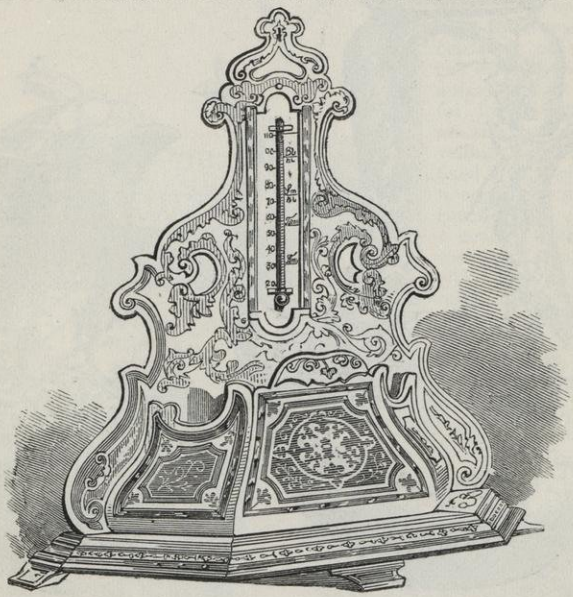
The work is, however, incomplete, and the author claims indulgence for the delay in the production of the book, upon the ground of "introduction into the work of an additional number of articles, which have been added." Doubtless, as modes of fraud are detected and exposed, new methods will be resorted to, in order to impose upon the unwary, a work of this kind must necessarily appear periodically, as one means of information and restraint; and we hope that Dr. Normandy will not allow the subject to sleep. It is not likely to die under such skilful hands.

List of New Manufactures.

Useful and Ornamental.

[On the same principle as Literary Journals give a list of new publications issued weekly, so we here afford to manufacturers, &c., the opportunity of announcing the novelties they bring forward, accompanied with such brief remarks as will be strictly explanatory; our readers will bear in mind, that the statements under these circumstances are made on the responsibility of the producers.]

Card-Rack in Papier Mâché, with Thermometer, manufactured by Jennens and Bettridge.



[This novel introduction of a thermometer is a happy thought, especially when the article is used in a lady's boudoir or bedroom.—*Ed. J. of D.*]

The Writing Master, after a Picture in the Dresden Gallery.

Manufactured in Plaster Composition, and sold by the Proprietors, Messrs. J. H. Hetley and Co., Soho Square.

Portrait of Gerhard Dow, by himself, from the original, in the Dresden Gallery.

Manufactured in Plaster Composition, and sold by Messrs. J. H. Hetley and Co., Soho Square.

New Water and Coffee Pots, in Parian and China.

Manufactured by Roses, of Coalport, Shropshire.

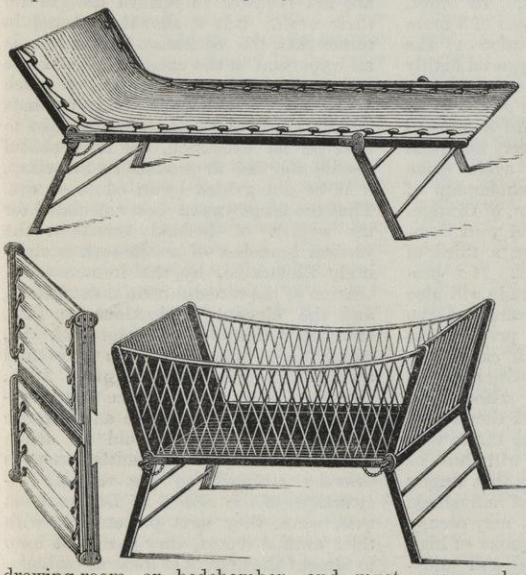
Bronze Candlestick.

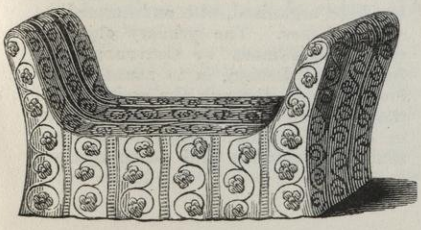
(At Cundall & Addey's.)

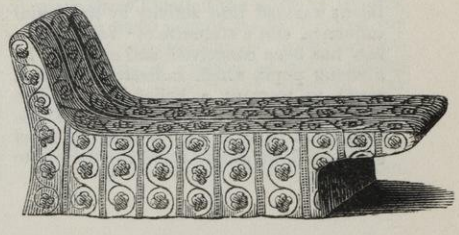
Lustre, with China figure.

(At Apsley Pellatt's.)

Perkes's Metallic Folding Bedstead, Registered July 27, 1850. No. 2390. This article has lately been introduced by Mr. Samuel Perkes, Birkenhead. It is of simple construction, having a joint at each end, which allows either one or both ends to be raised or lowered to any required elevation. It can be used either as a Bed, Couch, Settee, or Crib, as represented, and will answer all four different purposes. The sacking is elastic; when folded up it occupies but a small space, being in one piece as shewn, and can be unfolded for use in a moment. It is also useful for invalids at the sea-side, or persons travelling; the back can be fixed in any required position. Officers in the service can thus at once obtain a couch for the barrack-room, and a portable bed either for home or foreign use; whilst as a spare bed for private families it is unequalled; and from its light appearance it will be found fit for the drawing-room or bedchamber, and must prove valuable for hotel proprietors, hospital committees, asylums, schools, &c. &c. Its weight is from 16 to 20lbs.







Miscellaneous.

Belfast School of Design.—We are glad to receive the Annual Report of this School, which shews the School has commenced very auspiciously. Want of space alone prevents our quoting the whole of it; but we must observe that there is a balance at the bankers—that the number of pupils has been 286 males and 29 females—and that the School is obviously a subject of deep interest to Lord Dufferin, who has been a munificent patron, as well as to the gentry and manufacturers. We are only able to quote from the Report the portions relative to the establishment of Scholarships—a subject of great importance to all Schools and their general influence:—"The young men who enter the classes being almost exclusively drafted from among those whose occupations prevent their devoting more than the customary evening hours to study, it could not be expected that they should attain such early or complete proficiency, as is desirable where there is promise of superior talent. In order, therefore, to afford the means of a more constant and exclusive devotion to the study of decorative art, it appeared highly desirable to offer an annual sum, in scholarships, binding those who should obtain them to give a certain additional time to their studies. To carry out these intentions, Lord Dufferin again came forward, and endowed a scholarship of 20*l.*; Mr. Blakiston Houston, of Orangefield, added one of 10*l.*; and your Committee have joined to them a third, of 15*l.*, out of the school funds. It is probable that the Board of Trade will also endow one or more. Several of the most promising pupils are preparing to compete, and the successful candidates will thus be placed in a position to realise the full benefit of the school: and your Committee do not think themselves over-sanguine in anticipating that a very superior class of designers will thus be produced. Nor is it unlikely that among these scholars may be found individuals who, at some future period, may occupy an honourable place in the ranks of high Art. Even with the partial and undeveloped advantages of our infant school, there have not been wanting instances of talent warmed into activity by its genial influence, and a statuette of 'Venus attiring' has been conceived and executed by a young pupil, which indicates sufficient merit to warrant a belief that, as the school progresses, and its pupils are enabled at once to take a wider range of study, and to attend more exclusively to its details, a happy combination of creative genius and practical ability may be looked for among those who leave its walls, after completing the prescribed curriculum. There is one topic connected with the working of the school which forms an exception to the satisfaction with which your Committee regard its general progress, namely,—the very small attendance of females in the public classes. While the male classes have, at times, counted as many as 150 pupils, 17 is the highest number of females as yet on the books. When the great extent to which the latter sex is employed in the sewed muslin manufacture, and in fancy needlework of various kinds, is taken into consideration, it is surprising that so few have come forward to avail themselves of the instruction which the school affords; more especially, since the fees are so very low as to be within the reach of all. It may be said that those who are thus occupied are not required to furnish designs for their work. But it should be borne in mind that the education of the eye is all-important in the execution of delicate and tasteful patterns. Where so much of the effect of an elegant design depends on the spirit and knowledge brought to bear on its execution, the most skilful needle may fail to produce its full effect, if it be not guided by an educated eye. That the employment best calculated for the women of Ireland exists in the various branches of needlework is strikingly illustrated, by the immense extension of the sewed-muslin manufacture, and the elegant productions in lace, crotchet, embroidery, Berlin-wool, &c., which have emanated from industrial schools throughout the country. It is, therefore, of great importance that everything calculated to develope and improve this natural ability should be made available; and your Committee, in thus drawing attention to the valuable instructions of the School of Design, trust that, when they next present you with their annual report, they shall not have to lament the neglect of these advantages. In addition to the public and private classes, a special one for governesses has been organised, with an intermediate scale of fees. The primary object in the establishment by Government of Schools of Design, is to afford to the lower classes, through the assistance of the State, an easily accessible education in decorative art. But, at the same time, full sanction and encouragement

have been given to making these resources available for the instruction of other ranks of society; private classes have, therefore, been organised at a higher rate of charge. The average attendance in the Belfast school, in these classes, has been about 50, and the pupils have expressed themselves very sensible of the advantages, now for the first time offered in this town, of a varied course of instruction, and a good collection of examples of Art. Besides the pleasure derived from the study of form and colour, and the numerous resources which it opens up to the mind, it is directly calculated to influence, in a particular degree, the progress of trade and manufactures. As the eye becomes familiarised with the beautiful, a new sense is, as it were, created, to gratify whose cravings the stores of nature and the ingenuity of man are alike made subservient; and thus, the more widely extended the knowledge of Art, the greater becomes the demand for articles of luxury, in which taste and utility are combined. It is precisely this want which the designer and the artisan are called on to supply; and as skilled labour is the best paid, and the greatest amount of employment is afforded by the more ornate manufactures, the whole community must benefit by Art-education. Your Committee are anxious to use every means in their power to advance this important object, and through the medium of private classes, by admitting visitors to the school, and by occasional *conversaziones*, they think that much may be done towards this end. They hail with much pleasure, in the highly creditable exhibition of paintings now open in town, and the interest which it has excited, an evidence of the growing taste of the people of Belfast; and they hope that the foundation of a Government School of Design will mark the commencement of a new era in our community, where industry will be the handmaiden of refinement."

The SOCIETY OF ARTS propose to make their house a place of rendezvous for Exhibitors during the period of the Exhibition, and to hold a *conversazione* every week, to which Exhibitors will be invited. We understand they have already intimated their intention to the Foreign Commissioners, who will be elected Honorary Members.

We are glad to hear that provision is being made to DECORATE parts of the EXHIBITION BUILDING WITH FLOWERS. The conditions for supplying the Building with plants and flowers are as follow:—"Several spaces in the refreshment courts, both under cover and in the open air, will be assigned to eminent nurserymen and florists. 1. The spaces to be assigned to them must be kept supplied with fresh and interesting plants during the whole period of the Exhibition. 2. The Exhibitor will be permitted to sell cut flowers, but not plants in pots; he will, however, have leave to distribute his sale cards and catalogues. 3. The names of all plants and flowers must be attached to them."

The citizens of Louisiana, among other objects, have sent specimens of SUGAR and PEPPER to the EXHIBITION, and have intimated, that after the Exhibition is closed the sugar is to be presented to the old Pensioners of Greenwich Hospital, and the pepper divided among Prince Albert, the Duke of Wellington, and the Central Committee! The arrangements on the Foreign side are not very forward. The Austrians are now in good humour, erecting their suite of rooms at the north side of the building, as proposed by the Executive Committee, who objected to their stopping up a 900 feet passage on the south side.

The very gratifying INCREASE in the EXPORTS of our MANUFACTURES of all kinds, as compared with those of last year, is a fact worth preserving in our JOURNAL. Selecting those classes of articles connected with Design, we find cotton manufactures, in 1851, 114,000,000 yards, against 94,000,000 yards in 1850; earthenware, 5,977,163 pieces, against 5,060,628 pieces; glass bottles, 24,610 cwt., against 19,401 cwt.; linen manufactures, 10,882,437 yards, against 9,349,865 yards; sewing thread, 150,000lb. against 141,000lb.; linen yarn, 1,122,000lb. against 786,000lb.; wrought-iron of all kinds, 7041 tons, against 6406 tons; silk stuffs, handkerchiefs, and ribbons, 66,839lb., against 34,278lb.; woollen manufactures, 180,000 pieces, against 142,000 pieces, 4,597,000 yards against 4,056,000 yards; and woollen yarn, 6122 cwt., against 4591 cwt. The total declared value of all articles is 4,817,870*l.*, against 4,069,431*l.*, making a difference of no less than 748,439*l.* in favour of the Exports for January, 1851.

We are glad to be able to preserve so good a report of the PROGRESS OF IRISH MANUFACTURES as that which Lord Clarendon made on his late visit to Belfast. He said,—"It is now upwards of twenty years since I visited the north of Ireland, and you must permit me to offer you my heartfelt congratulations upon the improvements of every kind which, during that period, have taken place in your town. I have had the gratification to have observed myself, and to have learned from authentic and official sources, that this improvement is almost, if not alto-

gether, without parallel in the history of commercial enterprise. I understand that in the year 1829 the first spinning factory was established in Belfast—that magnificent one of Messrs. Mulholland, which I visited to-day. Since that time I understand that more than twenty million pounds sterling have been invested in the machinery of your factories, and that between 300,000 and 400,000 spindles are now at work in Belfast. From the year 1839 to the year 1847 the increase in the number of persons employed in factory labour has been in Scotland 13½, in England 30½, and in Ireland—by which I suppose is meant the north of Ireland—it has been no less than 52 per cent. I believe that the exports of linen from Ireland are upwards of four million pounds sterling, and that, directly or indirectly, 300,000 persons gain their livelihood from this unrivalled national manufacture. And, if it be true, as I have reason to believe, that the imports and exports of Ireland are nearly one million sterling greater during the last year than the year before, and that the shipping of this port has now become fifteen times greater than it was sixty years ago, and that within the eight months of the present year it is 60,000 tons greater than during the corresponding months of the last year, and that to these facts another fact must be added, which is, that within the last thirty years the population of Belfast has considerably more than trebled—I think that all this presents an astonishing picture of the industry, energy, and perseverance of Belfast." We shall shortly return to the subject of the flax manufactures in Ireland, which is a most important question for manufacturers.

Our readers well know that we have no toleration for SHAMS and IMITATIONS of any kind, as we consider them destructive of good art: among them we certainly reckon stucco. Upon this subject we have met with in the *Builder* some sound remarks by Mr. Garling, which we may preserve in our columns:—"The real source of the satisfaction we derive in the contemplation of architectural decoration executed in *constructive* material, be it stone or brick, is the idea it suggests of the union of decorative features with constructive requirements, and the meaning and propriety which such decoration thereby acquires. It is, in truth, nothing more than a tacit acknowledgment, a sort of homage, *unwittingly* paid to the truths and reality of this last great principle of propriety in architecture, which requires that art be the handmaid of necessity, convenience, and utility,—decoration the drapery of construction, beauty, and proportion, either in detail or in mass,—the skilful and artistic arrangement of those features which the purpose of the building demands, or the constructive framework of the edifice requires; and it is the absence of this *constructive necessity* and propriety, irrespective of other qualities which may be disputed, that renders the use of cement distasteful and unsatisfactory, not only to the educated professional eye, but even to the instinct of sound sense and correct taste. It cannot, indeed, be denied that cement is purely a decorative and not a constructive material, and that this constitutes its real difference from stone when adopted for ornamental purposes, that the true and legitimate application of architectural ornament is to decorate essential members of architectural construction, and not to conceal their purpose, use, or meaning; and, consequently, that the employment of cement to imitate the decoration of stone construction is an architectural solecism we should never *defend*, although we may admit its use under certain extenuating circumstances."

BIRMINGHAM AND ITS CONNEXIONS.—We have fully described these in vol. ii., but we find so graphic a summary of them by the *Morning Chronicle*, in one of their articles on Labour, that we are induced to quote it: — There is scarcely a house in Europe or America that is not indebted for some portion of its luxury or its comfort to the enterprise and ingenuity of the men of Birmingham. We place our feet in winter upon a Birmingham fender, and stir a Birmingham grate with a Birmingham poker. We ring for our servants with a Birmingham bell, and we write our letters of business and affection with Birmingham steel pens. Birmingham supplies our tables with spoons and forks, though not with knives, and our bed and window curtains with rods, rings, and ornaments. We cannot dress or undress, whether we be men or women, without being beholden to the aid afforded us by Birmingham. It is that town which supplies half the globe with buttons for male costume, and with hooks-and-eyes for the costume of ladies. Pins and needles, and thimbles, principally come from Birmingham; and we never sit upon a chair or table, or lie upon a bed, or tread upon a floor, without deriving advantage from the industry of the metal-workers of that town and neighbourhood; for Birmingham supplies England, Scotland, and Ireland, and many parts of the European and American continents, with nails, tacks, and screws. Not only in life, but in death, we have recourse to Birmingham. There is scarcely a coffin that is laid in the lap

of earth within the limits of Great Britain that is not held together by the nails, and ornamented with the plates and handles and other funereal gewgaws, of Birmingham. The Australian ploughs his fields with a Birmingham ploughshare, shoes his horses with Birmingham shoes, and hangs a Birmingham bell around the necks of his cattle, that they may not stray too far from home on the hills or the rich pasture lands of that country. The savage in Africa exchanges his gold-dust, his ivory, and his spices, for Birmingham muskets. The Boer of the Cape shoots elephants with a gun expressly made for his purpose by the Birmingham manufacturers. The army, the navy, and the East India Company's service, draw from Birmingham their principal supplies of the weapons of destruction—the sword, the pistol, and the musket. The rifleman of the backwoods of Canada and the Hudson's Bay territories would be deprived for awhile of the means of trade or sport, if Birmingham should cease its fabrication of gun-barrels and locks; and all the tribe of sportsmen, whether they frequent the jungle, the moor, the mountain, or the lake, carry on their recreations by the aid of Birmingham. Even the far distant men of California are obliged, in default of policemen, to defend their treasures by Birmingham guns, dirks, and daggers. The negroes of the West Indies, and the slaves of Cuba, cut down the sugar-cane with Birmingham matchetts; and grass is mowed, and corn is reaped, in England and the Antipodes, by scythes and sickles of its manufacture. In large and small articles it is equally industrious and equally successful; it turns into the world millions of buttons, and millions of pins, pens, nails, screws, hooks-and-eyes, per day, and even per hour; and administers to a greater extent than any other town in the world to the comforts, the conveniences, the necessities, and the luxuries of civilised life. The town is *par excellence* the town of metal, and fully nine-tenths of its population depend for their subsistence on the various manufactures which it carries on in iron, steel, zinc, brass, copper, gold, silver, electro-plate, and the substantial as well as the showy goods which it daily turns out in all these materials.

Novelty in connexion with Locks.—An ingeniously constructed lock was lately exhibited at the Society of Arts. It was stated to be the invention of Mr. Thomas, an American, and has been patented both in America and England. The lock itself is constructed upon the permutation principle, and the points of novelty are as follows:—Within the lock a circular iron box is placed, which shuts off from the bolt, &c., every instrument which may be attempted to be introduced, except the key, which is composed of two parts, one sliding within the other. This, when placed in the keyhole, is too short to unlock the bolt. On the face of the lock, within the circular box, is placed an eccentric, upon which is raised a pin. When the key is introduced into the lock, the pin passes into a hole in the ward portion of the key, so that when it is rotated the circular box and the eccentric are rotated with it, the pin upon the eccentric elongating or shortening the key as it advances to or recedes from the most distant point from the centre of motion. As the box rotates with the key the top of it passes in front of the keyhole, thus rendering it impossible to introduce a second instrument.

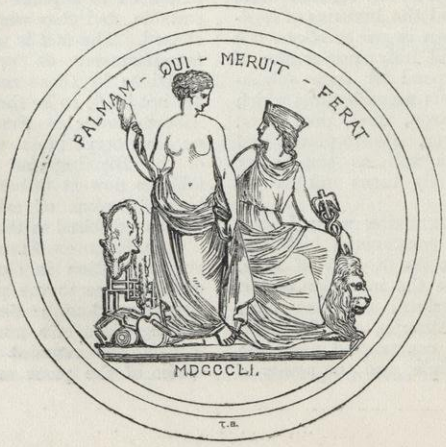
Cottager's Stove.—A stove, the invention of Mr. Grant, has been presented by him to the Association for Improving the Dwellings of the Industrious Classes. It is capable of cooking 200lbs. of meat and 100lbs. of potatoes with 15lbs. of coal, at a cost of 2*d.*

One of the most remarkable churches for its artistic completeness which has recently been erected, is that dedicated to St. Barnabas near to Chelsea Hospital. It was built by funds raised for the most part by the moving eloquence of Mr. Bennett, of St. Paul's, Knightsbridge. We were glad to recognise on the altar some of these admirable specimens of Ecclesiastical Ornaments, which Messrs. Hardman exhibited at the last Birmingham Exhibition, and we believe St. Barnabas' Church really owes its possession of them to that exhibition. When persons were seeking about for objects to present to the church, Messrs. Hardman's productions, exhibited at Birmingham, were instanced to a pious lady as being very suitable, and they were accordingly purchased. The fact is worth notice by our manufacturers as proving that their exertions in these races for excellence are not likely to be thrown away. Prince Albert's order to Messrs. Elkington for an electrotype table, was another result of the Birmingham Exhibition. The table is now at Osborne, and is a very beautiful work of art-manufacture. It will be exhibited in the Crystal Palace.

The Hall of Flaxman.—This excellent institution in Gower Street, which owes its rise to the poet Campbell and Lord Brougham, is henceforth to be the abiding place of a multitude of original models, the remains of art from the studio of the pious and immortal Flax-

man. They are arranged in the new library, the entrance-hall, and in a gallery connected with it. The University College of London has added to its worthiness and attraction by thus associating art with science, an union ever to be wished. The entrance-hall receives the more important of the sculptor's original models, of which the collection consists. It is octagonal, and from the windows round the top at present receives too much light, which, however, may be easily subdued. The apartments, on the whole, are well adapted to exhibit works of art, and, when complete, will form worthy receptacles for the honoured thoughts of our poet-sculptor. The entrance-hall is decorated with the original relievi models let into them of the "Lord's Prayer," the "Acts of Mercy," &c.; and the centre is occupied by the noble and well-known composition of "Michael and Satan," being the original full-sized model from which the marble group in the Egremont collection was worked. It is particularly well fitted for metal, and should be cast in bronze for the nation. This group is admirable as a work of the highest art, and shews at the same time how in consonance are the highest qualities with decorative completeness, which it thoroughly possesses, being symmetrical, picturesque, and ornamental in its details, and forming a perfect centre decoration to the hall that contains it. This apartment is the only one as yet arranged, and it has been done with taste and judgment. The reception of these honoured works within these walls is a credit to all concerned, for it is a great boon to the public, and the world in general, to possess here collected, and of easy access, works that breathe at the same time purity and art, that instruct while they charm, and instil together poetry and refinement and affection.

Woollen Cloths for the Exhibition.—Messrs. Bull and Wilson having offered two gold medals for the best black cloth and black doeskin manufactured in England, without limit as to price, a competition between the manufacturers of Yorkshire and the West of England has been the result, and some cloths have been produced probably unequalled in quality by anything hitherto made in England. The goods were sent in under a mark, with sealed particulars. Mr. Jas. Tucker. of Noble Street, City; Mr. J. G. Strachan, Basinghall Street; and Mr. Jos. Harrop, Delph, Yorkshire, were the umpires, and were kept ignorant of the district or manufacturer from whom each article had been received until after they had given their decision. On the 3d March the judges met to make the award, and both of the gold medal prizes were carried off by the Gloucestershire manufacturers, a result which might have been partly anticipated. The specimens from Wiltshire, which gained the second prize of a silver medal, were also of a high character, while those from Yorkshire were very superior to the general production of that district. The number of competitors was ten, and the number of specimens received in competition twenty-one. The successful candidates who obtained the gold medal, value 100 guineas, for the finest and best cloth, were Messrs. J. and D. Apperly, Stroud, Gloucester: silver medal for the second best cloth, Messrs. Edmonds and Co. Bradford, Wilts. The gold medal, value 100 guineas, for the best black doeskin, was awarded to Mr. William Hilme, Stroud, Gloucester. We give a drawing of the medal, which has been executed. It is one of those submitted in the competition for the designs for the prize medals for the Great Exhibition, by Mr. Adams, who obtained one of the 100 guinea prizes.



Original Papers.

THE ASPECT OF THE EXHIBITION AT THE QUEEN'S VISIT, ON THE 15TH APRIL.

BEFORE the present number is in the hands of many readers, the doors of the Exhibition of the Industry of all Nations will have been opened. It would be premature to affect to foresee the great impression which the work will make when completed. When all is in order, the process of how it has been obtained, and how it looked in chaos, will have been forgotten. We, therefore, think our readers will like to have some record of the state of the works as they appeared just before the opening, say the evening of the 15th April. A correspondent sends us his impressions of his visit; with these, and a few remarks of our own, we shall attempt a sketch of the present state of the

(PURITY, exhibited, life-size, by John Bell, Sculptor.)

great glass hive of industry, thronged with its thousands of busy labourers and directing exhibitors.

Entering at the south transept, and passing under the shadow of the great elm, just budding into leaf—to which and its two remaining brethren at the north end, we are indebted for the beautiful arch that spans that portion of the building—we find ourselves at once in the centre of the great edifice, in the midst of carpenters hammering at the floors, painters grinding tons of white lead in a shed, smiths fixing the Coalbrookdale gates, bricklayers at the

foundations of Oslers' fountain, Mr. Lough superintending the safe carriage of his "Puck," Mr. Thorneycroft giving the finishing touches to the equestrian statue of the Queen, Dr. Royle filling the glass cases with the East Indian collection, &c.; a "traveller" enables workmen to affix the last ties to the roof; painters, like spiders, are crawling in and out the girders to give them the last touches of decoration; the skeleton of the Spitalfields silk trophy is appearing; and the Queen with the Prince, and their two eldest daughters, is in the midst of the strife of labour. "A glance satisfies us that a true success is achieved, and that even the painting, about which there have been so many words, is not so bad after all; on the contrary, indeed, its effect is most harmonious and appropriate, especially in the far distances of the roof, where the prevailing tint of blue so similates that of the heavens on a fine day, that we appear literally *sub cælo*, and holding a great fair in the open air,—a vast out-of-doors holiday! Where we now stand, in the centre of the building, although the painting has been nearly completed, we are in what is necessarily the least finished part, as far as the the erection of stalls is concerned,—this spot, as most central, having been the principal place for the unlading of goods, especially of the foreign department; and therefore its flooring and that of half of the western nave, which formed the passage for the waggons, which is appropriated to British goods, have been delayed being put down till the last few days." When the foreigners were told that the temporary entrance would be closed on the evening of the 2d April, they were incredulous. They came the next morning, and found not only the entrance closed, but twenty feet of floor-boards laid across the nave, and the derricks and cranes removed and fixed at the east end. *Then* for the first time they believed the opening would, in truth, take place on the 1st May, and from that time they seemed to awaken and to go to work in right earnest. The foreigners had much advantage over us, as their portion of the nave had been floored for at least a month before the western part, but they did not avail themselves of it. At our end, however, British energy made up our leeway, and we are rapidly giving good promise of early completion. "The visitor, after regarding the transept, and speculating on its arrangement and the light it will afford for large works of British statuary, which are intended to be placed there, and attempting to realise the effect of the great centre glass fountain, and perhaps imagining that it will appear like a beautiful iceberg spouting up its just uncrystallised showers to cool the sultry air of July, proceeds naturally along one or other part of the nave (the foreign one probably first, as curiosity will most probably lead him there), in case he has become possessed of the magic talisman of the place in the shape of a little green ticket, written on, 'Special pass everywhere.'" He peeps in awhile into the hoardings on either side, and in quick transit, not to be exceeded even by our promised balloon travelling, makes rapid incursions by turns into Tunis, where the national yellow prevails in the covering of the walls,—into Austria, and finds moustachioed carpenters and joiners laying parqueterie floors, and carvers giving the last touches to magnificent furniture,—into the crimson-coloured sculpture hall of the Zollverein,—into Switzerland, beginning to uncover its laces and embroideries,—into France, where he sees little but the fixing of machines,—and into the United States, where vacancy too much abounds, &c. In all are all sorts of matters which a rapid glance tells are characteristic of their origin and country. The nave of the foreign department appears as if it would be chiefly filled with matters of art. Several colossal works of sculpture are already raised on their pedestals. First comes M. Le Seigneur's group of St. Michael and Satan, vigorous and French, which (the angel wearing petticoats and the devil having a ferocious tail) we overheard two English workmen protest to be meant for the Queen killing the Pope! Next a bronzed zinc group, far above life-size, by Kiss of Berlin, of an Amazon slaying a tiger that has seized her horse. Next a colossal bronze lion, apparently cast in one piece. The Austrians are fixing a fine group of "Mazeppa." Few works, specially of industry, have as yet been opened out in the foreign departments: among those to be seen may be mentioned some striking metal and glass work from Holland, and a fine collection of stuffed animals from Germany, which will be one of

the magnets of the Exhibition for children of all ages. The productions of our American brethren will shew their Anglo-Saxon origin, and assimilate more to the contents of the western than the eastern division of the building. Enough is already to be seen in the foreign divisions to convince the observer of the great amount of most interesting and various matter that will be displayed to the world, and to raise in him a feeling of restless impatience. "The world is answering our invitation, accepts our hospitality for itself and its productions, and will meet in both ways at our great fair of Nizi Novgorod; for here, as at that great Russian event, do we begin to see the inhabitants of many nations; the Turk, Greek, African, &c., as well as our better known relations and friends the Americans, French, Germans, and Russians. As in that great fair, where, it has been said, are to be met the natives of all countries in their own costumes, so we hope they will here keep up their distinction of dress, and thus perhaps instil into us more improved taste in our national garments." We are glad to see that the Turks and the Tunisians preserve their national garments, and we may hope that the inhabitants of all nations, on visiting our great show, will retain their distinctive clothing. Before we quit the eastern end we notice the preparations of the Exhibitors of all nations for shewing their stained glass in the northern gallery. The French have fixed several windows which at present put the British glass into the background. But Mr. Wailes is still behindhand with his fittings, so we will not be hasty in judgment.

Having in some sort taken the extreme edge off our curiosity by our incursion into the foreign territories, we hasten back and cross the transept and compare notes with our own productions. "Here," says our correspondent, "we are in the midst of bustle of all sorts of people, running about as busy as a swarm of ants on a sudden fine day. Exhibitors, labourers, officials, all hurrying about,—ordering, working, arranging, putting up fittings,—apparently in a bustle, but really in order; policemen guarding the divisions, and sappers and miners, appropriately in this temple of peace turning their 'swords into ploughshares,' busily employed in peaceful occupations, and engaged in lifting and placing in their appropriate positions the triumphs of patient industry. This itself is a pleasant spectacle, as well as that of the many first-rate workmen from all firms and manufactories, that have been selected and sent as the best men to arrange and complete their several contributions. Indeed, it is a peculiar feature of the present state of the arrangements, that there is probably at the present time together, in the great glass hive, a greater collection of first-rate workmen, from many countries and of various branches of industry, than were ever before assembled together at one time and place. It is, to speak with due deference, the obverse of the building of Babel. To be sure there are many languages spoken, the more the pity, but there is no confusion. We cannot repress a feeling of pride, which we presume to call honest, in the display of energy and well-directed labour we see in our own division, and in the sturdy products of British industry which are quickly arising." Even along the nave will appear our commercial characteristic, although Mr. Thomas is building one fountain and Mr. Papworth another; and Mr. Bell is finishing his Shakspeare and Una and the Lion; and Mr. Watson's fine statues of the brothers Scott, Lords Eldon and Stowell, are already fixed on their pedestals; the chief features of the British portion of the nave will be representations of commerce rather than art; of our modes of building, and our trophies of iron, silk, cotton, and other substantial branches of our industry, which in the compartments at the sides of the nave will be visible more in detail. The courts appropriated to our unexampled machinery and our implements of agriculture, are full and nearly arranged. The locomotives are to arrive on the 19th. The East India Company, early in the field, are fitting up and arranging their contributions from their own vast empire. The show from Canada is nearly in order, having been arranged by Mr. Semper, the architect of the Dresden Theatre, who is called the "Barry" of Germany. The delicately-chiselled stone vases from Malta are already in the nave. The Mediæval room of Gothic decoration is rapidly advancing, and Sir R. Westma-

cott is busying in the sculpture court. Above the galleries, it is curious to note the infinite variety of cases in progress for goldsmiths' work, pottery, glass, &c. A few days will, doubtless, see the goods themselves displayed.

All this goes on amid the perpetual din of workmen and occasional roarings of Mr. Willis's great organ, said to be the largest in England, which now and then tries its lungs to get them in order, no doubt, for the National Anthem on the 1st of May, which will peal forth to welcome our Queen to her Crystal Palace. Our correspondent goes on to say, "Call it what you will, with its admirers entitled the World's Fair! the Temple of Peace! the Crystal Palace! the Alhambra of Commerce! the Palace of Industry! or with its detractors sink these appellations, and substitute those of the Great Green-house or the Great Glazed Railway Station; yet we defy any Briton, with his heart in the right place, to enter and walk through the edifice for the first time, even in its present state of incompleteness, without feeling proud that we were the first nation to do all this, and that the future annals of the world will have to record that England first stepped forward to welcome all nations to her shore, and to provide such a reception for them and their works of industry. We doubt not that by the 1st of May the promises will be realised, and the great mental feast ready for the thousands of guests eager to partake of it."

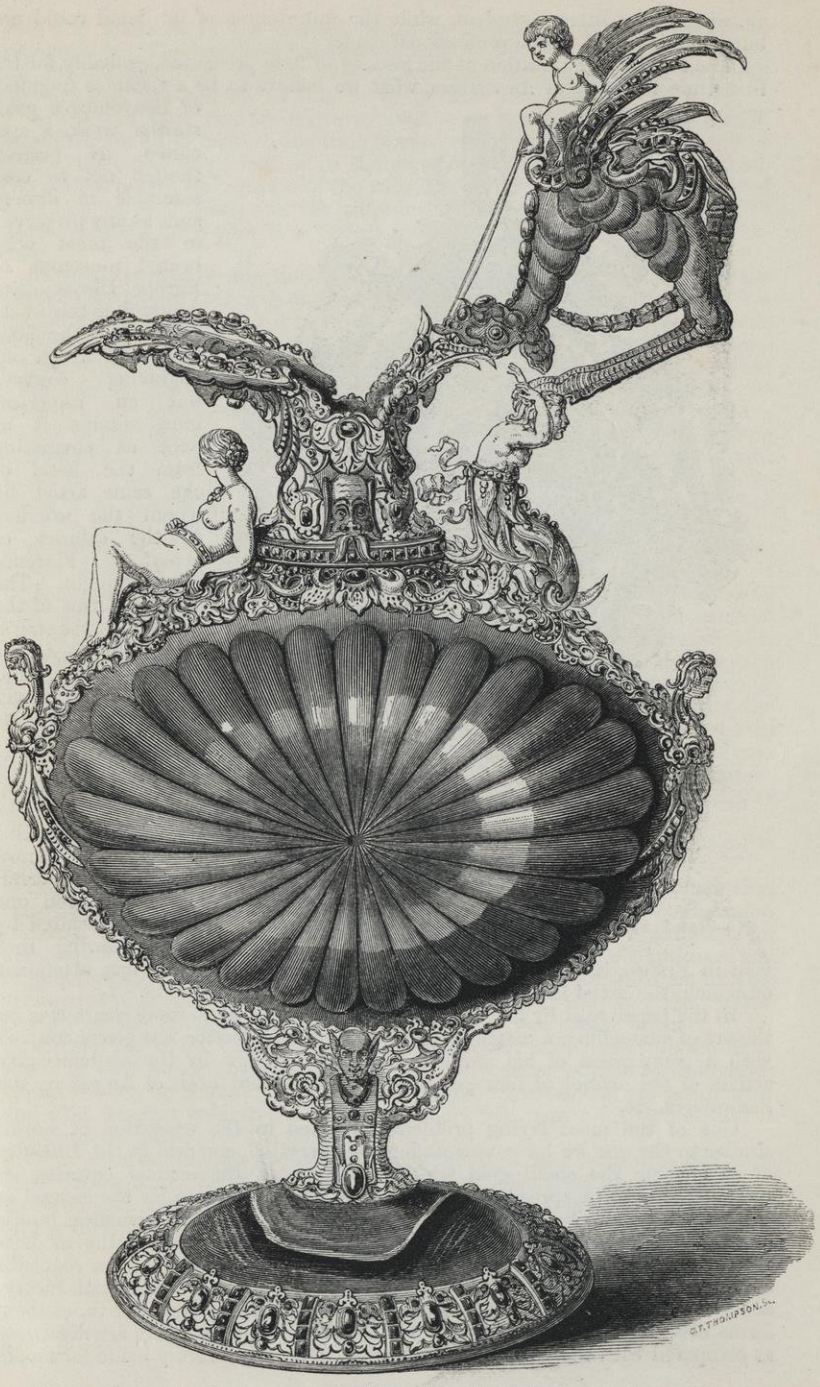
THE SLUMBER OF MODERN GOLDSMITHS.

It is a singular fact, that while every one of any respectable education is familiar with the name and merits of Benvenuto Cellini, and discourses fluently on the wonders of his handicraft, so little should be popularly known of his productions in art, or of the processes by which they were elaborated. This deficiency of precise information in the matter of his works may be readily accounted for by their comparative rarity; but, in the case of the processes, it is somewhat remarkable, since the artist, in his celebrated Treatise on Goldsmiths' Work, has revealed every mystery of his craft, and drawn up that curtain of the marvellous which he had himself, in his Autobiography, cast over every action and proceeding of his life. One would have imagined that no goldsmith, jealous and zealous for the advancement of his "craft and mystery," would have failed, as a first step to success in life, to have studied deeply the "wise saws," sound advice, and pithy precepts, afforded to him in the writings of the man whose name rises first to his lips, when it suits his purpose to boast to the world of the great artists who have condescended to work at the goldsmith's table. And yet we very much doubt whether one out of fifty of the very respectable jewellers of the day, men probably worth more money than Cellini ever boasted of having spent, could tell the nature of the contents of the celebrated "Trattato dell' Oreficeria."

The only inference to be drawn from this circumstance is, either, that there is nothing worth reading or knowing in Benvenuto's treatise, or that some of the parties whom it may most concern are fast asleep. Now, as we have every reason to believe that there is much most pleasant and profitable matter concealed beneath the great Florentine's pomposity of style, so we cannot well help throwing ourselves on the latter horn of the dilemma, and concluding that a somewhat unhappy listlessness is the spell which binds many a "sleeping beauty" we would fain recall to life and activity.

The Exhibition of 1851 will, perhaps, develope energies and capabilities hitherto unrecked of; but even if it should prove that our insinuations as to the influence exercised by the drowsy god over the workers in the precious metals are vile calumniations, it will not be able to shew any sufficient reason why it should be necessary to send to Paris to get a piece of fine enamelling done, when a few hours' reading would reveal to any one anxious to cultivate the art the exact practice followed by Benvenuto, and the precise rules for the tender manipulation of the graceful Caradosso.

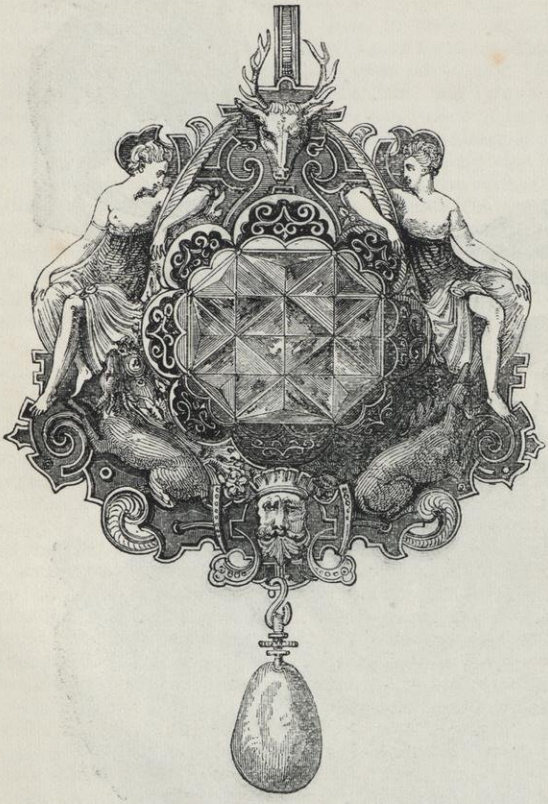
The question naturally presents itself, why has not Cellini's treatise been translated? Its pleasant, gossipy, pragmatical style alone would render it



(ITALIAN EWER of Sardonyx, mounted in Gold, and enriched with Precious Stones; belonging to the Viscountess Beresford.)

amusing to the literary student, while the minuteness of its detail could not but make it useful to the professional reader.

The Mediæval Exhibition at the Society of Arts presented, probably for the first time to many of its visitors, what we believe to be a veritable fragment of Benvenuto's goldsmiths' work, a specimen as perfect, though not as considerable in dimension, as any preserved in the most celebrated museums of Europe. The exquisite delicacy of the workmanship of the little brooch, of which our engraving conveys but an imperfect idea, stamps it at once as emanating from the hand of the same artist by whom the wonders of the cabinet of gems at Florence were wrought. The graceful forms of the huntresses, the stag's-head, the dogs, the crowned head, and the style, all connect it with the famous Diana of Poictiers; and from the whole aspect of the ornaments there can be little doubt that this treasure, which now belongs to Mr. Farrar, must have been one of those executed by Cellini during that visit in France, the jealousies, delights, annoyances, and squabbles, attendant on which, the artist has so graphically depicted in his memoirs.



(A Gold Pendant, with Pearl and Precious Stones, belonging to H. Farrar, Esq.)

In the paper read by Mr. Wyatt at the Society of Arts, some years ago, on the art of enamelling, a careful analysis of Cellini's practice was given, coupled with a comparison of his method with those in use by the contemporary artists of the school of Limoges, and the subsequent ones of Augsburg, the Zamnitzers, &c.

One of the most trying problems involved in the execution of works, similar to the one we have now under consideration, consists in the difficulty of so chasing the small gold figures, over which the enamel covering or *revêtement* has to be spread, as to leave just sufficient room for the enamel to bring the forms up to their right degree of fulness, without involving lumps of enamel which would be sure to fly in cooling. In many of the modern works which have been executed in France in imitation of Cellini, the requisite amount of allowance for the coating of enamel has not been made with nicety, and the figures are consequently sometimes too thin, and at other times their forms become coarse. Another point in which the modern works are defective, as compared with the ancient, is, that due allowance is rarely made for modi-

fying the thickness of the enamel pastes in proportion to their opacity or translucency. The beautiful transparent ruby is too often put on in lumps, and the comparatively opaque blues, which need body to produce their full sapphire tint, are laid on so thin as to produce but a washy effect.

In the exquisite vase we engrave, now the property of the Marchioness of Beresford, known to have at one time formed a portion of the crown jewels of France, the acmé of perfection in the style of enamelling has been reached. The perfect purity and sparkle of the ruby, the retention of full and rounded modelling in every part, and the adhesion of every portion of the vitrefied pastes, combine to render it a perfect model for the study of the art-workman.

Whether it may or may not have owed its existence to the fancy and the marvellous hand of Cellini is a question to be decided by connoisseurs: it is enough for us to know that it is very beautiful, and that it affords an example the study of which ought to lead our goldsmiths to the execution of something at least equal to it in quality of work. As to the principles of design involved in its form, an object of this description scarcely bears minute analysis. To enter into the proprieties of placing a naked woman here, a cupid there, a dragon in one place, or a masque in another, would be equal to demonstrating Rochefoucauld to be illogical, or Shelley impractical, in his views on social economy. Perfectly satisfied reason and commonsense are by no means indispensable to enjoyment, and in the prurient productions of a teeming Italian fancy we pardon extravagancies in the jeweller we should rank as detestable in the sculptor. We may fondle the spaniel that jumps upon our laps, but we should view with a very different grace the gambollings of the donkey.

In reading the works of Cellini we cannot but be struck by the varying gusto with which the artist describes his own works. In making mention of a work of high art he gives but few details, telling in general terms the subject, and the grace and dignity with which he had treated it. When, however, he descends from his stilts to talk of one of his darling pieces of "*minuteria*," he dwells upon every detail—the little masques, the birds, the insects, the flowers, the cupids, the animals, &c.—with all the exactitude of a lover in dilating on the charms of his mistress. It is curious to trace how far the conceits of the painted grotesques, and of these "Moses, Venus, and Nicodemus" pieces of jewellery, may have tended to engender the elaborate conceits of Guarini, Marini, and the subsequent Italian poets.

To turn from poetry to prose, there yet remains for us to notice, in a few words, the splendidly-mounted Nautilus Cup.

To our notion it conveys an exact illustration of the way in which Germany caught from Italy, in such works, much of the body, although, unfortunately, but little of the spirit, of Cellini. Making up by elaboration for deficiencies in refinement of form and details, the effect of magnificence was frequently gained; but as in work executed in the precious metals an extreme refinement of proportion and execution is indispensable, Germany the "industrious," as Theophilus so justly calls her, now and then breaks down.

On the whole, the Cup is a fine specimen of such work; and if in the Exhibition of 1851 we see any three similar or corresponding objects so thoroughly commendable, we shall hope that the last snore of listlessness has been heard, and that English gold and silversmith's work will take a fitting position in the great competition of the day.

The wood engravings which illustrate this notice have been obtained from the "Choice Examples of Art-Workmanship," selected from the Exhibition of Ancient and Mediæval Art at the Society of Arts, a volume of great beauty and utility, published by Messrs. Cundall and Addey.

(Silver Gilt Nautilus, xviith Century, belonging to Messrs. Garrard.)

Satin Cotton,

Printed in Nineteen Blocks of Colour, by Hargreaves, for Liddiards,

Exhibited in the Class of Printed Fabrics, at the Great Exhibition of the Works of Industry of all Nations in 1851.

Printed in Eighteen separate Blocks, by Hargreaves, for Liddiards,

AND

Exhibited in the Class of PRINTED FABRICS at the Exhibition of 1851.

New Lavender Colour,

Produced in Muslin by Hargreaves, for Liddiards,

AND

Exhibited in the Class of Printed Fabrics at the Exhibition of 1851.

Printed by Inglis and Wakefield,

AND

Exhibited by them for brilliancy of colour on cotton and wool, in the Class of PRINTED FABRICS, in the Great Exhibition of 1851.

BALZARINE,

Printed by Inglis and Wakefield,

AND

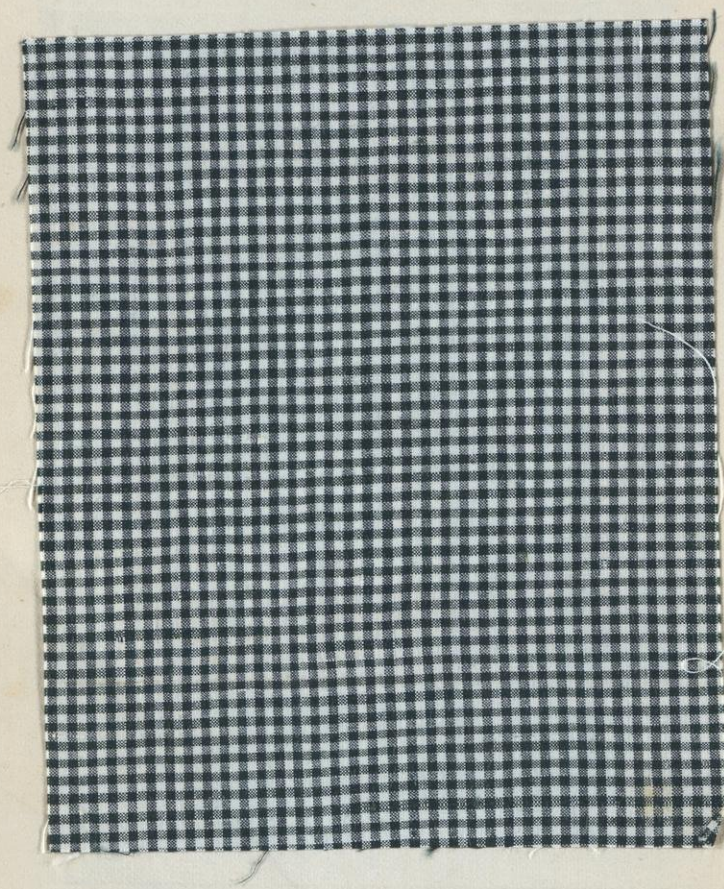
Exhibited by them in the Class of PRINTED FABRICS, in the Great Exhibition of 1851, to shew their new patent dahlia colour.

Printed by Inglis and Wakefield,

AND

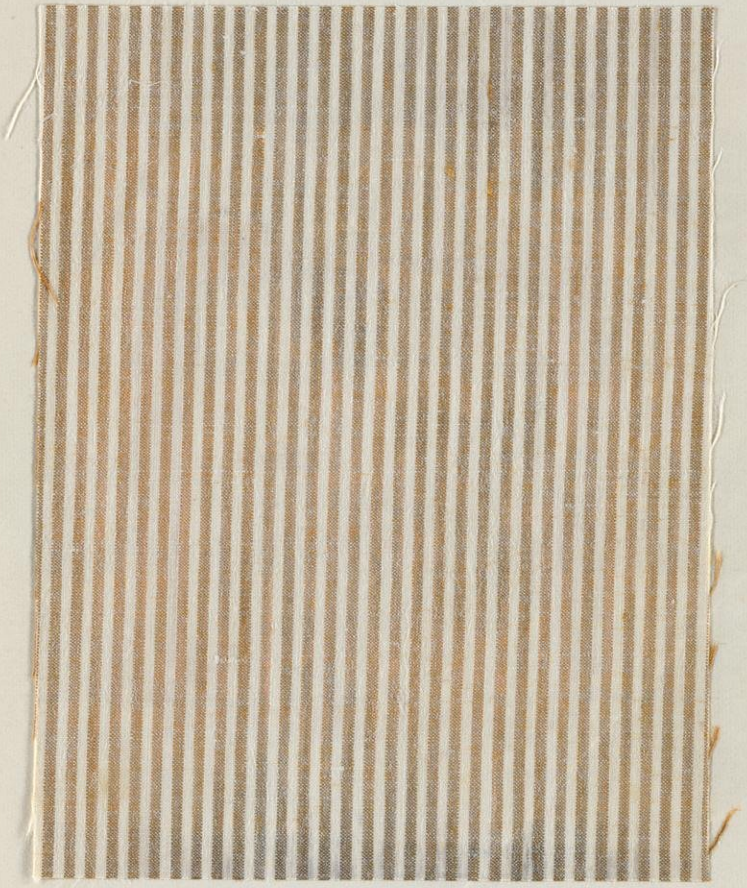
Exhibited by them for extreme cheapness of production, in the Class of PRINTED FABRICS, in the Great Exhibition of 1851.

Manufactured by Lethem, Blythe, and Lethem, London, Glasgow, and Belfast.



Exhibited as a specimen of extra fine quality, in the Great Exhibition of 1851.

Manufactured by Lethem, Blythe, and Lethem, London, Glasgow, and Belfast.



Exhibited as a specimen of extra fine quality, in the Great Exhibition of 1851.

Manufactured by J. W. Ward, of Halifax.

Exhibited in the Class of MIXED FABRICS, at the Great Exhibition of the Works of Industry of all Nations in 1851.

Printed for the Indian Market by A. Orr Ewing and Co., of Glasgow.

Exhibited in the Class of BRITISH PRINTED FABRICS, in the Great Exhibition of 1851.

Printed for the Indian Market by A. Orr Ewing and Co., of Glasgow.

Exhibited in the Class of BRITISH PRINTED FABRICS, in the Great Exhibition of 1851.

WOVEN FABRICS EXHIBITED AT THE EXHIBITION OF 1851.

WHILST our contemporaries on all sides are exerting themselves to represent the objects of the Exhibition by wood-engravings, it will be our aim to apply our own peculiar plan of giving specimens of the actual fabrics themselves to illustrate the several classes of manufactures, susceptible of such a mode of illustration; and we are happy to be able to make a successful beginning thus early even in the present number. At the same time we may observe, that the natural anxiety of manufacturers to exert themselves to the utmost for this great occasion, and not to be satisfied with anything but the most perfect performances, has tended to limit the extent of our present selection. We hope to make it much more ample in future numbers. Manufacturers who may wish to avail themselves of the opportunity of thus perpetuating specimens of their efforts, after the Exhibition itself shall have passed away, will receive any assistance that may be in our power in meeting their wishes, and we request them to take an early opportunity of communicating with our publishers, and sending specimens of the fabrics they desire to be inserted. We do not propose to limit these to ornamental fabrics, but we shall be happy to insert cloths and woven fabrics of any kind whatever that have any peculiar merit to recommend them, either in process of manufacture, in the materials used, or in the design.

We do not pretend at present, before the Exhibition is opened, to make any comparison between the present examples and others which are likely to compete with them, either of British or foreign manufacture; we feel, however, that we may commend the whole of these specimens for their positive excellencies.

The three exhibited by Messrs. Liddiard are chosen from a stock more select than numerous, prepared to shew not merely all the kinds of printing for which their house has taken the lead for nearly a century, but also some novelties in dyeing and colours. The new lavender *muslin* presents a new mineral colour, the production of which is wholly due to the Exhibition, and was the discovery of Mr. Lightfoot, of Boak Works. It is of the same class as the ultramarine blue for which the French obtained deserved success some seasons back. As a colour it is both new and successful, and likely to be a favourite.

The brilliant and well-executed *butterfly* muslin is exhibited to shew an unusual number of printings in madder work. Upwards of *eighteen* blocks have been employed, and so true and delicate have the fittings and registers been kept, that it reminds us of the early days of fine chintz printing at Chelsea, when flowers were actually painted in by hand. The designer has evidently gone to nature direct for his models. The studies of the butterflies are characteristic, and the arrangement of them on the ground is well and equally distributed. But the greatest *tour de force* of Messrs. Liddiard is the *madder chintz* in fast colours, printed with *nineteen* blocks on satin cotton cloth. The difficulties of obtaining so much brilliancy and purity of colouring, especially in the shades of reds and lilacs on a black ground, every practical printer will understand, and the workman's skill in the printing is quite first-rate. Although Messrs. Liddiard, as being connected with Mr. John Hargreaves, one of the jury, cannot receive a medal, we think the workman might. The groupings of this chintz are very effective, and the designer in this, as in the former specimen, shews how attentively he has studied nature. This beautiful design is produced on all kinds of cloths, silk, silk and cotton, wool, and wool and cotton, so that every one, according to the length of her purse, may possess a dress of it. The colours on the *mousseline de soie* are most brilliant, and we may expect it to be one of the triumphs of the English printer in the Exhibition. We hope to be able to give other illustrations of Messrs. Liddiard's success in a future number.

As cheap fabrics for the Indian market, Messrs. Ewing's gay *cottons* are excellent. The colours in the pine pattern are brilliant and very harmoniously balanced. We are glad to notice that, although a general Eastern type has

been adopted, there is no attempt at the direct imitation of woven effects. Our streets would be much enlivened with dresses of such pattern, if fair wearers could be persuaded to adopt them.

The *damask* of wool and cotton, produced by Mr. Ward, of Huddersfield, is of excellent manufacture, and calculated for very general use, our old friend the *fleur-de-lis* always affording a welcome diaper, and a safe decoration in an apartment of any style.

We were glad to receive specimens from Messrs. Lethem, Blythe, and Lethem, proving that the useful homely *ginghams* of the north were likely to assert their merits in the Great Show.

Our readers are already acquainted with Messrs. Inglis and Wakefield's celebrity as printers of moderate priced fabrics for the general market. Their aim in the Exhibition has been rather to maintain this reputation, on which their staple trade is founded, than to produce any specimens out of their usual course of business, and the examples we insert will shew how well they have succeeded in this. Well may the French prohibit our printed fabrics, when specimens like these *balzarines* might be imported into France at something like 1*s.* a-yard. The *mousseline de laine* is shewn for its cheapness. Can production go lower than 5½*d.* a-yard for such a fabric?

INVENTIONS ACT AND NEW PATENT LAW BILLS.

THE Government Bill to protect inventions from piracy in the Exhibition has now become law. It has passed nearly in the same state as we described it in our last number (p. 43), with the addition of a clause including within the scope of the protection any agricultural implements which may have been shewn on trial. The Act comes too late to have much practical effect on the Exhibition, but it is of great use in furnishing an avowed recognition of the *rights of property* in invention. The preamble, "That it is expedient that protection should be afforded to persons desirous of exhibiting new inventions in the Exhibition of the Works of Industry of all Nations in 1851," will be quoted with effect, and used long after the occasion shall have passed away which called it forth. If it be sound policy to acknowledge inventive rights in the Exhibition in Hyde Park, why not out of Hyde Park? If inventors deprecate piracy there, will they not do so elsewhere?

But the Exhibition is already producing more substantial fruits than this ephemeral Act, and we have before us two Bills to amend the patent laws, introduced to the House of Lords—one by Lord Brougham, and the other by Lord Granville, on the part of the Government. Both of them would effect great improvements on the present system. Lord Brougham's Act simplifies the process of obtaining letters patent, but still retains the Great-Seal machinery and the Queen's signature. The fees at the outset are reduced to 30*l.*, which give powers to last for three years. Then 40*l.* is to be paid for four years, and then 70*l.* for another seven years. The Act does not say who is to take the fees or how they are to be applied; but we presume they are to go to the Patent-office. One patent is to be valid for the whole United Kingdom, and provision is made for a better publication of indices, &c.

Upon this Bill the *Morning Chronicle* ably comments, and much that is said on the principle applies equally to the Government Bill:—

"Lord Brougham lops off the more odious excrescences of the system, and pares down its exorbitant exactions to what seems, by comparison, a very bearable *minimum*; but he tacitly adopts and ratifies the hypothesis on which the whole rests, viz., that inventors have, properly speaking, no *rights* whatever, and that the favour conveyed in a royal grant of the exclusive use of their own intellectual property is a fair subject of arbitrary taxation. While we cordially thank him for what he has done, we cannot say that we desire the legislative adoption of a measure which tends to perpetuate an injustice by pruning away its more salient and offensive exaggerations.

"Before alluding further to what we conceive to be the inherent flaw of his lordship's scheme, we will perform the more grateful task of enumerating the manifest

excellences which it presents when viewed with reference to the system on which it is engrafted. In the first place, the cost of taking out a patent is reduced, under this Bill, some hundreds per cent. At present, an inventor must pay little less than 100*l.* for a patent extending to England alone, and nearly four times that sum for the legal recognition of his exclusive rights throughout the United Kingdom, but Lord Brougham would charge him only 30*l.* for a patent co-extensive with the whole of the Queen's dominions, British and colonial. He proposes, however, to limit the duration of the privilege so obtained to three years, in the first instance—taxing the renewal of a patent with a stamp-duty of 40*l.* at the end of the third year, and with a further payment of 70*l.* at the expiration of the seventh year. In the next place, the whole machinery of suing for letters patent is essentially simplified. Instead of having to pass through *thirty-five* distinct stages of expense, delay, and vexation, before he can obtain a clear legal right to the fruit of his own brains, the inventor would have nothing more to do, under Lord Brougham's measure, than to lodge his petition, make out his specification, and pay his money. Among various minor, though far from unimportant, improvements in the existing system, we may mention that it is made obligatory on the Commissioners of Patents, not only to keep copies of all specifications, &c., constantly open to the inspection of the public at the Patent Office, but likewise to print and publish the same 'at reasonable prices.' We also observe that the Bill contemplates 'the preparation and publication of *indices*' to the patentees' specifications—a most valuable innovation on the present official routine, since a good classified index to inventions already patented would at once stimulate original thought and inquiry, and save projectors from throwing away their energies and hopes on schemes that eventually turn out to be mere duplicates of what has been done by others. On the whole, if we saw reason for believing that the system of Patent Law, which the present generation has inherited from the century before the last, rested on a fundamentally sound theory of the rights of inventive genius—in other words, if we could persuade ourselves that an age which identified projectors with alchemists, and alchemists with sorcerers, had miraculously hit on the true philosophy of an industrial question—we should at once give in our adhesion to Lord Brougham's Bill for 'further amending' the legislation of James I.

"But, as we have already repeatedly stated, we altogether demur to this postulate. We utterly dissent from the first principle of that ancient code which it is now proposed to improve and modernise. We see no more reason why the inventor of a new industrial implement or process should pay 30*l.* to the State for the exclusive right to use or work it, than why he should pay 100*l.* or 400*l.* We object, both on principle and on policy, to the notion of a special and exceptional tax on mechanical genius; and, therefore, a mere reduction of the tariff does not content us. In our view of the matter, an inventor's title to his intellectual property is not a favour to be sold, but a right to be recognised. It is already complete, in a moral point of view, *before* the State recognises it; and all that the State has to do in the affair is to verify, register, and guarantee it. To exact one farthing of taxation from the owner of this description of property, over and above the trifle which is requisite to defray the expenses of registry—to *fine* inventors for the benefit of the public exchequer—seems to us one of those barefaced acts of injustice to which nothing but the force of use and wont could ever reconcile honest minds.

"But our objection to this reduced 30*l.* impost on ingenuity is not one of abstract principle merely. We are convinced that, practically speaking, it will fail of realising the end which the author of this well-meant Bill has, we are sure, as much at heart as ourselves. It will not give a clear stage and fair play to that most meritorious, and perhaps most numerous, class of mechanical inventors whose only capital is their brains. An artisan, for instance, who devises some practical improvement in the machinery or the processes with which his daily work makes him familiar—and a very large proportion of modern patented inventions are of this description—can no more afford to risk 30*l.* on the chance of bringing a new idea into profitable operation than he can hazard thrice that sum. To a man who depends on his week's wages for his week's subsistence—and whose little savings (if he has saved) would at most only carry him through six or twelve months of 'bad trade'—the difference between 30*l.* and 100*l.* is very much like the difference between seven and seventy feet depth of water to a man who cannot swim. The position of a workman with a new and true idea in his head will be substantially the same under Lord Brougham's Bill as it is at present. Despite the seeming cheapness of patent right, he will not be able, in one case in ten, to take out a legal title to his invention *before* seeking a purchaser for it. His only practical alternative will still be that which it is now—either to keep his secret, or to trust to the honour and generosity of the capitalist (probably his own employer) to whom he first divulges it. Unless he has 30*l.* to lose—that is, unless he has 30*l.*

which, as a poor and prudent man, he would be justified in sinking for the sake of a remote and contingent profit—the market is closed against him. Of course nobody will buy his invention without knowing all about it; and yet, the moment it ceases to be a secret, it ceases, if unprotected, to have a particle of negotiable value.

"We trust that Lord Brougham will reconsider this vital part of the question before proceeding further with his measure. No Patent Law reform can be just or satisfactory which does not—at least to the extent of granting a preliminary or provisional registration at a nominal cost—enable the skilled and ingenious artisan to carry his invention into the open market and sell it for what it is worth."

Lord Granville's Bill is, in many important respects, an improvement on Lord Brougham's. In the first place, it would appear that the total fees for three years' rights are only to be 19*l.*, instead of 30*l.*; but far more valuable is the recognition of the principle of a *provisional registration* for six months, which is to cost only 2*l.*, and is applicable to the whole United Kingdom. In this, as in Lord Brougham's Bill, it is not defined how the fees are to be applied, and one of the clauses (No. 18) seems to point out that some unspecified fees are still to be paid to the Attorney and Solicitor-General. Minute criticism at present is needless, as both Bills are referred to a select committee in the House of Lords, where they will be discussed, and are likely to be modified. The Society of Arts Committee has had its due influence, and there is no doubt that it now practically rests with inventors and manufacturers themselves to determine the extent of the remedies they desire to have.

A COUPLE OF MISTAKES IN CANDLESTICKS.

Of the many hundred designs we have at different times examined in which a single figure does duty as Caryatid, we have scarcely ever seen one in which the great difficulties such a treatment entails have been successfully met and overcome. Sometimes the figure has to be grasped; sometimes a Hercules carries, with infinite muscular exertion, a load at the weight of which a school-boy would laugh; and sometimes a delicate female carries on her devoted head quite enough to break the back of a Samson. To the last of these anomalous classes the specimen in question belongs, and neither the grace of the figure, nor the light and pretty treatment of the cornucopia she is supporting, can reconcile us to the discrepancy between her proportions and those of the burden she is doomed to bear *in perpetuo*. The basket at the top is extremely elegant, and the execution of the whole tasteful and pretty. The base is a decided failure, being not only too heavy in mass for the rest of the design, but compounded of uncomfortable conventional shell-work, and directly imitative foliage. A little piercing would have rendered it much more pleasing.

We cannot say anything more favourable of the accompanying Or-molu Candlestick, which is a brilliant piece of tastelessness, and may be assumed as an indication of genuine *manufacture*, without one grain of thought or knowledge. Of idea it is absolutely devoid: what dolphins and tridents have to do with a candlestick we cannot imagine. Of proportion it is perfectly destitute. The base is too heavy, the stem too fat, and the socket too small. With form it is most scantily endowed, since nothing can be imagined more ugly than the junction of the inverted baluster stem and the trilobate base. What then is left of it? Nothing but the glitter of material and over-elaborated manipulation.

IMPROVEMENTS IN ELECTRIC TELEGRAPHS.

Of all the subjects which have occupied public attention during the past ten years, none have produced more important results than the discoveries which have been made of the properties and powers of galvanic electricity, and the means of applying those properties to useful account. It has become so essential to the action of our manufacturing and commercial interests, that we will avail ourselves of the present opportunity to notice some of the most recent improvements which have been made in the construction of the instruments used.

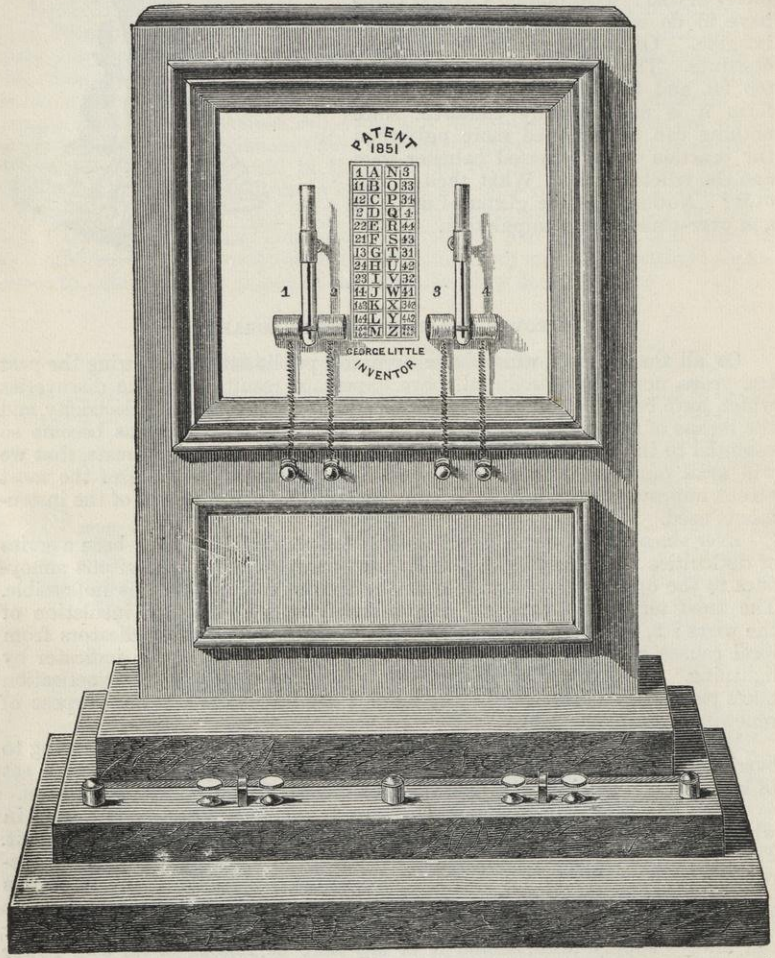
Ever since the introduction of electric telegraphs there have been a series of difficulties to contend with, which have proved a source of serious annoyance to the operator, and at times rendering the communications impossible. The most serious annoyances have arisen from,—1, imperfect insulation of the wires; 2, vibration of the indicators; 3, deflection of the indicators from local causes, and the destruction of the magnetic power of the indicator by lightning. The latter is by far the most serious, as whenever demagnetisation takes place, it becomes necessary to remove the indicators for the purpose of renewing their magnetism.

Mr. George Little has, for some time past, been studiously endeavouring to overcome these imperfections, with a view to which he has constructed a set of instruments, of which the following is a diagram, with a short description.

Upon the dial-plate of the instrument is mounted a moveable socket, in which are placed a permanent magnet and a small glass tube filled with a spirit. The magnet and tube are so arranged as to allow of a sewing needle being suspended by its point to the magnet, and within the tube. A coil of wire is placed on either side of the lower portion of the tube. The permanent magnet thus acts as a powerful reservoir of magnetism, whence the needle or indicator can always supply itself, should it at any time be robbed of its own power from any disturbing causes. Moreover, as the indicator is itself in immediate contact with and adhering to the permanent magnet by its point, the necessity for the ordinary axis is obviated, at the same time that a minimum resistance is obtained. On pressing down either of the keys at the base of the instrument, a current of electricity is made to flow through the coils of wire at the lower end of the glass tube, and immediately upon such current being set free the indicator or needle is drawn to the right or to the left, according to the direction in which the electricity is flowing. The spirit within the tube prevents vibration or jarring of the indicator, while by the motion of the needle

from side to side, which may be repeated with any degree of rapidity, the letters of the alphabet can be readily indicated or words formed.

The advantage of this instrument consists in its simplicity and smallness of cost, and in the facilities which it affords the operator for replacing the indicator, should the one in use become demagnetised by lightning or other cause. Should the needle be deflected either to the right or left from some disturbing local action, the socket being capable of rotation, such deflection can be compensated for by throwing the glass tube out of the perpendicular in the



required direction; also a minimum of battery power only is required to work the instrument.

A second form of instrument is as follows. Instead of the needle a small float is placed in the spirit within the tube, and is retracted or repelled according to the direction in which the current is made to flow through the coils. By the number of times it rises or falls any particular letter of the alphabet is indicated. The excessively simple form to which Mr. Little has thus reduced telegraphic instruments is calculated much to reduce the cost of working long lines, and advance the practical application of electro-magnetism.

Books.

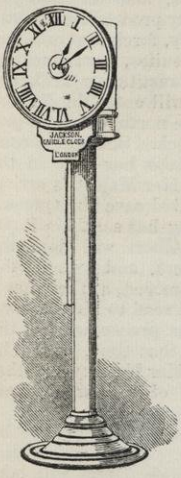
THE AUTOBIOGRAPHY OF JOHN BRITTON. Parts I., II., and III.

IF it be true that the existence of man is nowhere submitted to such rough trial as in large towns, where, among a vast population, all interests, both moral and physical, are sustaining a permanent conflict, it is equally certain that few, if any, among a rural population possess intelligence to direct active and awakening faculties into any wise or profitable course. The narrative of John Britton's early struggle with incapacity of this nature, graphically given by John Britton himself, from the repression of any spontaneous developement of nature, in his native village Kington, in his boyish days, to his transfer to a school at Chippenham, thence to the weariness of uncongenial labour at home. Apprenticed at sixteen to a London merchant, he passed his days in the cellar, in bottling, corking, and binning. He was not even instructed in any essential branch of the business, and was ignorant where Lisbon, Madeira, or the Rhine were. The morbid condition of his mind was increased, and becoming useless to his master, the latter granted him his liberty six months before his term of service had expired, gave him two guineas, instead of twenty to which he was entitled, and left him in the world to shift for himself. Occupation in an attorney's office gave him more opportunity for reading, which he did not neglect. The illness of the author, now in his eightieth year, has temporarily delayed the progress of the work, which we hope to see early renewed, and that our topographer and antiquary may in person complete his picture of the triumph of resolution over the greatest hardships and the most adverse circumstances.

List of New Manufactures.

Useful and Ornamental.

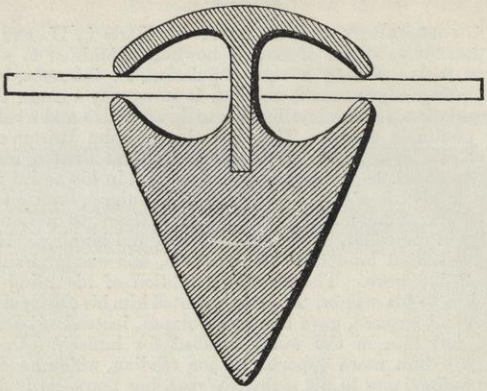
[ON the same principle as Literary Journals give a list of new publications issued weekly, so we here afford to manufacturers, &c., the opportunity of announcing the novelties they bring forward, accompanied with such brief remarks as will be strictly explanatory; our readers will bear in mind, that the statements under these circumstances are made on the responsibility of the producers.]



An Illuminated Candle Clock.—By an ingenious and simple contrivance the combustion of an ordinary candle in a Palmer's lamp is made to regulate the motion of the hands on a small clock-dial, which is attached to the lamp at option, and being transparent, shews the hour of the night with sufficient accuracy. The dials are made 4 inches in diameter and upwards. A candle in a chamber lamp may be made to burn eight, nine, ten hours, or more, and, by means of the arrangement shewn in the engraving, will indicate time during the period of its burning, with but slight variation. Being silent in its motion, it is well adapted for the sick-room or bedchamber. It possesses several features which tend to recommend it to the attention of the public, being cheap and simple in its construction, and when the clock is once adjusted, it does not require any further attention. Manufactured by W. H. and S. Jackson, 66 Red Lion Street, Clerkenwell.

Nixon's Metallic Self-Ventilating Sash Bar, for Conservatory, Greenhouse, and Sky Lights, registered, manufactured by Mr. Thomas Nixon, Kettering, is of simple construction, as will be seen by the section here given, shewing the bar with a pane of glass on either side. Its usefulness consists in the entire abolition of the putty, so *frequently and justly* complained of in the old system of glazing; in its durability; in its perfect dryness in the *dampest day*, no condensed vapour settling and dropping on

the inside; in its simplicity of glazing, the panes of glass being merely slipped into the metallic tubes; in its being so constructed as to allow for expansion and contraction



however *large a roof may be, and constructed of whatever materials;* and last, and *not least*, in its being *perfectly water-tight.*

Note.—Manufacturers are requested to forward illustrative woodcuts for this list as early in the month as possible. Those who may not have woodcuts ready, and desire them to be prepared expressly, may be recommended to apply to Mr. Bolton, 331 Strand.

Miscellaneous.

HER MAJESTY THE QUEEN, finding how acceptable it would be to her subjects that the EXHIBITION BUILDING should be INAUGURATED PUBLICLY, at once intimated her wish that there should be an appropriate ceremony, and the following order of the ceremony of the opening of the Exhibition on the 1st of May was arranged by the Commissioners:—Exhibitors' attendants, who have been sanctioned by the Executive Committee, will be admitted between the hours of eight and nine, at doors specified on their cards, and will immediately take their places by the counters or the objects exhibited by their employers. Holders of season tickets will be admitted at all east, south, and west entrances, between the hours of nine and half-past eleven o'clock, and will be allowed to take their places, subject to the police regulation, in any part of the building below, and in the galleries, except the parts railed off in the nave and transept. A platform will be raised to the north of the centre of the transept, opposite the crystal fountain, on which a chair of state will be placed. The Royal Commissioners will assemble at half-past eleven in the transept, opposite the platform, together with their Executive Committee, and Foreign Commissioners, in full dress or in plain evening dress. His Grace the Archbishop of Canterbury, Her Majesty's Ministers, the great Officers of State, and the Foreign Ambassadors and Ministers, will take their places on the platform to the right and left of the chair of state, in full dress, also at half-past eleven. Her Majesty proceeding in state, with the royal family, foreign guests, &c., and her and their suites, from Buckingham Palace, up Constitution Hill, and down Rotten Row, will enter the Exhibition building by the north entrance precisely at twelve o'clock. She will ascend the platform and take her seat in the chair of state. On Her Majesty's arrival a choir will sing "God save the Queen." On the Queen taking her seat, his Royal Highness Prince Albert will join the Royal Commissioners, and when the music has ceased, proceed, at their head, to the platform, and read to Her Majesty a short report of the proceedings of the Commission up to that time, which he will then deliver to Her Majesty, together with the catalogue of the articles exhibited. Her Majesty will return a gracious answer, handed to her by the Secretary of State. After which His Royal Highness Prince Albert will take his place again by the side of Her Majesty. The doyen of the *corps diplomatique* will read an address to Her Majesty on behalf of the foreign nations, who have contributed to the Exhibition. To which Her Majesty will likewise re-

turn a gracious answer. His Grace the Archbishop of Canterbury will then say a prayer, invoking God's blessing upon the undertaking, followed by a short anthem sung by the choir. A royal procession will then be formed, preceded by the Commissioners, which will turn to the right, moving to the west end of the nave by its north side, will return to the east end of the nave by its south side, including the south end of the transept, and come back to the centre along the north side of the nave; thus enabling all the public, who will be expected to keep the places which have been assigned to them, to see Her Majesty and the procession. During the procession the organs appointed will play marches, taking the music up at the Queen's approach. On Her Majesty's return to the platform, the Queen will declare "The Exhibition opened!" which will be announced to the public by a flourish of trumpets and the firing of a royal salute on the north of the Serpentine; whereupon the barriers, which had kept the nave clear, will be thrown open, and the public will be allowed to circulate freely. Her Majesty will then return to Buckingham Palace by the route by which she came. All the doors, which will have been closed at half-past eleven o'clock, will, upon Her Majesty's departure, be again opened.

The BRITISH SCULPTORS are gracefully about to shew their admiration of genius, by giving a dinner to Mr. Kiss, of Berlin, the author of the famous group of the Amazon and Tiger in the Exhibition.

A packing-case was addressed to the Exhibition as follows:—"Sir Vyat and Sir Fox Enderson Esqvire Grate Exposition Park of Hide at London Glace softly to be posed vpright."

The following is the LIST OF JURORS FOR THE UNITED KINGDOM, which we believe the Commissioners have sanctioned:—

I. *Mining, Quarrying, Metallurgical Operations, and Mineral Products:*—Sir H. De la Beche, C.B., F.R.S., 28 Jermyn Street, Piccadilly, Director General of the Geological Survey of the United Kingdom, &c.; M. Faraday, F.R.S., Royal Institution, Albemarle Street, Professor of Chemistry to the Royal Institution; W. Logan, 42 Sackville Street, Director of the Geological Survey of Canada; Richard Taylor, F.G.S., Falmouth, Mineral Surveyor to the Duchy of Cornwall.

II. *Chemical and Pharmaceutical Process and Products generally:*—Jacob Bell, M.P., 15 Langham Place; Thomas Graham, F.R.S. 4 Gordon Square, Professor of Chemistry, University College; John Mercer, F.C.S., Oakensaw, near Accrington, Lancashire. Calico-printer; H. L. Pattinson, 10 Grey Street, Newcastle-on-Tyne, Chemical Manufacturer.

III. *Substances used as Food:*—Sir J. P. Boileau, Bart., F.R.S., 20 Upper Brook Street, Agriculturist; Joseph D. Hooker, M.D., R.N., F.R.S., Royal Gardens, Kew, Botanist; Dr. Lindley, F.R.S., 21 Regent Street, Professor of Botany, University College.

IV. *Vegetable and Animal Substances chiefly used in Manufactures, as Implements, or for Ornament:* — Professor Richard Owen, F.R.S., College of Surgeons, Lincoln's Inn Fields, Curator to the College of Surgeons; Dr. Royle, F.R.S., East India House, Leadenhall Street, Professor of Materia Medica, King's College; Professor Solly, F.R.S., 15 Tavistock Square, Lecturer on Chemistry at Addiscombe; N. Wallich, M.D., F.R.S., 5 Upper Gower Street, Bedford Square, formerly Curator of the Botanical Gardens, Calcutta.

V. *Machines for direct use, including Carriages and Railway and Naval Mechanism:* — W. Fairbairn, Manchester, Mechanical Engineer; John Farey, 67 Upper Guildford Street, Russell Square, Consulting Engineer; John Hick, Bolton-le-Moors, Mechanical Engineer; H. Maudslay, 4 Cheltenham Place, Lambeth, Mechanical Engineer; Rev. E. Moseley, M.A., Education Office, Privy Council, Inspector of Schools, and formerly Professor of Mechanics at King's College; Robert Napier, M.I.C.E., Glasgow, Mechanical Engineer and Ship Builder. *Va. Sub-Jury for Carriages:*—J. Holland, 258 Oxford Street, Coach Builder; Earl Jersey, 38 Berkeley Square, formerly Master of the Horse; T. Hutton, Summer Hill, Dublin, Coach Builder.

VI. *Manufacturing Machines and Tools:*—Charles Gascoigne Maclean, Leeds, Mechanical Engineer; John Penn, Greenwich, Mechanical Engineer; Geo. Rennie, F.R.S., Whitehall Place, Mechanical Engineer; T. R. Sewell, Carrington, near Nottingham, Lace Manufacturer; Professor R. Willis, Cambridge, Professor of Mechanics; Benjamin Fothergill, Manchester, Mechanical Engineer.

VII. *Civil Engineering, Architectural and Building Contrivances:* — I. K. Brunel, F.R.S., Duke Street, Westminster, Civil Engineer; J. M. Rendel, F.R.S., 8 Great George Street, Civil Engineer; William Tite, F.R.S., 17 St. Helen's Place, Bishopsgate, Architect; James Walker, F.R.S., Great George Street, Civil Engineer.

VIII. *Naval Architecture and Military Engineering; Ordnance, Armour, and Accoutrements:* — Major-General Sir John Burgoyne, K.C.B., 87 Pall Mall, Inspec-

tor General of Fortifications; A. F. Creuze, F.R.S., Lloyd's Royal Exchange, Principal Shipwright Surveyor at Lloyd's; Major-General Sir W. Morrison, K.C.B., M.P., 16 Saville Row, Hon. East India Company's Service; Sir Baldwin Walker, K.C.B., 66 Westbourne Terrace, Surveyor-General of the Navy.

IX. *Agricultural and Horticultural Machines and Implements:*—Col. Challoner 11 Charles Street, Berkeley Square; B. T. Brandreth Gibbs, Half-moon Street; A. Hammond, Westacre Hall, Rougham, Norfolk; Josh. Locke, M.P., F.R.S., 6 Chester Terrace, Regent's Park; W. Miles, M.P., Leigh Court, near Bristol; P. Pusey, M.P., Pusey, near Farringdon; J. V. Shelley, Maresfield Park, Sussex; H. S. Thompson, Moat Hall, near York.

X. *Philosophical Instruments and Processes depending upon their use; Musical, Horological, and Surgical Instruments:*—Sir David Brewster, F.R.S., 1 Dorset Street, Manchester Square, and St. Andrew's, Fifeshire, N. B., Principal of the University, St. Andrew's; Sir John Herschel, Bart., F.R.S., 32 Harley Street, Master of the Mint; W. H. Miller, F.R.S., Scroope Terrace, Cambridge, Professor of Mineralogy; Rev. R. Sheepshanks, D.D., F.R.S., Athenæum Club; J. Glashier, F.R.S., Observatory, Greenwich, Observer in Greenwich Observatory; Professor Potter, F.R.S., University College, Professor of Natural Philosophy. *Sub-Jury A. for Musical Instruments:*—Sterndale Bennet, 9 Augusta Place, Clapham Road; Sir H. Bishop, 13 Cambridge Street, Hyde Park, Doctor of Music; Sir G. Smart, 91 Great Portland Street, and St. Ann's, Chertsey; Dr. Wylde, 65 Westbourne Terrace, Doctor of Music and Professor at the Royal Academy of Music. *Sub-Jury B. for Surgical Instruments:*—J. H. Green, F.R.S., Hadley, Middlesex, President of College of Surgeons; W. Lawrence, F.R.S., Whitehall Place, Surgeon to Bartholomew's Hospital; James Philp, 67 St. James's Street, Surgical Instrument Maker.

XI. *Cotton:*—Sir James Anderson, Lord Provost of Glasgow, Glasgow, Cotton Manufacturer; Thomas Ashton, Hyde, Cheshire, Cotton Spinner; W. Gray, Mayor of Bolton, Wheatfield, Bolton, Cotton Spinner; George Jackson, Corporation Road, Carlisle, Cotton Spinner; J. Aspinal Turner, Manchester, Cotton Spinner.

XII. *Woollen and Worsted:*—Samuel Addington, 105 St. Martin's Lane, and Stroud, Woollen Merchant; Henry Brett, Wood Street, Cheapside, and Huddersfield, Woollen Merchant; John Cooper, J.P., Leeds, Woollen Merchant and Manufacturer; Henry Forbes, Bradford, Merchant; George Lawton, Mecklehurst, near Ashton-under-Lyne, Flannel Manufacturer; Thomas Marling, Stroud, Retired Manufacturer.

XIII. *Silk and Velvet:*—Samuel Courtauld, 2 Carey Lane, Cheapside, Crape Manufacturer; Thomas Jeffcoat, Coventry, Ribbon Manufacturer; George Tawke Kemp, 34 Spital Square, Silk Manufacturer; Chas. Warwick, 132 Cheapside, Silk Merchant; Thomas Winkworth, Gresham Club, King William Street, City, Silk Manufacturer.

XIV. *Manufactures from Flax and Hemp:*—William Charley, Seymour Hill, Belfast, Bleacher; John McMaster, Guilford, Banbridge, Ireland, Manufacturer; John Moir, Dundee, Manufacturer; Chs. Tee, Pindar Oak, Barnsley, Manufacturer; John Wilkinson, J.P., Leeds, Flax Spinner.

XV. *Mixed Fabrics, including Shawls, but exclusive of Worsted Goods (Class XII.):*—W. Clabburn, Norwich, Manufacturer; John R. Lavanchy, 6 New Burlington Street, Silk Mercer; John Morgan, Grenlaw, Paisley, Manufacturer; Titus Salt, Bradford, Manufacturer; Frederick Schwann, Huddersfield, Merchant; William Prinsep, 30 Gloucester Gardens.

XVI. *Leather, including Saddlery and Harness, Skins, Fur, Feathers, and Hair:*—Hon. Col. George Anson, 25 Hill Street, Berkeley Square; J. B. Bevington, Neckinger Mills, Bermondsey, Leather Manufacturer; John Foster, 16 Wigmore Street, Cavendish Square, Florist and Feather Manufacturer; J. W. Newman, Walsall, Saddler and Harness Manufacturer; J. A. Nicholay, 82 Oxford Street, Furrier to Her Majesty.

XVII. *Paper and Stationery, Printing and Bookbinding:*—Thos. De la Rue, 110 Bunhill Row, Ornamental Stationery Manufacturer; Visct. Mahon, 41 Grosvenor Place; C. Venables, Plomer Hill House, High Wycombe, and Hampton Grey, near Oxford, a retired Paper Manufacturer; C. Whittingham, Chiswick, Printer.

XVIII. *Woven, Spun, Felted, and Laid Fabrics, when shewn as specimens of Printing or Dyeing:*—John Hargreaves, Accrington, Lancashire, Calico Printer; Alexander Harvey, Glasgow, Dyer; C. Swaisland, Crayford, Kent, Printer; Henry Tucker, 30 Gresham Street, Silk Manufacturer; Edmund Potter, Manchester, Calico Printer.

XIX. *Tapestry, including Carpets and Floor-cloths, Lace and Embroidery, Fancy and Industrial Works:*—D. Biddle, 81 Oxford Street, Laceman; Richard Birkin,

Nottingham, Lace Manufacturer; Peter Graham, 37 Oxford Street, Carpet Manufacturer; Thos. Simcox Lea, J.P., Astley Hall, Stourport, Carpet Manufacturer; Robert Lindsay, Belfast, Sewed and Embroidered Muslin Manufacturer.

XX. *Articles of Clothing for immediate, personal, or domestic use*:—T. Brown, 40 Wood Street, Straw Hat Manufacturer, and Milliner; T. Christy, 35 Gracechurch Street, Beaver and Silk Hat Manufacturer; William Felkin, Mayor of Nottingham, The Park, Nottingham, Hosiery Manufacturer; E. Smith, 60 Old Broad Street, Tailor.

XXI. *Cutlery and Edge Tools*:—Joseph B. Durham, 456 Oxford Street, Cutler to H.R.H. Prince Albert; Mr. Alderman Peace, Sheffield, Cutlery and Edge Tool Manufacturer; Lord Wharncliffe, 28 Lower Brook Street.

XXII. *Iron and General Hardware*:—Arthur Adams, Walsall, Hardware Merchant; W. Bird, 5 Martin's Lane, Cannon Street, City, Iron Merchant; W. Dyce, R.A., 2 Fitzroy Square, Artist; Sterling Howard, Sheffield, Grate Manufacturer; Henry Van Wart, Birmingham, Agent and Factor; G. Shaw, Birmingham, Patent Agent.

XXIII. *Working in Precious Metals, and in their imitation, Jewellery, and all articles of Vertu and Luxury, not included in the other Classes*:—J. Garrard, 31 Panton Street, Haymarket, Prime Warden of Goldsmiths' Company; John Gray, 5 Billiter Square, City, Silversmith and Plater; Henry Hope, M.P., Piccadilly; Westley Richards, Birmingham, formerly Plater and Jeweller, Chairman of the Birmingham Exhibition in 1849.

XXIV. *Glass*:—R. L. Chance, Glass Works, Birmingham, Glass Manufacturer; Robert Obbard, 2 Crescent, Blackfriars, Glass Manufacturer; E. H. Baldock, M.P., 5 Hyde Park Place; Lord de Mauley, F.R.S.

XXV. *Ceramic Manufacture, China, Porcelain, Earthenware, &c.*:—Duke of Argyle, Stafford House, St. James's; W. Mortlock, 18 Regent Street, Waterloo Place, China Manufacturer; Baring Wall, Esq., M.P., 44 Berkeley Square; John A. Wise, Clayton Hall, Newcastle-under-Lyne, Staffordshire.

XXVI. *Decoration, Furniture and Upholstery, including Paper-Hangings, Papier Maché, and Japanned Goods*:—Lord Ashburton, 82 Piccadilly; John Lewis Aubert, 74 Coleman Street, City, Paper-stainer; J. G. Crace, 14 Wigmore Street, Cavendish Square, House Decorator; John Jackson, 49 Rathbone Place, Manufacturer of Composition and Papier Maché Ornaments; Edward Snell, 27 Albemarle Street, Upholsterer and Cabinet Maker; John Webb, 8 Old Bond Street, Upholsterer and Cabinet Maker.

XXVII. *Manufactures in Mineral Substances, used for Building or Decoration, as in Marble, Slate, Porphyries, Cements, Artificial Stones, &c.*:—Professor Ansted, F.R.S., 17 Manchester Street, Manchester Square, Professor of Geology, King's College; George Godwin, F.R.S., Alexander Square, Brompton; Lord Sudeley, Dover Street; Sir Chas. Lemon, Bart. F.R.S. M.P., 46 Charles Street, Berkeley Square.

XXVIII. *Manufactures from Animal and Vegetable Substances, not being Woven or Felted, or included in other Sections*:—J. E. Gray, F.R.S., British Museum, Curator, Natural History Department, British Museum; Dr. E. Lankester, F.R.S., Old Burlington Street, Secretary to the Ray Society; F. J. Miller, 7 Millbank Street, Oil Merchant; T. A. Wise, M.D., Hon. E.I.C.S., 15 Devonshire place, Surgeon, H.E.I.C.S.

XXIX. *Miscellaneous Manufactures and Small Wares*:—Lord Canning, 16 Grosvenor Square; Arthur Henfrey, F.R.S., 17 Manchester Street, Gray's Inn Road, Vice-President of the Botanical Society; Warren De la Rue, F.R.S., F.C.S., 110 Bunhill Row, Manufacturer of Ornamental Stationery; J. J. Mechi, 4 Leadenhall Street, Maker of Dressing-Cases, Cutler.

XXX. *Sculpture, Models, and Plastic Art*:— C. R. Cockerell, R.A., Bank of England; Lord Colborne, 19 Hill Street, Berkeley Square; W. Newton, British Museum; A. W. Pugin, St. Augustine, West Cliff, Ramsgate, Architect; Richard Redgrave, R.A., 18 Hyde Park Gate South, Kensington Gore; W. Wyon, R.A., Her Majesty's Mint; John Gibson, R.A., Rome, Sculptor.

We are glad that the Society of Arts have stepped forward to offer courteous hospitality to foreigners. The Council say, that having in view the connexion of His Royal Highness the Prince Albert, their President, and the Society, with the Great Exhibition of 1851, they think it becomes the appropriate function of the Society to endeavour to shew every courtesy and attention to foreign Exhibitors who may be induced to visit the metropolis, and have considered what facilities the Society are enabled to provide which may prove most acceptable. They have accordingly resolved:—1. To fit up in the Society's house, during the Exhibition, a convenient reading and writing-room, furnished with the principal journals and periodicals, for the accommodation of the foreign Commissioners, the Representative Agents of foreign coun-

tries exhibiting, and foreign Exhibitors recommended by the Commissioners and Agents, during their visits to the metropolis; by which it is hoped to offer a convenience to visitors, and a facility of friendly intercourse with the members of the Society. 2. To keep an *Address-Book* in the reading-room for the convenience of those who are entitled to its use, shewing, as far as may be practicable, the addresses and periods of arrival and departure of distinguished strangers connected with the Exhibition. 3. To hold, on every Wednesday evening, commencing with the first Wednesday in May (in lieu of the ordinary meetings of the Society) a *conversazione* which shall be open to the members of the Society and all persons having the privilege of entrance to the reading-room. Each member's ticket is also to include the admission of a lady. In order to render the *conversazioni* more agreeable both to the members and their visitors, some expenses will have to be incurred for refreshments and otherwise, which the Council are of opinion should not be charged upon the ordinary funds of the Society; they propose to meet this charge by a subscription among the members, upon whose assistance and cordial co-operation in furtherance of their proposals the Council have a confident reliance. The Secretary has been instructed to receive any subscriptions transmitted to him, and to publish them with the next week's transactions.

The French Government have directed returns to be prepared of the NUMBERS of FRENCH ARTISANS WHO have left France to RESIDE IN ENGLAND during the last twelve months. The object is to shew how greatly British manufacturers are indebted to French ability in the Exhibition. No doubt it will be very easy to prove that several hundreds, and perhaps some thousands, of French people have crossed the Channel during this period. Crossing the Channel, of course, will be interpreted to mean residence in England. French artisans are French people, and it will be shewn that French people mean artisans; and so the returns will prove that our British Exhibition, after all, is chiefly due to the French! If the truth could be ascertained, and judging from the facts we are in possession of, we should be inclined to estimate that probably not more than fifty or sixty persons—principally artisans for metals—have been expressly imported, and that several designs for printed fabrics, and perhaps for silk-weaving, have been obtained from Paris; but this, we suspect, is nearly the whole of our obligation to our neighbours.

"INDUSTRIAL ARTS OF THE NINETEENTH CENTURY."—Under this title Messrs. Day and Son announce the immediate publication of a work to consist of a series of Illustrations of the Choicest Specimens produced by every Nation at the Great Exhibition of 1851, to be edited by M. Digby Wyatt, Esq. Every object will be drawn on stone by first-rate artists, and will be represented in its proper colours, the aim of the publishers being to furnish a true and lasting memorial of the condition of the industrial arts throughout the world at the present epoch. "Believing that it will be the wish of many to preserve the best possible record of this great event, the publishers have calculated upon a very extended sale, and have determined to reduce the price to a rate altogether unprecedented in the history of lithography. The work will be in folio, and will appear in fortnightly parts; price, to subscribers, 5*s.* each. Every number will contain four fully coloured plates, with descriptions of the objects, and critical and explanatory remarks. The first number will appear on May 1st, and the work complete will comprise from 120 to 150 plates." The first number will probably contain,—1. The Amazon, by Kiss. 2. The Carpet designed by Grüner for His Royal Highness the Prince Albert. 3. The Bavarian Lion, by Möller. 4. The Embroidery from Tunis. The price will be moderate.

GLASS SHADES.—We recently had an opportunity of seeing at Messrs. Hetley and Co.'s one of the largest round shades which has yet been produced; its height was 52 inches, its diameter 26, and is intended to cover the piece of plate just presented to Thomas Maughan, Esq., of West Hartlepool. It may be interesting to know, that only a few weeks back so large a shade could not have been produced by an English workman, the large-sized shades being manufactured by the Belgian or French workmen only. They are now, however, surpassed by the superior skill of an English workman. The plan at present adopted is to blow the shade into a wooden mould of the size required, the inflation being materially assisted by spirit, which is injected through the tube into the shade before it has acquired the full size, and which vaporising helps to expand the glass.

Original Papers.

GLEANINGS FROM THE GREAT EXHIBITION OF 1851, BY OWEN JONES.

No. I.

ON THE DISTRIBUTION OF FORM AND COLOUR DEVELOPED IN THE ARTICLES EXHIBITED IN THE INDIAN, EGYPTIAN, TURKISH, AND TUNISIAN DEPARTMENTS OF THE GREAT EXHIBITION.

THE several nations of the globe which have arrived at any great degree of civilisation have each possessed religious institutions, which have been coeval with their formation and vanished with their decline. These, totally distinct from similar institutions which followed or preceded them, aided by the peculiar manners and customs of the people, produced a series of styles of architecture which have either entirely varied from or formed a connecting link with those which have preceded them, in proportion as the religion of the one was inspired by, or more or less removed in its doctrines from that of the other. In each, architecture has closely followed the phases which the religion has undergone, pure and simple in its origin—majestic, all-absorbing at its acme,—meaningless and decrepid in its decline.

Thus, in the early temples of Egypt, every ornament was a symbol shewing, by the exquisite taste and beauty of its execution, the earnest and loving faith of the hand that carved it; in the more majestic temples of the Pharaohs, when the whole power, art, and wealth of the state, were made to accumulate upon one point, they lost in beauty what they gained in majesty. Under the Ptolemies, the religion of Egypt lost the power which it had held under the Pharaohs; and although the conquerors, to ingratiate themselves with the people, undertook great works in rebuilding and restoring the temples, the hand that executed has told the tale of the want of that union of faith which before had enabled them to execute with *art* such gigantic undertakings. Under the Romans, the architecture became a mere mechanical art; the temples were larger, and the stones more nicely fitted, but their painting and sculpture excite almost disgust.

The religion of the Greeks was a modification of that of the Egyptians, so also was their architecture, the types of some of its most characteristic features existing in Egypt long before Greece had arisen from a primitive state.

The religion of the Egyptians was in its origin purely spiritual and mystic, but in the course of time, long before it had passed to the Greeks, from the worshipping of all animated nature, the air, the stars, the sun, the moon, which they represented by certain forms of men and animals, from the adoration of the thing signified they passed to that of the object itself, and their divinities became invested with the supposed actions and attributes of the heavenly bodies, unmindful of the allegory which had called them into existence. Hence the religion of the Greeks, as derived from the Egyptians, was purely material; so also was their architecture: feelingly alive to all the bounteous gifts of nature, they embodied them in their art, conceiving God in the image of man, they made men like gods.

In Greece, the face of nature, so different from the flat country of the Nile, induced a great modification in their architecture; the eye, accustomed to wander over the sharp angles and accidental curves of the vast mountains of this favoured soil, inspired an architecture in sympathy with its character; in Egypt, where nature had shewn her solemn grandeur under forms more calm, the mind of man was enabled to expand and make up for the absence of the grandeur in nature's works by the buildings which he had raised upon the soil: not so Greece, there the bolder features of nature's countenance awed man into respect for her wondrous charms, which, however, by his fertile genius, he was enabled to make use of, though he could not rival them; for we here see the temples of their gods, which in modern times are made to represent in crowded cities, with equal propriety, a Christian church, a theatre of pleasure,

or an hospital for sick, soaring like the eagle on the mountain-top, which formed their pedestal, and seeming to add a delicate finish to the highly-wrought works of nature.

If the religion of the Egyptians in the hands of the Greeks lost a portion of its character, with the Romans it became almost powerless, possessing the outward forms and ceremonies of worship, but not the inward faith; the Romans erected temples upon a grander and more extravagant scale, but wanting in that feeling, that exquisite taste and sympathy with their mythology, which so distinguished the works of the Greeks and Egyptians. Having attained an almost boundless power over the earth, they set themselves up as gods, neglecting those which had been handed down to them by their forefathers: the real religion of the Romans, or tie which bound all men together moving sympathetically round one centre, was glory, conquest, luxury: hence the monuments which the Romans have handed down to us, as the true chronicle of their times, are the Coliseum, the baths, theatres, palaces, and triumphal arches,—these only can lay claim to any originality of invention.

On the ruins of paganism rose the Christian religion, as unlike any of the preceding as it was superior to them, and produced an art equally distinct; and although many of the works of architecture which were the result of this religion, were not inspired from it, and were erected in countries where paganism was not thoroughly effaced, and resembled its works, it is accounted for by the vast remains of heathen temples which the early Christians converted to their use; and in the buildings afterwards erected on the same soil they could never throw aside the shackles imposed upon them by those with which they had grown up, and in which, as pagans, they had worshipped; but as Christianity spread to other countries removed from this influence, the pagan forms were gradually abandoned, and Christian architecture unfolded itself in all its glory.

This, like all other arts, has had its *hour of faith and struggle, its day of joy and intoxication,* and time of lingering disease *and death.* The Reformation, by separating the tie which had ever existed between religion and art, was a deathblow to Christian architecture from which it has never yet recovered, destroying the unity of the Christian religion, creating as many sects and divisions as there are individual followers of Christ;—each man left to be the interpreter of its hidden mysteries, each expressed them differently. The Christian temples failed to represent Christian thoughts, and emblems of sacrifices from pagan altars were made to adorn the temple of the one God.

The attempts which have been made of late years to revive Christian art, however beautiful they have been as copies of a bygone style, have all signally failed, and ever will fail, to awaken a *universal* sympathy: many of the works erecting in this style will not be finished ere the fashion which has called them into existence shall have passed away. They may remain to illustrate the nation's greatness and resources, her wonderful mechanical appliances, but can reflect nothing more to posterity than the favourite affectation of to-day.

Similar attempts to revive Elizabethan architecture have shared the same fate, and the revived Italian style, which may possibly, from being a little nearer our own times, be destined to a longer life, must ultimately go with the rest. The universal thirst which now exists for an architecture, in harmony with our institutions and modes of thought, must ultimately be satisfied. It is evident, that had the ancients been acquainted with our present materials at command and facilities of construction, had they had our institutions and complete control over the industrial processes, their architecture would have been very different to what it was. Why, then, should we continue to consider architecture as a thing once discovered, and to recognise only the forms in which it has hitherto appeared? Architecture is progressive, and must keep pace with the developement of the wants, the faculties, and sentiments of mankind.

The great industrial movement which of late years has thrown so much of power and interest on railways, and other great national works, should have

aided this; but unfortunately it arrived before the artistic world was prepared to acknowledge it. But it may have done its work in this, by shewing more prominently the disordered state of artistic minds. It has awakened in the public a desire for higher results: instead of suspension-bridges alternately Egyptian or Gothic, railways covered with architectural productions of every variety of style, from Doric termini to Moorish tunnels, the new materials used, the new wants to be supplied, should and might have suggested forms more in harmony with the end in view.

The religion of Mahomet, which spread meteorlike over the East with such astounding rapidity, rapidly produced an art in unison with its poetic and imaginative doctrines. Forbidden by their creed to represent the human form, the followers of Mahomet were led to adorn their temples as none others have been. A most elaborate system of ornamentation grew up, recalling, perhaps, the silken tissues which had adorned their tents in their wandering state, whilst their religion impressed itself on all their works: texts from the Koran, interwoven with every ornament, added beauty and expressed faith. We observe, however, in the architecture of the Mahometans the same anomaly which we have before seen in that of the Christians. Whenever the Mahomedan invaded and conquered Christian nations, drove them from the soil, occupied their temples, and devoted them to the worship of their own God, we find that all future buildings erected in the same climes have felt the influence of those already adapted to the new worship; but as the religion spread far and wide to new countries beyond this influence, the Mahometans, left to the full play of their lively and fruitful imaginations, produced and perfected the most refined and elegant styles of architecture that has ever yet appeared. Shorn as they are of their power to produce great works, they are still faithful to the art as to the religion of their ancestors, and the many wonderful specimens of their industrial works in the Great Exhibition shew them still equal in their power of producing refined works of art to what they ever were.

To the student of ornamental design, as applied to manufactures, these works offer a most fruitful lesson. After wandering through the halls of this wonderful assemblage of the world's industry, the artist who passes down the nave from east to west will see on either side but a fruitless struggle to produce in art novelty without beauty—beauty without intelligence; all work without faith. One man will go back fifty years, another one a hundred, another three, another a thousand—none go forward. Doubtless, the great works of the past are our inheritance, and are not to be loosely thrown aside; yet they should not be slavishly copied. The principles of art which successive ages have evolved belong to us, not so the results; it is taking the end for the means.

He who should set about forming a new style for himself, without regard to the past, would be like a student in astronomy who should reject the discoveries of Newton, and endeavour to work out any process for himself. Yet, on the other hand, where would the science of astronomy be now if successive students had been content to receive the discoveries of Newton as final truths, instead of making them serve as the basis of fresh discoveries? It is for this purpose that I would beg the wandering artist I have described to repose his distracted eye and head in the departments of India, Tunis, Egypt, and Turkey. He will here find no carpets worked with flowers whereon the foot would fear to tread, no chairs that the hand would fear to grasp, no superfluous and useless ornament which an accident may remove. He will here be impressed with a sensation of most voluptuous repose: here there is no struggle after an effect, everything arises quietly and naturally from the want which has to be supplied. It is seen from the embroidered garment tissues to the humblest earthen vase: each follows the same law. The most brilliant colours are here harmonised as by a natural instinct; it is impossible to find a discord. Every piece of ornamentation shews that the artist thought, instead of copied whilst he worked. How has this marvellous result been obtained? It is difficult to put in words what the eye on examination will

readily seize. One guiding principle of their ornamentation appears to be, that their decoration was always what may be called *surface decoration.* Their general guiding forms were first considered and these forms decorated. Their flowers are not natural flowers, but conventionalised by the material in which they worked. We do not see, as in European works, a highly-wrought imitation of a natural flower, with its light and shade struggling to stand out from the surface on which it is worked, but a conventional representation sufficiently near to suggest an image to the mind, without destroying the unity of the object it is intended to decorate. There is a total absence of shadow. The patterns of their shawls and carpets are harmonious and effective from the proper distribution of form and colour, and do not require to be heightened in effect by strong and positive oppositions; the great aim appears to be that coloured objects, viewed at a distance, should present a neutralised bloom,—each step nearer exhibits fresh beauties, a close inspection the means whereby such effects are produced. In their diapers and scroll-work one of the means whereby this harmonising effect is produced appears to be, that the ornament and the ground occupy equal areas: to obtain this requires no ordinary skill and can only be arrived at by highly trained hands and minds.

Many of the patterns here would defy the power of most European artists simply to copy them, with the same happy and certain distribution of form and colour. In their conventional foliage, in all cases, we find the forms flowing out from a parent stem; the space which has to be filled, however varied in form, being accomplished with the most exquisite skill. We never see here ornaments dotted down as in modern works, the existence of which cannot be accounted for; every flower, however distant, can be traced to its branch and root. Let our artists study here: let them, on the other hand, avoid adopting or copying the conventional forms thus conveniently offered to them. Let them go to Nature's ever-bounteous works, and conventionalise for themselves. Why should the acanthus leaf keep the field against all comers?

A patient observation of Nature's works will shew us everywhere colour assisting in the developement of form, and adding many charms which, but for this, were wanting. The ancients, by long years of earnest study and reflection, had arrived at a clear knowledge of this. I do not say that what they did we should now repeat, but only follow them so far as we find they acted on principles, by them universally recognised, and which we may now presume to be discovered truths, and therefore not wisely to be rejected. With their more contemplative and external life they were more vividly impressed with Nature's works than ourselves. In this unpoetic and positive age, we are so much engrossed with the active business of life that we neglect these ever-present examples. Each civilisation in the ascendant goes to nature or the best ages of the past for her models, each declining age substitutes its own decrepid and disordered caprices. We possess the inestimable advantage of living in an age when nothing of the past remains a secret; each stone of every monument of every clime has told its tale, which is now brought within the reach of our own firesides; yet hitherto how little have we shewn ourselves worthy of this great privilege. The ease with which our knowledge might be obtained has made us indifferent to its acquirement, or led us indolently to copy where only we should have studied. But for the present we must stop.

The following are some few broad principles which may be discovered in nearly all the great works of the past; every student may work out for himself many others too subtle for description:—

1. The construction is decorated; decoration is never purposely constructed.
2. Beauty of form is produced by lines growing out one from the other in gradual undulations; there are no excrescences; nothing could be removed and leave the design equally good or better.
3. The general form is first cared for; this is subdivided and ornamented by general lines; the interstices are then filled in with ornament, which is again subdivided and enriched for closer inspection.

4. Colour is used to assist in the developement of form, and to distinguish objects, or parts of objects, one from another.
5. And to assist light and shade, helping the undulations of form by the proper distribution of the several colours; no artificial shadows ever used.
6. That these objects were best attained by the use of the primaries on small surfaces, or in small quantities, supported and balanced by the secondary and tertiary colours on the larger masses.

On a future occasion we will venture to pass in review some of the ornamental works now in the Great Exhibition of the Works of Industry of all Nations, and see how far these principles may be applied to them; happy, if we can but add our mite to the great granary of knowledge which this enlightened age has heaped up for the instruction of the present and benefit of future ages.

VITREOUS GLAZE FOR EARTHENWARE.

It has long been a subject of regret with manufacturers of porcelain and earthenware, that the best compound which they can obtain for a glaze contains so large a portion of lead as to render it injurious to the health of the workmen using it. Up to the present time all attempts have failed in producing a glaze which would flow as readily, produce as hard a surface, be as good a colour, and assist delicate tints to the same extent as the common lead glaze. Mr. Rose, of Coalport, produced a glaze some years since in which the use of lead was abandoned, but it fell into disuse. Mr. Grainger, of Worcester, has of late manufactured some chemical apparatus glazed without lead, and which are reported to have resisted the action of chemicals to a greater extent than any hitherto produced. We desire now to call the attention of our readers to a glaze which has recently been discovered by Mr. Walley. This is stated not to involve the use of any of the known bodies employed in the production of fluxes,—such as lead, borax, soda, glass, or any salt or alkali,—but is simply a compound of earths. From the specimens of ware which we have examined, it would appear to possess advantages peculiar to itself, as it not only admits of the ware being dipped in the clay state, when one fireing is a convenience, thereby saving the second fireing for glazing, but also induces the use of a new and better coloured dip for common earthenware, as it is much cheaper than that ordinarily employed. The weight of the glaze at present used by manufacturers weighs from 30 to 31 oz. per pint, and when dried about 20 oz. of solid matter are obtained; whereas that discovered by Mr. Walley weighs only 25 oz. per pint, and when dried not more than 7 or 8 oz. of solid matter are obtained, thus rendering the glaze thinner and more transparent in its character.

EXHIBITION OF 1851: MONTHLY REPORT OF PROGRESS.

On the 1st May, punctually to the very day announced so long as sixteen months before, the Exhibition was opened and submitted to the criticism of the world. There is no feature in the whole Exhibition more satisfactory than this punctuality, attained under extraordinary difficulties, and reflecting much credit on all the parties who have contributed to the result. It was not until the last moment that our foreign guests believed that we were serious. The Englishman accepts their compliments on the *punctualité nationale* with bland coolness, as though it were a matter of course. From the earliest period we have always expressed confidence that this appointment would be kept, and certainly the fact has been universally accepted as a proof of no common generalship—generalship, too, over forces which were volunteers!

If in the progress of this great work there has been a little friction, it is now altogether forgotten in the brilliant success of the Exhibition. The task was a great one, and even some failures would have been excused; but the success hitherto has been quite unmixed, and has surpassed all expectation. Perhaps never since the world begun have so many well-satisfied faces been assembled together as are now daily congregated in the Crystal Palace. Every

one is charmed. As for the opening ceremony, it is pronounced by all to have surpassed any similar festival in the memory of man. Professional connoisseurs in state magnificence, both at home and abroad, willingly admit that this inauguration of the triumph of industry was far more impressive than any coronation or like solemnisation. The walk of the Queen along the avenues formed by twenty thousand of her subjects conveyed a moral to the Russian Minister, the perception of which he is said not to have concealed.

We gave our readers some idea of the bustle and activity which prevailed in the building in the middle of April. This continued with increasing intensity up to five o'clock on the very morning of the ceremony, when an army of sweepers invaded the building, and fairly cleared it of all remaining litter. Up to two o'clock on the 30th April the building was left in the possession of the Exhibitors, but, according to previous notice, it was then cleared of them. Two hundred Foot Guards, with police and Sappers, formed two lines, and, like a moving wall, quietly passed every one out of the building. During this action Mr. Cobden and the Duke of Wellington happened to enter. Mr. Cobden was driven to take refuge into the Mediæval Court, where he was kept a prisoner ; and the old Duke was much amused, when somebody told him that the Guards were driving the Frenchmen before them, who certainly bore the operation with great patience and good-humour.

The *Times* graphically describes the solemn stillness of the building at eight o'clock, and all the incidents connected with the filling of it. The police arrangements were good enough outside, but the size of the building, and the opportune presence of a company of Sappers, prevented confusion inside. A theory of order had been laid down by Mr. Mayne, the Chief Commissioner, who left the execution of it to chance, for not a single policeman understood it. But good luck prevailed, and everything went smoothly. The entrance of the Queen was a sight never to be forgotten. It was very solemn, and a tear stood in many an eye. We gave in our previous number (p. 84) the order of ceremonial, which was strictly followed, with the exception of the address from the *corps diplomatique*. When the National Anthem had been sung, Prince Albert read the following address on behalf of his brother Commissioners :—

" May it please your Majesty,

" We, the Commissioners appointed by your Majesty's royal warrant of the 3d of January, 1850, for the promotion of the Exhibition of the Works of Industry of all Nations, and subsequently incorporated by your Majesty's royal Charter of the 15th of August in the same year, humbly beg leave, on the occasion of your Majesty's auspicious visit at the opening of the Exhibition, to lay before you a brief statement of our proceedings to the present time.

" By virtue of the authority graciously committed to us by your Majesty, we have made diligent inquiry into the matters which your Majesty was pleased to refer to us, namely, into the best mode of introducing the productions of your Majesty's Colonies and of Foreign Countries into this Kingdom, the selection of the most suitable site for the Exhibition, the general conduct of the undertaking, and the proper method of determining the nature of the Prizes, and of securing the most impartial distribution of them.

" In the prosecution of these inquiries, and in the discharge of the duties assigned to us by your Majesty's royal Charter of Incorporation, we have held constant meetings of our whole body, and have, moreover, referred numerous questions connected with a great variety of subjects to Committees, composed partly of our own members and partly of individuals distinguished in the several departments of science and the arts, who have cordially responded to our applications for their assistance at a great sacrifice of their valuable time.

" Among the earliest questions brought before us was the important one as to the terms upon which articles offered for exhibition should be admitted into the building. We considered that it was a main characteristic of the national undertaking in which we were engaged that it should depend wholly upon the voluntary contributions of the people of this country for its success ; and we therefore decided, without hesitation, that no charge whatever should be made on the admission of such goods. We considered, also, that the office of selecting the articles to be sent should be intrusted in the first instance to Local Committees, to be established in every foreign country, and in various districts of your Majesty's dominions, a general power of control being reserved to the Commission.

"We have now the gratification of stating that our anticipations of support in this course have in all respects been fully realised. Your Majesty's most gracious donation to the funds of the Exhibition was the signal for voluntary contributions from all, even the humblest classes of your subjects, and the funds which have thus been placed at our disposal amount at present to about 65,000*l*. Local Committees, from which we have uniformly received the most zealous co-operation, were formed in all parts of the United Kingdom, in many of your Majesty's colonies, and in the territories of the Honourable East India Company. The most energetic support has also been received from the Governments of nearly all the countries of the world, in most of which Commissions have been appointed for the special purpose of promoting the objects of an Exhibition justly characterised in your Majesty's royal warrant as an Exhibition of the Works of Industry of all Nations.

"We have also to acknowledge the great readiness with which persons of all classes have come forward as Exhibitors. And here again it becomes our duty to return our humble thanks to your Majesty for the most gracious manner in which your Majesty has condescended to associate yourself with your subjects, by yourself contributing some most valuable and interesting articles to the Exhibition.

"The number of Exhibitors whose productions it has been found possible to accommodate is about 15,000, of whom nearly one-half are British. The remainder represent the productions of more than forty foreign countries, comprising almost the whole of the civilised nations of the globe. In arranging the space to be allotted to each, we have taken into consideration both the nature of its productions and the facilities of access to this country afforded by its geographical position. Your Majesty will find the productions of your Majesty's dominions arranged in the western portion of the building, and those of foreign countries in the eastern. The Exhibition is divided into the four great classes of,—1. Raw Materials; 2. Machinery; 3. Manufactures; and 4. Sculpture and the Fine Arts. A further division has been made according to the geographical position of the countries represented; those which lie within the warmer latitudes being placed near the centre of the building, and the colder countries at the extremities.

"Your Majesty having been graciously pleased to grant a site in this your royal park for the purposes of the Exhibition, the first column of the structure now honoured by your Majesty's presence was fixed on the 26th of September last. Within the short period, therefore, of seven months, owing to the energy of the contractors, and the active industry of the workmen employed by them, a building has been erected, entirely novel in its construction, covering a space of more than 18 acres, measuring 1851 feet in length, and 456 feet in extreme breadth, capable of containing 40,000 visitors, and affording a frontage for the exhibition of goods to the extent of more than 10 miles. For the original suggestion of the principle of this structure, the Commissioners are indebted to Mr. Joseph Paxton, to whom they feel their acknowledgments to be justly due for this interesting feature of their undertaking.

"With regard to the distribution of rewards to deserving Exhibitors, we have decided that they should be given in the form of medals, not with reference to merely individual competition, but as rewards for excellence in whatever shape it may present itself. The selection of the persons to be so rewarded has been intrusted to Juries equally composed of British subjects and of Foreigners, the former having been selected by the Commission from the recommendations made by the Local Committees, and the latter by the governments of the foreign nations the productions of which are exhibited. The names of these Jurors, comprising as they do many of European celebrity, afford the best guarantee of the impartiality with which the rewards will be assigned.

"It affords much gratification that, notwithstanding the magnitude of this undertaking, and the great distances from which many of the articles now exhibited have had to be collected, the day on which your Majesty has been graciously pleased to be present at the inauguration of the Exhibition is the same day that was originally named for its opening, thus affording a proof of what may, under God's blessing, be accomplished by goodwill and cordial co-operation among nations, aided by the means that modern science has placed at our command.

"Having thus briefly laid before your Majesty the results of our labours, it now only remains for us to convey to your Majesty our dutiful and loyal acknowledgments of the support and encouragement which we have derived throughout this extensive and laborious task from the gracious favour and countenance of your Majesty. It is our heartfelt prayer that this undertaking, which has for its end the promotion of all branches of human industry and the strengthening of the bonds of peace and friendship among all nations of the earth, may, by the blessing of Divine Providence, con-

duce to the welfare of your Majesty's people, and be long remembered among the brightest circumstances of your Majesty's peaceful and happy reign."

The Queen then, with sweet and distinct articulation, and with unfaltering voice, although her hand trembled a little, read a brief acknowledgment which had been prepared by the Home Secretary.

The Archbishop of Canterbury gave his blessing, the "Hallelujah" of Handel's was sung by a choir of some seven hundred voices, which were not heard, however, at the ends of the building, and the procession marched along both sides of the nave and transept amidst the shouts of the assembled thousands. Not a single incident happened to qualify the general satisfaction.

Having already given a plan of the building and its arrangement (vol. v., p. 1), and spoken generally of the contents (p. 34), it is only necessary to refer our readers to them. Our limits altogether prevent our going through the whole Exhibition in minute detail, and the *Times* and *Morning Chronicle*, and other papers, are already doing so with ability and judgment. Nor shall we attempt to reproduce the objects of exhibition by engravings, for that field is thoroughly occupied by the *Art-Journal*, the *Illustrated Official Catalogue*, and the *Illustrated London News*. Manufacturers will find in the *Art-Journal* a collection of engravings of the objects, wonderful in amount for the price at which they are sold, and excellently produced. We shall, therefore, generally confine our illustrations to the class of woven manufactures, giving specimens of the fabrics themselves, and shall select such subjects or classes of subjects for notice as fall within the particular scope of the JOURNAL. At present the excitement is too general and great to permit either quiet examination or sober judgment to be arrived at. As a whole Great Britain nobly vindicates her position, and there are very few departments of the Exhibition in which her manufacturers are not pre-eminent. Our own countrymen and women are really surprised at the national efforts and success even in points of taste, and certainly one effect of this Exhibition will be to dissipate a great amount of shopkeepers' fallacies in asserting that everything good comes from abroad. On all sides, the arrangements of the Exhibition on the British side are deservedly praised, and pronounced to be striking and picturesque.

The pecuniary success of the receipts has been commensurate with the public approval of the Exhibition itself. Up to the 23d May, the sale of season tickets has reached the number of 24,669, the proportions being 13,030 for gentlemen and 11,639 for ladies, the receipts being 65,486*l.* 8*s.* The daily receipts at the doors have been as follows :—

2d May, at 1*l.*	£560	0	0	13th May, at 5*s.*	£2229	10	0
3d „ at „	482	0	0	14th „ „	2064	15	0
5th „ at 5*s.*	1362	19	0	15th „ „	2426	0	0
6th „ „	1458	10	0	16th „ „	2556	10	0
7th „ „	1790	15	0	17th „ „	2472	5	0
8th „ „	2018	0	0	19th „ „	2345	0	0
9th „ „	1824	10	0	20th „ „	3360	15	0
10th „ „	1842	15	0	21st „ „	3512	5	0
12th „ „	1597	10	0	22d „ „	3797	11	0

In fact, the Commissioners are already virtually relieved of their guarantee, and the solvency of the institution is assured. The following we believe to be a correct statement of the debtor and creditor account on 23d May :—

Subscriptions paid	£65,000	0	0	Building	£79,800	0	0
By Catalogue Contract	3,200	0	0	Extra Galleries—Counters	35,000	0	0
By Refreshment Contract	5,500	0	0	Management to May	25,000	0	0
By Season Tickets	65,486	8	0				
By Entrance at the Doors	37,702	10	0				
	£176,888	18	0		£139,800	0	0
Further Receipts at the Doors.				Prize Fund	20,000	0	0
				Management, &c., till Exhibition is closed.			

The next question that will naturally arise is, What is to be done with the surplus? If it were sure that the public wished to perpetuate the building, the application of it would be in its purchase in the first instance, and about 75,000*l.* would have to be paid. But it is not yet certain, at all, that the building will remain, and the public must unmistakeably say "aye," or the Commissioners will be compelled by their deed of covenant to take it down.

A portion of the least influential and useful Exhibitors have been making efforts to be exempted from payment of the entrance-fees, and have been holding noisy meetings. From the first it has been declared that there should be no privileges, and even the Executive Committee themselves bought season tickets. The Exhibitors are certainly the last of all the claimants entitled to the privilege. They, in fact, already receive a privilege. They were not asked to subscribe. Their goods were admitted without rent, and they will obviously reap a decided advantage in the pre-eminent commercial advertisement which the Exhibition offers. The first persons, if any, to receive privileges were the disinterested subscribers; then all the band of willing helpers in Local Committees. The discontented Exhibitors addressed the Commission, and also presented a memorial to the Queen. The Commissioners' answer was as follows:—

"The question raised by this resolution is not now brought under the notice of the Commissioners for the first time. They have most carefully weighed the claims which have been made from various quarters for a long time past; many of which coming from persons who have contributed their time and money to the promotion of the Exhibition, they feel to be strong. Among these may be mentioned the Chairmen and Secretaries of Local Committees, the members of many Committees appointed by the Commissioners, and the subscribers of large sums to the funds of the Exhibition. They have, however, decided that it is necessary to decline the right of free admission in nearly all cases; and we are to add that neither the Commissioners themselves, nor the Executive Committee, nor even the Contractors for the Building, will have the right of entrance without paying the usual price for a Season Ticket.

"As regards the special case of Exhibitors, the meeting will bear in mind that at the origin of this undertaking it was proposed that the Exhibition should be made self-supporting, by demanding rent from persons taking stalls in it. This plan was abandoned by the Commissioners at an early period, and space was allotted free of all charge whatever, so that the voluntary contributions and the money paid for tickets are now the only funds for the support of the Exhibition. There would also be great physical difficulty in complying with the wish of the meeting. The number of Exhibitors exceeds 15,000 persons. It is manifest that the admission of so very large a body on the day of the opening would materially interfere with the admission of those who have taken Season Tickets, and who already amount to about the same number."

The Juries have commenced their irksome and invidious labours in right earnest, and the following gentlemen have been chosen chairmen of the thirty Juries:—

Class I.—Sir H. De la Beche, C.B., F.R.S., 28 Jermyn Street, Piccadilly, Director-General of Geological Survey of the United Kingdom.

II.—Mons. A. Dumas, Paris, formerly Minister of Agriculture and Commerce, Member of the Institute.

III.—Herr Von Lode, Russian Professor.

IV.—Professor R. Owen, F.R.S., College of Surgeons, London, Curator to the College of Surgeons.

V.—Rev. E. Moseley, M.A., F.R.S., Educational Office, Privy Council, Inspector of Schools, and formerly Professor of Mechanics, at King's College.

VI.—General Poncelet, Paris, Member of the Institute, and formerly Director of the Polytechnic School, &c.

VII.—I. K. Brunel, Esq., F.A.S., Duke Street, Westminster, Civil Engineer.

VIII.—Baron Charles Dupin, Paris, President of the French Commission, Member of the Institute, President of the Central Jury.

IX.—P. Pusey, Esq., M.P., F.R.S., Pusey, near Faringdon.

X.—Sir David Brewster, 1 Dorset Street, Manchester Square, Principal of the University of St. Andrew's.

XI.—Sir James Anderson, Lord Provost of Glasgow, Glasgow, Cotton Manufacturer.

XII.—Professor HERMANN, Munich, Ministerial Councillor, &c.
XIII.—GEORGE FAWKE KEMP, Esq., 34 Spital Square, Silk Manufacturer.
XIV.—Count VON HARRACK.
XV.—Herr VAN HOEGARDEN, Brussels, Manufacturer and Member of the Chamber of Commerce.
XVI.—Hon. Colonel ANSON, 25 Hill Street, Berkeley Square.
XVII.—M. VAN DE WEYER, London, Envoy Extraordinary and Minister Plenipotentiary of his Majesty the King of the Belgians.
XVIII.—H. TUCKER, Esq., 30 Gresham Street.
XIX.—Professor BOLLEY (of Switzerland), London, Head Commissioner of Switzerland in London.
XX.—WILLIAM FELKIN, Esq., Mayor of Nottingham, the Park, Nottingham, Hosiery Manufacturer.
XXI.—Lord WHARNCLIFFE, 28 Lower Brook Street.
XXII.—Hon. HORACE GREELEY, Editor of the *New York Tribune*.
XXIII.—Duc de LUYNES, Paris, Member of the Institute, &c.
XXIV.—Lord DE MAULEY, 21 St. James's Place.
XXV.—The Duke of ARGYLL, Stafford House, St. James's.
XXVI.—The CHEVALIER DE BURG, Vienna, Director of the Imperial Polytechnic Institute, Vice-President of the Society of Arts and Manufactures, and Member of the Imperial Academy of Sciences at Vienna.
XXVII.—Signor PIETRO PISTRUCCI, Rome, Artist.
XXVIII.—Señor DON JOACQUIM ALFONSO, Madrid, Director of the Conservatory of Arts in Madrid.
XXIX.—Lord CANNING, 16 Grosvenor Square.
XXX.—Herr Von VIEBAHN, Berlin, President of the Zollverein Commission for the Exhibition of 1851.

Of course all their proceedings are for the present confidential and secret. But it is well known that the instructions issued by the Commission to them have been strictly in accordance with the general principles already laid down and published. Consequently *individual* competition will be avoided, and the medals will be given for general excellence. Applying these principles, it may be anticipated that the distribution will be very wide and general. It is now quite obvious that the medals are the only mistake in the whole proceedings of the Exhibition; still they *must* be awarded, and the object, no doubt, will be to award them so as to neutralise all the unpleasant results, easily to be foreseen, as much as possible.

MERCER'S PATENT.

ONE of the most remarkable processes which the Exhibition is likely to bring into instant public notice, is that by which Mr. Mercer improves cotton and other woven fabrics, in rendering them more compact and consequently *finer*, and by making them more susceptible of developing brilliant colours. We give specimens of the effects produced for Messrs. Liddiard, by Messrs. Hargreaves, and hope to follow them by illustrations of other colours. One piece of the muslin has been dyed in the usual way, the other has undergone Mr. Mercer's process, which he thus describes:—

Improvements in the Preparation of Cotton and other Fabrics and Fibrous Materials.

My invention consists in subjecting vegetable fabrics and fibrous materials (cotton, flax, &c.), either in the raw or manufactured state, to the action of caustic soda or caustic potash, dilute sulphuric acid or chloride of zinc, of a strength and temperature sufficient to produce the new effects, and to give the new properties to them which I have hereafter described. The mode I adopt is as follows:—

I pass the cloth through a padding machine charged with caustic soda or caustic potash, at 60 or 70 degrees Twaddle's hydrometer, at a common temperature, at (say) 60 degrees Fahrenheit or under, and without drying the cloth wash it in water; then pass through dilute sulphuric acid and wash again. Or I run the cloth over and under a series of rollers in a cistern with caustic soda or caustic potash, at from 40 to 50 degrees Twaddle's hydrometer, at the common temperature of the atmosphere, the last two rollers being set so as to squeeze the excess of soda or potash back into the cistern; the cloth then passes over and under rollers placed in a series of cisterns charged at the commencement of the operation with water only, so that at the last

cistern the alkali has nearly been all washed out of the cloth. When the cloth has either gone through the padding-machine, or through the cisterns above described, I wash the cloth in water, pass it through dilute sulphuric acid, and wash again in water.

When I adapt the invention to grey or unbleached cloth made from the fibrous materials before mentioned, I first boil or steep the cloth in water, so as to have it thoroughly wet, and remove most of the water by the squeezes or hydro-extractor, and then pass the cloth through the soda or potash solution, &c., and proceed as before described.

I apply my invention in the same way to warps, either bleached or unbleached; but, after passing through the cistern containing the alkali, the warp is either passed through squeezes or through a hole in a metallic plate, to remove the alkali, and thus passed on through the water cisterns soured, and washed as above described.

When thread or hank yarn is operated on I immerse the thread or yarns in the alkali, and then wring them out as is usually done in sizeing or dyeing them, and afterwards wash, scour, and wash in water as above described.

When I apply my invention to any fibre in the raw state, or before it is manufactured, I first boil it in water, and then free it from most of its water by the hydro-extractor or a press. I then immerse it in the alkaline solution, and then remove the alkali by the hydro-extractor, or I press the alkali out with a press, and then wash in water; sour in dilute sulphuric acid, wash again, then remove the water by a press or hydro-extractor, as above described.

When cloth made from vegetable fibre (cotton, flax, &c.) has been subjected to the action of caustic soda or potash as above described, by padding, immersion, or any other way, and then freed from the alkali by souring and washing according to my said invention, the cloth will be found to have undergone certain changes and alterations, and have acquired certain new and valuable properties, the most remarkable I here describe. It will have shrunk in its length and breadth, or have become less in its external dimensions, but thicker and closer; so that, by the chemical action of caustic soda or potash, I produce in cotton and other vegetable fabrics and fibres effects somewhat analogous to that which is produced on woollen by the process of fulling or milling. It will have acquired greater strength and firmness, each fibre requiring greater force to break it. It will also have become heavier than it was before it was acted on by the alkali, if in both cases it be weighed at the temperature of 60 Fahrenheit or under. It will have acquired greatly augmented and improved powers of receiving colours in printing and dyeing. The effects of the application of my invention to the vegetable fibre, in any of its various stages before it is manufactured into cloth, will be readily understood by reference to its effects upon cloth composed of such fibres.

Secondly: I employ sulphuric acid diluted to 105 Twaddle's hydrometer, and at 60 Fahrenheit or under. I use this acid mixture instead of caustic potash or soda, and operate in all respects the same as when I use soda or potash, except the last souring, which is here unnecessary.

Thirdly: When I employ solution of chloride of zinc, instead of soda or potash, I use the solution at 145 degrees Twaddle's hydrometer and 150 to 160 degrees Fahrenheit, and operate in all respects the same as when I use soda or potash. When I operate on mixed fabrics, partly of vegetable and partly of silk, woollen, or other animal fibres (such as de-laines, orleans, &c.), I prefer the strength of the alkali not to be above 40 degrees Twaddle's hydrometer, and the heat not above 50 degrees Fahrenheit, lest the animal fibres should be injured.

I may, in conclusion, remark, that the description of the apparatus or machinery, and the strength and temperature of the soda or potash, sulphuric acid, or chloride of zinc solution, may be varied to a considerable extent, and will produce proportionate effects without at all deviating from my invention. For instance, caustic potash or soda may be used even as low as 20 degrees Twaddle's hydrometer, and still give improved properties to cotton, &c., in receiving colours in printing and dyeing, particularly if the heat be low, for the lower the temperature the more effectively the soda or potash acts on the fibrous material above described. I, therefore, do not confine myself to any particular strength or temperature of the substances I employ; but the particular strength, heat, and process here described is what I have found the best, and which I prefer.

And I claim as of my invention the subjection of cotton, linen, and other vegetable fibrous material — either in the fibre, or any stage of their manufacture, either alone or mixed with silk, woollen, or other animal fibrous material — to the action of caustic soda or caustic potash, dilute sulphuric acid, or solution of chloride of zinc, of a tem-

Muslin,

Prepared by Mercer's Patent and Dyed Safflower.

Exhibited by Messrs. Liddiard in the Class of British Fabrics at the Great Exhibition of 1851.

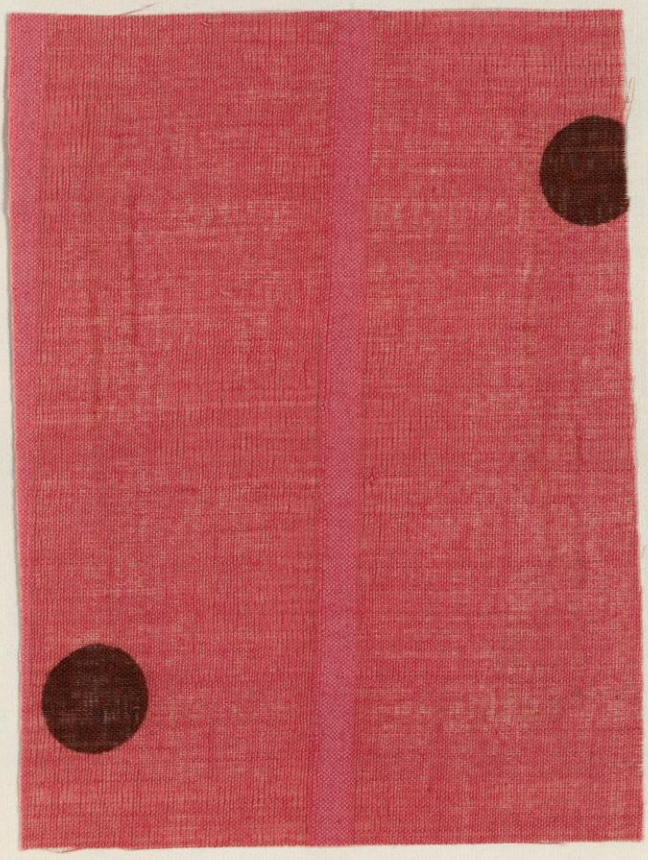
perature and strength sufficient to produce the new effects, and give to them the new properties above described, either by padding, printing, or steeping immersion, or any other mode of application.

The accompanying specimens of muslins, printed upon Mercer's patent prepared cloth, shew how much the fibre of the cotton has become contracted or fulled, how it has become finer and stronger, and obtained increased powers

Muslin,

Plain Dyed.

Exhibited by Messrs. Liddiard in the Class of British Printed Fabrics in the Great Exhibition of 1851.



of receiving colours in printing and dyeing. We may observe, that the process also increases the permanency of all steam colours, and is applicable to every colour that has been used either in printing or dyeing. The other specimens are madder lilacs, both printed at the same time, with the same colour, and dyed together, and the result fully proves the value of the patent.

Muslin,

Printed with Madder Lilac upon the Cloth generally used, for Messrs. Liddiard,

Exhibited by them in the Class of British Printed Fabrics, in the Great Exhibition of 1851.

Muslin,

Printed with Madder Lilac upon Mercer's Patent Prepared Cloth, for Messrs. Liddiard,

(Observe the increased fineness of threads and the reduced width between the stripe.)

Exhibited by them in the Class of British Printed Fabrics at the Great Exhibition of 1851.

WOVEN FABRICS EXHIBITED AT THE EXHIBITION OF 1851.

THE collection of SWISS PRINTS from the noted manufactory of Messrs. Gros Odier, Roman, and Co., will be found in the French department in the south-eastern gallery, where the whole of the Rhenish prints have been very tastefully arranged. The specimens inserted in this number appeal to a variety of tastes, and each one for its own merits deserves to be a favourite. The rosebud jaconot is the most ambitious among the designs. It is graceful, well distributed, and shews that the artist has sought his type in nature: it is effective in all colourings. The zig-zag jaconot, though simple, is novel and very neat. But perhaps the favourite is the little purple diapered berry on the brilliante. Here we find the old sound principle of equal distribution approaching to a kind of geometric treatment, which is always effective.

In the excellent show which Messrs. Hoyle make on the British side, are a number of MUSLINS, which will attract notice for novelty of style. We insert three varieties of them. The engraving upon them is entirely by mechanical means, the process being similar to that employed by A. Collies, in his *Trésor de Numismatique*, &c., and by Mr. Bates, of London, for his medallion engravings. This mode has been applied by Messrs. Lockett, of Manchester, in the production of engraving for printing muslins and other fabrics. We think if the capabilities of the mode be duly studied, much may be expected from a further developement of it. We have not observed anything else similar to these designs exhibited by any other printer.

Messrs. Bayley and Craven's CALICO, with its fuchsia trail, shews how a design on a medium quality of cloth, and printed in a most familiar colour, may be made effective.

Among the GINGHAMS shewn by Mr. Walker, of Earlston, Berwick, the present specimen is one of the most noticeable. It is a handloom production

woven from the best water-twist cotton. It is a manufacture now almost peculiar to Scotland, in which the weavers earn wages at the rate of 6*d.* a-yard.

Messrs. Crocker have entered into the Exhibition with great spirit, exhibiting largely in many departments. Among their CHINTZES appears the pattern which we have inserted. The never-ending rosebud, being well distributed, and forming a furniture never likely to be out of fashion.

Roller-printed, by Gros Odier, Roman, and Co.,
(of Wesserling, Haut-Rhin),

And exhibited by them in the Class of FRENCH PRINTED FABRICS at the Exhibition of 1851.

FIGURED ORGANDIS OR PLUMETIS,
Block-printed, by Gros Odier, Roman, and Co.,

And exhibited by them in the Class of FRENCH PRINTED FABRICS at the Exhibition of 1851.—B. Salomons and Sons, Agents.

Brilliantes,

Printed by Gros Odier, Roman, and Co.,
(of Wesserling, Haut-Rhin),

And exhibited by them in the Class of French Printed Fabrics at the Exhibition of 1851.—B. Salomons and Sons, Agents.

Printed by Gros Odier, Roman, and Co.,
(of Wesserling, Haut-Rhin),

And exhibited by them in the Class of FRENCH PRINTED FABRICS in the Exhibition of 1851.—B. Salomons and Sons, Agents.

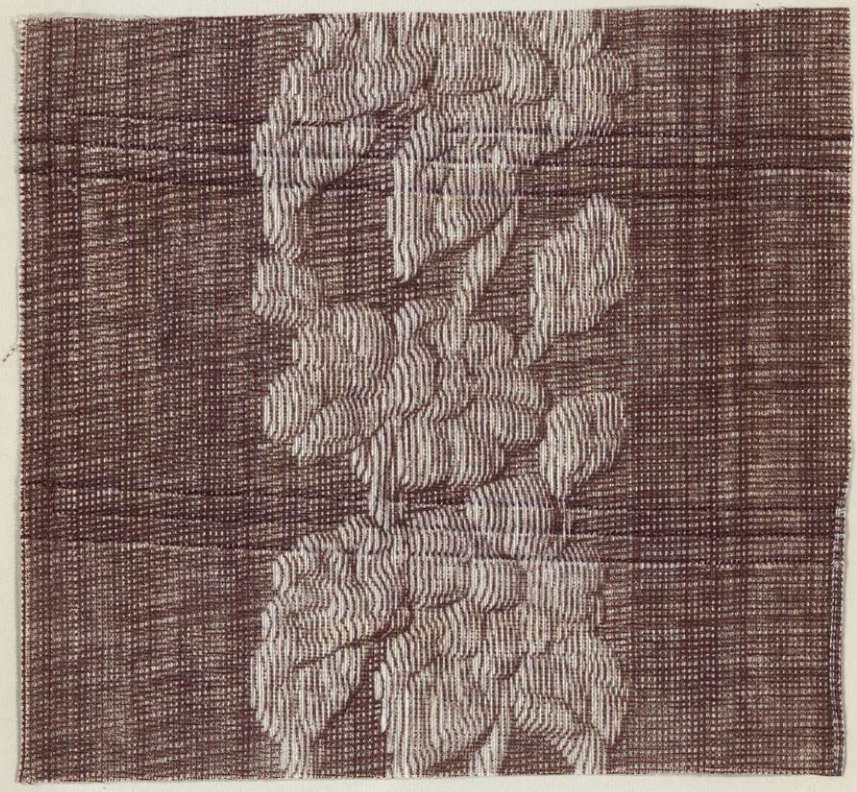
Engraved by Mechanical Means, by Messrs. Lockett, and printed by T. Hoyle and Sons,

of 1851.

Engraved by Mechanical Means, by Messrs. Lockett, and printed by T. Hoyle and Sons,

And exhibited by them in the Class of BRITISH PRINTED FABRICS at the Exhibition of 1851.

Engraved by Mechanical Means, by Messrs. Lockett, and printed by T. Hoyle and Sons,



And exhibited by them in the Class of British PRINTED FABRICS at the Exhibition of 1851.

Printed by Bayley and Craven, Manchester,

And exhibited by them in the Class of PRINTED FABRICS in the Exhibition of 1851.

Chintz Furniture,

Printed for J. and A. Crocker,

And exhibited by them in the Class of Printed Fabrics at the Exhibition of 1851.

PICTURE FRAME, manufactured by Elkingtons, of Birmingham.

THE accompanying engraving will fully justify the selection of the present example as a very pretty and successful frame ; but the reality itself is even more successful. The arrangement of the lines is graceful and well balanced, and

the Cupids are skilfully introduced and well combined with the ornament. It is a favourable specimen of the modern French school.

Miscellaneous.

The Queen has paid at least a dozen visits to the Exhibition since its opening, going steadily through it, examining everything with marked attention, and making large purchases. Among others, we hear that Her Majesty has bought the dessert service manufactured by Messrs. Minton. — The Shilling Day passed off well. Great crowds were expected, but not by those who know how much every class has to be educated even in sight-seeing. 920*l.* 2*s.* were taken at the doors, which represent 18,402 visitors.

The festivities in honour of the Exhibition are in full swing, everybody striving to do honour to the actors in the great work, especially the foreigners. The most noticeable event up to this time, perhaps, has been the fête at Richmond, presided over by Lord Ashburton, and conducted with great tact by Mr. J. Crocker, assisted by Messrs. Barber, Crace, &c. It was remarkably brilliant and successful.

At the Royal Academy dinner, on the 3d May, His Royal Highness Prince Albert made the following remarks, which ought to be recorded in our columns:— "The production of all works in art or poetry requires, in their conception or execution, not only an exercise of the intellect, skill, and patience, but particularly a concurrent warmth of feeling, and a free flow of imagination. This renders them most tender plants, which will thrive only in an atmosphere calculated to maintain that warmth, and that atmosphere is one of kindness—kindness towards the artist personally, as well as towards his production. An unkind word of criticism passes like a cold blast over their tender shoots, and shrinks them up, checking the flow of the sap which was rising to produce, perhaps, multitudes of flowers and fruit. But still criticism is absolutely necessary to the developement of art, and the injudicious praise of an inferior work becomes an insult to superior genius. In this respect our times are peculiarly unfavourable when compared with those when Madonnas were painted in the seclusion of convents; for we have now, on the one hand, the eager competition of a vast array of artists of every degree of talent and skill, and, on the other, as judge, a great public, for the greater part wholly uneducated in art; and this led by professional writers, who often strive to impress the public with a great idea of their own artistic knowledge, by the merciless manner in which they treat works which cost those who produced them the highest efforts of mind and feeling. The works of art, by being publicly exhibited and offered for sale, are becoming articles of trade, following as such the unreasoning laws of markets and fashion, and public, and even private, patronage is swayed by their tyrannical influence. It is, then, to an institution like this, gentlemen, that we must look for a counterpoise to these evils. Here young artists are educated and taught the mysteries of their profession; those who have distinguished themselves, and given proof of their talent and power, receive a badge of acknowledgment from their professional brethren, by being elected associates of the Academy, and are at last, after long toil and continued exertion, received into a select aristocracy of a limited number, and shielded in any future struggle by their well-established reputation, of which the letters 'R.A.' attached to their names give a pledge to the public. If this body is often assailed from without, it shares only the fate of every aristocracy; if more than another, this only proves that it is even more difficult to sustain an aristocracy of merit than one of birth or of wealth, and may serve as an useful check upon yourselves, when tempted at your elections to let personal predilections compete with real merit. Of one thing, however, you may rest assured, and that is, the continued favour of the Crown. The same feelings which actuated George III. in founding this institution still actuate the Crown in continuing to it its patronage and support, recognising in you a constitutional link, as it were, between the Crown itself and the artistic body. And when I look at the assemblage of guests at this table, I may infer that the Crown does not stand alone in this respect, but that those feelings are shared also by the great and noble in the land. May the Academy long flourish and continue its career of usefulness!"

Society of Arts Conversazioni.— The series announced have been held with very satisfactory results. Few foreigners have yet arrived in London, and some time will naturally elapse before the existence of these *réunions* can become known to those whose language and customs differ from ours. At the first Conversazione a few pictures of the English School were lent by Mr. Criswick and Mr. Wass; Portfolios of Sketches, Books of Engravings, and Statuettes, were contributed by Messrs. Colnaghi, Messrs. Day, and Messrs. Cundall and Addey. The band of the Royal Artil-

lery was in attendance, and performed at intervals throughout the evening. On the second evening the Pictures were furnished by Mr. Creswick, R.A., and Mr. R. Ansdell. Mr. Mulready, R.A., also sent some of his fine Chalk Drawings and Studies. Progressive impressions, shewing the mode of producing Coloured Lithography, were contributed by Messrs. Hanhart, and some Bronzes, by Mr. Gambart. Mr. Spiers, of Oxford, sent a choice collection of Water-colour Drawings by eminent English artists. The Hernn Pauer and Menter, who have only lately arrived from Vienna and Munich, gave peculiar interest to the evening by their performances on the pianoforte and violincello. Messrs. Broadwood, with great liberality, lent the Council one of their new repetition-action pianos of first-class quality. M. Frélon played some pieces on the "Orgue expressive à Percussion." On the next Wednesday the foreign visitors heard some specimens of a class of music peculiar to our country, and very little known out of it; and on that occasion a few glees of the highest character were sung by the best performers within the power of the Council to obtain. The same evening the rooms were enriched with a collection of miniature paintings, a branch of the sister art in which also England stands alone. The object of these Soirées is to return to those who are this year visiting our metropolis from foreign countries some of the hospitality and attention which they are so forward to shew to Englishmen.

The interest of the EXHIBITION continues to be perfectly engulphing. The *Times* thus graphically describes how everything is attracted within its vortex:—"The Great Exhibition has killed everything else. The Court, the two Houses of Parliament, the nobility, the gentry, the commonalty, the army, the police, carriages, cabs, and omnibuses, are all dancing attendance upon it. The shops are unfrequented. The places of public amusement are comparatively deserted. Even the railways lose their summer excursionists. Hampton Court and Greenwich exhibit in vain their horse-chestnuts in bloom and their whitebait in season. We question whether even the great Derby day will attract so large a fraction of a million as it has usually done. The tall plant in Hyde Park has smothered everything in its neighbourhood. The Exhibition is London; the Exhibition is the Parliament; it is the British empire; it is house and home; it is drawing-room and study; it is parterre, conservatory, and promenade; it is park and club; it is shop and bazaar, theatre, picture-gallery, panorama,—everything, in a word, which a man or a woman wants in this metropolis. The possessor of a season-ticket, with a small surplus for cabs, or, in default thereof, a good pair of legs, is set up for the season. In a palace large enough to be a glass-case for Versailles, or Windsor Castle, filled with all that is ingenious, precious, beautiful, curious, or rare, he walks at large, monarch of all he surveys. From the regalia of Indian dynasties to the last invention of European science—from the rude manufactures of people who dwell by the desert, or under the Mountains of the Moon, to the patent for separating the long and short fibres of wool, which is to found a new family of *millionaires*, everything that the eye can gaze on or the mind can apprehend, invites admiration. There is no door to be opened—no wants intimated—no importunity to be repelled,—no purchases expected. To all appearance some twenty or thirty thousand of this metropolis have resolved to enjoy themselves in this palace till they are compelled to be content with two days in the week, or to be lost in a crowd still larger than themselves. But such days and such insatiable wanderings are very exhaustive. Even two or three hours amid 'the hum of nations' is enough to knock up a strong man; and we question whether, since the war, there ever was such an amount of physical and mental fatigue as there has been in this metropolis every evening since the first of this month."

The ridiculous RUMOURS respecting the HYDE PARK BUILDING which were circulated before the opening have now been silenced, but they are worth recording. One day we heard it stated, on grave authority, that you had to pass through two feet water in certain parts, so deep were the ponds! The next we were assured that some of the columns had been discovered filled with *gunpowder!* Grave statements were made that there were myriads of sparrows which could not be exterminated. They could not be shot, lest the glass should be broken, and there were not sparrow-hawks enough to kill them in time for the opening! At the present time a solitary sparrow occasionally perches among the trees in the transept, and he is a prisoner, for he cannot get out; and netting has been fixed so that no more can get in.

OPINIONS ON THE EXHIBITION.—Among a number with which we are favoured we may quote the following as suggestive:—Many of our own countrymen, whose

opinions deserve the greatest respect from their sincerity and disinterestedness, have never expressed any but a very qualified approbation of this undertaking, from the fear that it may be only a means of giving an additional stimulus to that spirit of unbridled competition, which, in their opinions, is too apt to divert the minds of men from those more lofty aspirations in which, whatever form they may take, true happiness can alone be found. But, without entering into the vast field of inquiry to which such a question leads, it may be remarked, that the very efforts which the Exhibition has undoubtedly caused in this country to produce that which is intrinsically excellent, whether in construction or design, must have had a healthful and improving effect on the minds of all engaged, whether manufacturers, designers, or artisans; far more so than the general aim of producing that only which is saleable at the moment, or, in other words, which suits the public taste—often most false, if not depraved. Again, the results of those efforts made over the length and breadth of the civilised world will react upon the public taste, and tend to create a future demand for products evincing skill and beauty, which will call for renewed exertions on the part of the producer. Let no one call such exertions profane. Every effort of man, whether in the pulpit or the counting-house, in the senate or in the factory, whether drudging in a mine or driving a locomotive engine—every such effort made with a hearty wish to do the best possible under the circumstances—is the best action that then can be performed—it is an act of worship!

The American papers are boasting of the prodigious impression which their gutta-percha shoes make in their district of the Exhibition, and also of the unparalleled excellence of their Talbotypes; and then they say, "It would do the heart good to witness the crowds that surround the portrait of General Briggs!"

Exhibitions before 1850.—A correspondent sends us the following memoranda:—The Polytechnic Exhibitions, got up by Mechanic Institutions, were of a very miscellaneous character. I am not certain that the Birmingham Exhibition took place in 1836, although I remember visiting it. I think it was in 1838, and always considered the Exhibition of the Manchester Mechanics' Institution as the first. The Covent Garden Bazaar took place in June, 1845. The Exhibition at the School of Design, Manchester, opened at Christmas, 1845. This continued for two or three months in 1846. The first was distinctly an ordinary bazaar of voluntary contributions and consignments for sale. The second was purely an Exposition of Manufactures in immediate connexion with Design, for not a single article of any other character was admitted. There was no similarity, in my opinion, between the two Exhibitions, for the one was a fancy fair and the other a place for study, the value art gives to manufacture being the point illustrated.

Designs from the School of Design.—It was suggested some two years ago, in reports made to the Board of Trade by Mr. H. Cole (*see* Evidence before Commons' Committee on Schools of Design), that the Government should seek to obtain ornamental designs from the Head School when they might be wanted; but the authorities shrunk from admitting so practical a test of the ability of the School. We hear that Lord Seymour, wanting some ornamental lamp-posts for Buckingham Palace, has recently applied to the School and obtained several designs, one of which has been selected for the purpose, and is about to be executed.

Sacred Pictures by the Old Masters.—The Holy Family (La Belle Jardinière), by Raphael; the Last Supper, by Leonardo da Vinci; the Adoration of the Shepherds, by Rembrandt; the Descent from the Cross, by Rubens,—subjects, so well known to all who have any knowledge of the history of art, are now produced by Messrs. Cundall and Addey in wood-engravings, on an unusually large scale. The style of the fine old copperplate engravings, in which they have hitherto been translated, has been successfully preserved by the engravers. A tinted block has been used, which heightens the effect of the lights and shadows. For some thirty pence each engraving, every schoolroom and nursery in the kingdom may now adorn their walls with these works, which have hitherto been limited to a few libraries and portfolios.

Alleged Piracy.—Our readers know how strongly we always deprecate any piracy of designs. On the other hand, it is our duty not to allow claimants to fall into the mistake of asserting rights of property to old subjects. In reference to the damask *fleur-de-lis* which we inserted in our last number—a subject many centuries old, and certainly as common a property as anything can be, Mr. Brown, of Halifax, has circulated the following lithograph:—"Allow me to draw your attention to The Journal of Design for the present month, in which appears

a pattern of the *fleur-de-lis* manufactured by Mr. Ward (a sketch of which is given on the other side), and to state that the design was originally adapted for damasks by myself, and is shewn in my department in the Great Exhibition in various colours, and which I continue to make in piece dyed unions and dyed yarn qualities." When the *fleur-de-lis* was first used in damasks we apprehend is a fit subject for antiquarian investigation, so many centuries old must the use be.

MR. CHEVERTON'S REDUCTION OF THE "THESEUS."—The seventy casts of the reduction of the Theseus of the Parthenon are now in the course of distribution to the several subscribers. The original reduction in alabaster, by Mr. Cheverton's admirable mechanical process, is at Brucciani's, the plaster figure-maker, Little Russell Street, Drury Lane, who moulded and cast in plaster the copies for the subscribers. The subscription was one guinea, for which each subscriber was guaranteed a cast and one of the chances for the original alabaster; for the decision of which we understand that a meeting of the subscribers will soon be called. Mr. Cheverton's process of reduction insures the most wonderful accuracy, and will, we hope, be brought into active operation by manufacturers in reducing high works of formative fine art to a scale adapted for English houses of the usual size, so as to command probably a remunerative amount of sale. As the process is by a *machine* perfected by Mr. Cheverton, it may be said to be more a work of nature than of art, and ranks in its quality with the Daguerreotype and Calotype. We should wish to see nature still further enlisted to work in this case, by perpetuating the result by electrotype precipitation. It is a feature of modern times that nature lends herself to be our handmaid in accomplishing with still greater accuracy what human brains and hands were before compelled to work out. If we are to see in '51 electrotype copies by Messrs. Elkington, or others, of this reduction of the Theseus, it will be the result of the happy union of two kind actions of Dame Nature, in the mechanical reduction and electrotype copying of one of the finest works of art in the world, unfortunately now in fragments, but finer in its ruin than many other works in their perfection. We hope the combination of these processes will not be allowed to rest, but that we shall have the Ilissus in the same manner reduced and perpetuated, as well as the exquisite half-draped Venus of the British Museum, and other fine works in the same collection. An additional reason for hoping for the electrotyping of some of the reduced copies of the Theseus is that they are rendered by this means into a permanent material, metal, whereas the original being in alabaster, and the copies in plaster of Paris, they are both very liable to injury. We cannot but add, that the faithfulness of Mr. Cheverton's process is such that not only are all the proportions and traits of the original preserved, but in the parts where the original colossal marble has been injured by time, the surface being destroyed in many places, the transfer by the machine is so accurate, that the surface of the reduction appears as if itself had been exposed to the same rough usage as the original, and a similar action of time and weather.

SCHOOLS OF DESIGNS.—In your review of the Exhibition of the works of the students of the Schools of Design, at Marlborough House (p. 25), you take credit to yourself, and very justly, as having been the means in a *great* measure of the improved state of things which has been produced, and both the public and the Government are much indebted to you for the *surveillance* which you exercise over that institution, which I hope will become a national one. You are, however, I think, too severe in your strictures about provincial masters sending their own works for exhibition. It is true, that the present Head Masters of the School at Somerset House have attained their eminent position by the public exhibition of their works, and that the inspector is called upon to exhibit specimens of his reports, such as they are. The latter is, however, handsomely paid for his services, while many of the masters of the Provincial Schools receive about the same remuneration that a clerk does, although they have had to study for years to fit themselves for masters. There can be no objection, however, to those masters who have never been students of the Schools of Design themselves, and who are enjoying the large salaries, being called upon to shew specimens of their fitness as masters, and who have hitherto mistaken a little "frothy parade" in a local newspaper as unquestionable evidence of their own ability, as well as of the success of their Schools. With the assistance of your valuable JOURNAL these masters will find their proper level in course of time.—I am yours obediently, JUSTITIA.

MUSEUMS OF MANUFACTURES. — That the French at least are alive to the importance of the keeping and gathering together assemblages of objects from the Exhibition of 1851, which are likely to

be suggestive of improvements and facilities in the production of manufactured articles, is proved by the vote in the National Assembly for the purchase of manufactured articles, machinery, and *new inventions, to enrich the public collections of France.* Up to the present time I am not aware that any such intention is entertained on the part of our own Government, though the necessity for doing so is of the utmost importance to us as a manufacturing nation. Invaluable as the Exhibition of 1851 will be to the artisans of England, much of its value will be lost if the most instructive of the objects shewn therein are not secured and deposited in public collections readily accessible to all. The necessity for our doing so becomes more imperative every day. With the exception of the few purchases made from the French Exposition of 1844 by the School of Design, I am not aware that anything has been done in order to stimulate inventive design in connexion with industrial art. The purchases alluded to were transferred to the keeping of the Schools of Design, which, excellent as they are for the purposes of preliminary education in art, are perhaps not fitting receptacles for objects which it is desirable should be accessible to the general public, and more particularly to the artisans who may be supposed to be more directly interested, for such a purpose. It is a matter of extreme regret that local museums are or have not been more generally established, for, most assuredly, at such a period as that which now approaches, it becomes important that some effort should be made to retain among ourselves the productions of those Continental nations which may be instructive to us. A visit to the Exhibition of 1851 will be an event to be remembered; but amidst the many thousand objects there brought together, it is not to be supposed that the visitor who has been accustomed to regard objects individually, can retain more than a very faint and indistinct idea thereof. I need scarce repeat the truism equally applicable to art as morals, viz., that "it grows with what it feeds upon," and hence the necessity for a selection of the best works by the best Continental art-workmen being secured, and placed in situations where they may be readily referred to. Apart from this consideration there is another. It is not too much to suppose that there are those who may not be able to visit the Exhibition; but if the suggestion were carried out of purchasing specimens from the Exhibition, and depositing the same in local museums, the excluded might yet be benefited thereby. There are other grounds upon which I might have urged the importance of making purchases, but when the initiative is taken by our friends across the Channel, it is time we were bestirring ourselves. If *manufactured articles, machinery, and new inventions, are to be purchased to enrich the public collections of France*, why should we not be equally solicitous for the public collections of England? We have at the present moment no national collection which can at all be regarded as representing our advance in manufactures or our progress in invention. Among the thousands of pounds annually expended upon securing a questionable patent right, we have even no collection of models cared for and protected, as we find in America. To the Museum of Economic Geology we naturally turn our expectations to its becoming the acknowledged centre, wherein several branches of industry will eventually be represented, and the various interesting processes used therein be exposed to the gaze of the inquiring mechanic and the curious visitor. While I trust that the liberality of the manufacturer and the desire of our rulers to aid so important an educational establishment will be evinced by the presentation of specimens, and by a liberal grant of money, I trust it will not be forgotten that even this sphere of operation is necessarily limited. Much valuable information and knowledge would be conveyed to the Birmingham mechanic by a collection of French bronzes, jewellery, and metal-working readily accessible to him,—or the Stourbridge glass-worker having equal facility for referring to an assemblage of Baccarat and Bohemian glass,—or a Kidderminster weaver by having his fancy stimulated by the glowing colours and exquisite forms displayed on many of the carpets of Aubusson, &c. Some step should be taken the more substantially or permanently to enable us to benefit by the Exhibition of 1851. Unless this attempt is made, much of the value of the collective assembly of the industry of all nations will be lost. Of the necessity for availing ourselves of any legitimate means to secure an advancement in manufactures by the better education of our workmen, I daily see the importance, and this cannot be done more effectively than by a permanent collection of what directly appeals to their understanding in visible shape, and through the medium of local museums, in which contributions of a similar kind to the industry of the district in which it is situated may be found. A.

Birmingham.

Original Papers.

WOOLLEN AND MIXED GOODS IN THE GREAT EXHIBITION.

PUBLIC attention is naturally more directed to the ornamental and showy portion of the Great Exhibition than to the more modest staple manufactures. This tendency it is our peculiar duty to endeavour to correct, and in the present article we propose to convey to our readers a general idea of the nature of the specimens exhibited in that portion of the Exhibition which is devoted to the display of woollen goods. With a view to doing this more effectually than could possibly be done by mere description of the articles, we have obtained specimens of some of the articles themselves, which not only enable the perfection of the manufacture or peculiarity of the fabric to be at once perceived, but will also afford in future years a means of testing, by comparison, the degree of progress or improvement which may be made from this date. In looking over so vast a collection of woollen goods as are displayed, it will be observed how small a proportion of articles there are which have been produced as mere curiosities; the chief aim of manufacturers appears to have been to vie with each other in the production of the best articles of strict utility at the most marketable price.

The principal specimens of woollens will be found in the south-west portion of the building. But before proceeding to the examination of the cloths, it may be well to examine the specimens illustrative of the various processes through which the wool is passed in the course of its manufacture; and this will be best done by visiting the stalls of Messrs. John Brooke and Sons, of Huddersfield, who exhibit 18 specimens from which may be learned the progressive stages of the manufacture; Messrs. H. Pearse and Co., of Darlington, exhibiting specimens of wool in its various stages of preparation for the loom; Messrs. Rand and Sons, of Bradford, exhibiting the weft when drawn to 160's, and 1 lb of the yarn when so spun measures 89,600 yards; and Mr. Walter Milligan, of Bingley, exhibiting samples of alpaca wool as imported, sorted, combed by hand, and arranged for dressing,—also specimens illustrative of the method employed to draw them to a thread of uniform colour. The cloths to which we would first allude are some specimens of Irish frieze and doeskin tweeds exhibited by Mr. Richard Allen, of Dublin.

Irish Frieze,

Manufactured by R. Allen, Dublin.

Irish Doeskin,

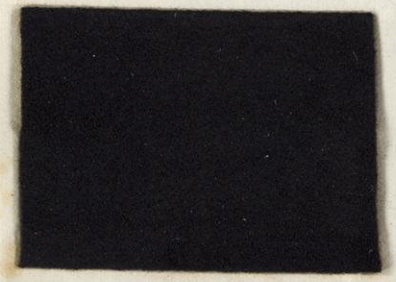
Manufactured by R. Allen, Dublin.

These specimens give a promise that the woollen trade of Ireland, which at the close of the last and commencement of the present century had obtained some celebrity, may emerge from the lethargy into which it had since sunk, and thus powerfully aid in affording employment to the Irish operatives. They exhibit considerable improvement both in quality and appearance of the texture, and those who want authority for using them may know that Prince Albert does so. The contributions of the Welsh manufacturers, which are

adjacent, shew that they are far behind the like articles contributed by Ireland. Near to these may be seen some of the finest specimens of fur beavers exhibited, which are from the manufactory of Mr. W. Carr, of Bath, but they are too heavy to admit of insertion in our pages.

Among the manufactures of Stroud are exhibited some of the finest specimens of woollen cloths in the Exhibition. Stroud, in Gloucestershire, is situated on a brook, the waters of which are peculiarly adapted to the dyeing of scarlet, and its banks are consequently crowded with mills. It is also somewhat noted as a district in which the manufacturers perform the whole of the processes necessary to complete their goods, not letting them out to hire, as is the case in some parts of the West Riding. This circumstance may to some extent account for the general superiority of these cloths, as the manufacturer is better able to direct the precise treatment that each fabric requires. Among the principal exhibitors in this department are Messrs. Barber, Howse, and Mead, who contribute specimens of superfine West of England cloths; Mr. Wm. Helme, who exhibits fancy cassimeres, doeskins, and fancy waistcoatings and dresses: Messrs. S. S. Murley and Co. exhibit some specimens of fine cloths; Mr. Chas. Hooper, specimens of cloths and doeskins; Messrs. P. P. and C. Playne exhibit excellent samples of their woollen goods; and Messrs. W. and C. Staunton, some exceedingly fine cloths of two colours, dyed by Partridge, of Stroud. These cloths are used for officers' and military cloaks in India and China. Messrs. W. Palling, of Painswick, exhibit specimens of their billiard-cloths; these cloths are always dyed in the piece, and require to be dressed with great care and judgment, so as to have as little nap as possible upon them, in order that the balls may run freely on the table. This firm also exhibits specimens of its famous scarlet cloths. We may also call attention to the white and scarlet cloths of R. Davies and Son for general excellence. The following specimens of West of England cloths are manufactured by Josiah Overbury:—

Specimen of Black West of England Cloth,



Manufactured by Josiah Overbury.

Specimen of Mulberry West of England Cloth, 8*s.* per yard cheaper than the foregoing,

Manufactured by Josiah Overbury.

The black cloth is made from the finer quality of wool, being the choicest Electoral fleece imported from Silesia. The mulberry is of a secondary quality, but the colour is perfect, being brilliant and even. The aim of the exhibitor has been to shew that the productions of this country sustain the reputation which has so long attached to them, and still exhibit those conditions of excellence which constitute their claim to superiority of position for sterling value in the markets of the world. The points constituting the claim for superiority are strength of texture and flexibility,—solidity of substance without harshness,—brilliancy and permanency of colour, and rich lustrous finish with short but thick nap, so evenly raised as to secure a surface broken only by a small ripple indicating the closeness of the pile produced by the dresser, and securing a retention of its beauty through a proportionably lengthened period of

its wear,—and also a "mellowness" when handled which tests the sterling value of the materials employed.

We would now direct attention to the following specimen of extra-fine black cloth, manufactured by Messrs. J. and D. Apperly, of Stroud, and exhibited by Messrs. Bull and Wilson, of St. Martin's Lane, London. The circumstances under which this specimen of woollen cloth has been produced will be found at page 56, vol. v. of THE JOURNAL OF DESIGN. In addition to the above, for which a gold medal, value 100 guineas, was awarded by the Exhibitors, there are specimens of blue cloth by Mr. Edwards, of Bradford, and extra-fine black doeskin by Mr. William Helme, of Stroud, for which silver and gold medals have been awarded by Messrs. Bull and Wilson. We learn that Messrs. Bull and Wilson are about to continue their efforts to improve the woollen trade of this country, by inviting competition on the part of foreign manufacturers. This firm exhibits, in addition to the above, some choice specimens of cloth for overcoats made from the wool of the cachmere shawl goat. Near to these specimens will be found fancy trouserings by Messrs. Stancombe, and fine black doeskins by Mr. Clarke, of Trowbridge; also some Venetian cloths and fancy trouserings by Mr. Sheppard, of Frome, and Messrs. East, Landon, and Holland.

Before passing to the next department, examination may be given to a specimen of flannel manufactured by John Bansford, an old Peninsular veteran of the 48th regiment and a manufacturing and operative handloom weaver. This specimen of extra superfine flannel measures 19 yards and weighs only 2 lbs 4 oz.; it is all wool, and is a fine specimen of manufacture. There are other specimens of fine flannel by known manufacturers, but they have silk warps.

The specimens received from the neighbourhood of Glasgow and Galashiels consist chiefly of plaids, shawls, tartans, tweeds, &c. The principal exhibitors in this department are Messrs. Dickson and Laing, who are extensive manufacturers of Scotch woollen goods, and in their display will be found samples of lambswool hosiery, tartan shaws, and tweed trouserings, all of excellent make. Of the latter we give a specimen:—

Tweed Trousering, Shepherds' Plaid,

Manufactured by Messrs. Dickson and Laing, of Glasgow and Hawick.

This specimen will give some idea of the progress which has been made in the woollen trade in the south of Scotland. Messrs. W. Gilmour and Co.

exhibit tweed trouserings and Saxony tartans. Messrs. Campbell and Co. exhibit some good specimens of square woven shawls, Scotch printed (texture all wool of British manufacture) and embroidered (Scotch work on a French silk-and-wool ground), of new design; they also exhibit a cachmere long shawl, as well as several shawls of French fabric, all wool on silk ground of British manufacture. Messrs. Laird and Thomson shew a set of clan patterns in Gala cloth. Messrs. Rainey, Knox, and Co. have contributed some handsome shawl dresses for *robes de chambre*, wool and cotton; they are 4½ yards long by 41 inches broad. Messrs. Swire and Co., T. and G. Clapperton, R. and G. Lees, and J. and W. Cochrane, also exhibit specimens of their tartans, tweeds, and plaids.

From the West Riding of Yorkshire and the districts adjoining, the contributors are very numerous; and some of the most interesting and beautiful specimens are those exhibited by Mr. Salt, of Bradford; they consist chiefly of alpacas, in which so gigantic a business has been suddenly created. We have selected the four following as shewing either very great beauty of texture or brilliancy of colour:—

Alpaca, No. 1,

Manufactured by T. Salt, of Bradford.

Alpaca, No. 2,

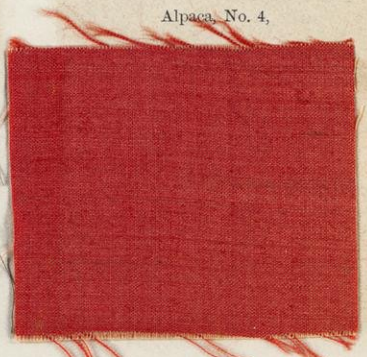
Manufactured by T. Salt, of Bradford.

The specimen No. 1 is manufactured with a silk warp dyed, the weft being made from the natural colour, grey. Specimen No. 2 has a silk warp and alpaca weft, and is piece dyed.

Alpaca, No. 3,

Manufactured by T. Salt, of Bradford.

Alpaca, No. 4,



Manufactured by T. Salt, of Bradford.

Specimen No. 3 is natural colour alpaca weft and black dyed cotton warp, it is also piece dyed; and specimen No. 4 is white cotton warp and white

alpaca weft, dyed in the piece. Mr. Salt does not confine himself to manufactures, but has shewn an interesting and instructive series of specimens of alpaca wools and yarns, the latter as fine as 200's, in all their various stages of manufacture. The wools have been obtained chiefly from the west coast of South America, but there are also specimens of British alpaca grown by the Earl of Derby.

The specimens exhibited by Messrs. Schwann, Kell, and Co., represent the staple manufacture of the district. Messrs. Hebblethwaite and Lister exhibit some good tweeds and other fabrics, which possess some points of novelty in their manufacture, but not having secured themselves by any patent we are unable to state their peculiarities. Messrs. W. and H. Crosland have exhibited specimens of their improved elastic woollen fancy pantaloon cloths; and Messrs. James Tolson and Sons, specimens of their treble-milled elastic woollen goods and fancy waistcoatings. Of mohair goods there are also many contributors. This is a class of manufacture which appears to be gaining much with the public. It was first introduced, about three years since, by Messrs. W. Smith and Son, of Leeds, who exhibit some of the best specimens made from the finest and silkiest of Syrian goat-hair. The chief objection to this fabric appears to be its thickness and consequent weight, and it is found impossible to obtain richness of effect in a thinner cloth. Messrs. Jas. Walker and Co., of Leeds, exhibit specimens made from the hair of the Angora goat of Turkey. Messrs. J. and T. C. Wrigley exhibit specimens of the same class of goods. Messrs. J. Walker and Co. also exhibit some good specimens of black single and double cassimeres and embossed cloths; the latter are peculiar and deserving of special attention. Messrs. B. Gott and Son, who, in the person of Mr. John Gott, was chosen to represent the woollen interest in the Commission, contribute some fine samples of woollen cloths made for the American, Russian, and China markets, which are also used for ladies' riding habits. The dyes and colours of these cloths are of a striking excellence. There are, near to the above, specimens of dyed lastings, manufactured by Mr. Green and exhibited by Mr. T. W. George, which also demand special attention. The fine cloths by Messrs. Walter Stead and Co., are also remarkable.

Before quitting the English portion of the exhibition of woollen goods, we would direct attention to the following specimens of British grown wool cloths, which have been manufactured by John James Fox and Co., of Devizes. The worsted manufactures of Devizes have of late years been in a declining state, and we are, therefore, glad to see that an effort has been made in that district to produce something for the Exhibition. The intention of the manufacturer in producing these specimens has been to shew, that, by making use of recent improvements in spinning the yarn, cloth of a good appearance and excellent

quality can be made from British wool, which has hitherto been considered too coarse, and consequently unfit for the purpose. The advantages which he considers likely to arise from the use of British grown wool are, that—1st, a benefit would be conferred on the agriculturist; 2dly, a more durable article would

be produced than that woven from foreign wool; and, 3dly, the price being moderate, it is brought within the reach of all classes. There are also in the Exhibition other specimens of cloths made from British wool grown in the county of Norfolk, and manufactured by Messrs. Allen and Banks. Hitherto these raw materials have been employed chiefly in the manufacture of coarse druggets, blankets, and for spinning purposes. The cloth produced by the last-named firm is, we believe, now appreciated, and extensively used by the neighbourhood.

On the woollen cloths exhibited in the foreign portion a few notes relative to some of the chief contributions must close this notice.

In "France" the chief contributions have been received from the firm of Paul Bacot and Sons. This firm is the largest in France and was established in the 17th century by Colbert, minister of Louis XIV. Since 1616 it has manufactured black cloth only, and for an entire century it has been carried on in the name and by the family of the present proprietor, and gold medals have been awarded for its productions at most of the French exhibitions. The specimens exhibited are of good quality, and consist of cloths, cassimeres, doeskins, eider-down cloths for riding habits, &c. The only article which this firm supplies to England is a black cassimere, which is used for vests, and is embroidered after it is imported: the same cloth is used in France for ladies' dresses. Berteche, Chesnon, and Co., also exhibit some good cloths, as does M. Paret some fine specimens of scarlet cloths.

The specimens from Belgium are of good quality and the nap is short, while the cloth itself is free from the crease referred to in a former article (vol. v. p. 11), and so objectionable in the French manufacture. Some of the best specimens are contributed by J. Simonis. The scarlet and green cloths from Austria are extremely well dyed. M. L. Biedermann and Co., of Vienna, contribute some of the finest specimens in this department, and the wool from which they are manufactured is said to be grown by the proprietors and is unboiled. L. Auspritz also exhibits some very good cassimeres.

J. W. Hermann, of Saxony, exhibits some very fine cloths. G. Thywissen, of Aix-la-Chapelle, exhibits some good trousering of moderate cost; and in "Prussia," C. Huffmann sends specimens of fine cloth finished for the American market.

We shall wait for the juries' report to see what the relative merits between the Foreign and British are considered to be by the judges.

THE FOUR PRIMARY SENSATIONS OF THE MIND: THE SUBLIME—THE BEAUTIFUL—THE LOW OR RIDICULOUS—AND THE PAINFUL.

A BRIEF ESSAY. BY JOHN BELL.

METAPHYSICS are a region in which, at some time of life, the mind that is active is pretty sure to try its pennons, and with good effect, if its trial result in the conviction of the narrow boundaries of its proper flight and vision. In no study may not some thought on the nature of our minds be useful. Rightly conducted, it will render us less presumptive and more practical. In fine art of all kinds, the discussion of the qualities we desire to produce, and those we wish to avoid, cannot but be beneficial.

Burke, Payne Knight, and others, have considered, in language abounding with imaginative ideas and felicity of expression, the nature of those qualities, "the sublime" and "the beautiful," which are so much to be desired in works of art. They have, however, treated them by themselves, and not in relation to other two qualities which appear necessary to a comprehensive system, viz., the antagonistic impressions, the "low or ridiculous" and "the painful." Their mode of considering the subject appears to have led to a want of true arrangement and clearness, as, under "the sublime" and under "the beautiful," have been classed many of those impressions which by no means consist alone of either of these, but which partake also in a degree of one or both of the other two qualities, which have been left without elucidation. Thus Burke calls terror "sublime." Truly it is a vivid impression that may possess more or

less of sublimity; but it should properly be classed under the opposite to the beautiful, "the painful:" as it cannot exist without mental or bodily pain, and may arise perhaps wholly without sublimity. In the instances, to which Burke alludes, of a storm, an earthquake, a fearful apparition, the "terror," of which he speaks, is a mixed sensation, combined of a painful dread, and a sense of the superiority and power of the object affecting us.

This being evident; in the room of discussing "the sublime" and "the beautiful" by themselves, as if they stood alone, and aloof among the sensations of the mind; we will attempt to consider them systematically, in a quadruple arrangement, in connexion with their opposites. The mental system thus arising being constituted of four primary sensations,—firstly, *the sublime;* secondly, *the beautiful;* thirdly, *the low or ridiculous,* the opposite to the sublime; and fourthly, *the painful or ugly,* in opposition to the beautiful or pleasing.

These qualities, thus considered simply, and also their varied intermixtures with each other, comprehend, I submit, all those sensations of which our nature is capable. And further than this: by considering them after this fashion, we shall arrive also at this conclusion, that it is very rarely that any one of the divisions, taken singly by itself, will express any actual sensation of our mind, or exist in it simply at any time, but rather that nearly all our sensations, even such as we have been apt to hold especially as single, will be found to be compounded of two or more of these qualities existing together.

As my desire is to be brief and only to recapitulate or illustrate sufficiently to make my meaning clear, I will proceed, without further preamble, to test the theory of the four qualities by considering them, first, simply by themselves, and afterwards, as far as space will allow, by touching on the various intermixtures and proportions by and in which they produce our current emotions.

The Sublime.

The pure and simple sublime, dissected from other impressions and traced to its cause, will be found to arise from our sense of the great superiority of the exciting cause to ourselves, or, more closely speaking perhaps, to the average of human nature. Thus vagueness, that defines no boundary but suggests immensity, enhances sublimity.

The Himalaya range, that separates Cachmere from Thibet, impresses us with "the sublime" from its superiority to the plains beneath, to the other mountains of the globe, and to ourselves especially, from its untrodden wastes. It is superior to the foot of man: its snows are virgin, and its peaks inaccessible. It is so superior to us that it is wrapped in mystery. That this stupendous range will always, from its vastness, remain to man a sublime object is not to be doubted; but should some adventurer succeed in exploring it, it would lose some of its present impression. This successful exploit would raise our idea of the adventurer at the expense of the mountains, which would sink in our estimation as respects the awful veil of mystery which now invests them; for one point of their superiority to our race would be gone for ever.

All that we feel to be above and beyond our comprehension impresses us with a portion of the sublime, and is in some sort awful to us. Superstition and the idea of unembodied spirits depend on vagueness for their effect on us. Superstition unveiled is ridiculous, and a familiar ghost would lose all its impression!

In some sort everything around us, as superior in its nature and arrangements to our comprehension, is sublime—ourselves among the rest! "We are fearfully and wonderfully made," says the Psalmist; and indeed in what a mystery are we at once entangled when we turn an inward eye on our minds and bodies; and when we consider the varieties and arrangement of structure and involuntary action that the present state of science points out to us; as the condition on which our continuance of mortal existence, even for a moment, depends!

Science, indeed, in all her walks, as the exponent of the marvellous system of which we form a part, gives constant rise to the feeling of sublimity. Let us seek her guidance; and following her for a few steps in the path of astronomic discovery, dwell for a brief space on a portion of the prospect she lays before us.

The globe we inhabit, which seems to us so firm and still, and on which we build to last for ages, revolves on its own axis in twenty-four hours, and is at the same time flying round the sun at the rate of nearly six hundred millions of miles in the year. Thus at Christmas the earth, with Europe, Asia, Africa, and America, its mighty oceans,—with all we know intimately of existence, with all the undiscovered mass beneath us, of which we know nothing,—is one hundred and ninety millions of miles, in a direct line, from where it was at midsummer!

At once from this step science leads us to another. This vast distance produces, as measured by our most accurate instruments, hardly a second of parallax, or apparent relative change among any of the stars that we discern scattered at various and remote distances through the vast space—"the deep, indeed, above, below, around"—in which they dwell. The distance, at which they must be in consequence of our enormous change of situation taking little or no cognizance of any relative change of place among them, is said to be such, that light, which travels to us from the sun in little more than eight minutes, must have been years in coming to us from the nearest fixed star: and as regards the more remote ones, that the rays that reach our vision on a clear night, and by which we are cognizant of their existence, probably departed from the bodies that produce them hundreds or thousands of years ago.

We thus, guided by science, creep up to an eminence from which it makes us dizzy to look round; but further yet would scientific speculation lead us, and not wildly, for infinity exists and vastness is relative. It suggests, on scientific grounds, that the whole immense tract of stars of which our solar system forms so small a part, and which we see either distinctly by themselves, or confusedly in nebulæ, and the milky way, is all in a drifting, circular, or revolving motion, round a common centre! "Wheels within wheels," says Ezekiel, "and as for their rings, they were so high they were dreadful."

What can transcend in sublimity the prospect thus laid open to our view? except the contemplation of the Supreme Maker of all this, and of all the immeasurable space and existences beyond, of which we cannot even dream—the Creator, the Preserver!

The above contemplations have led us to the consideration of subjects that are so superior to ourselves, that our nature is not large enough to contain and comprehend them; but the same quality of great superiority impresses us, though in less degree, with feelings of the "sublime" when arising from subjects and objects more within our grasp and ken, as gigantic human enterprise, resolution, and perseverance, the compositions of Shakspere, Milton, and other great poets, and the works of Phidias and Michael Angelo. Similar impressions arise from a class of sounds: such as the roaring of the surge on a long line of shore, the wind rustling through a grove of lofty pines, thunder reverberating among mountains, the deep tones of a cathedral organ, and the choruses of Handel, Haydn, and Beethoven.

To recapitulate: the pure "sublime" I hold to arise from the superiority of the subject or object producing it, and that the more the exciting cause is superior, the more we feel its impress; and thus; when the impression arises, as it were, from the shadow of something beyond our ken, its very incomprehensibility increases its force and awful power over our senses. Thus when we attempt to contemplate the attributes of the Supreme Being, which is one of our duties to do as far as in us lies, whether led to do so by the voice of Nature or the sublime words of Holy Writ,—although we can hardly here separate sublimity from beauty, or the awe of supreme majesty from gratitude for infinite beneficence, yet there are times when we may be wholly absorbed by the more awful phase of Almighty power, and by the contemplation of the

most sublime and inexpressible nature of Divine existence. In this trembling and abashed recognition exists the purest sublime of which our soul is capable; and it was in harmony with this feeling, that the earliest mode of expressing the name of the Supreme consisted in no precise word whatever, but in a low, half-hushed expiration of the breath through the half-closed lips.

(*To be continued.*)

"SHALL WE KEEP THE CRYSTAL PALACE AND HAVE RIDING AND WALKING IN ALL WEATHERS AMONG FLOWERS—FOUNTAINS—AND SCULPTURE? BY DENARIUS."

UNDER this title a pamphlet has just been published by Mr. Murray, which will have a great interest for all those who have taken part in founding the Exhibition. Its appearance is very appropriate, and all who are convinced by its reasoning and desire to perpetuate the building should be at once up and stirring with his individual aid:—

"There is now no doubt that the public support of the Exhibition will be such as to secure to them the possession of the building, and the use of it for other purposes if they desire to have it. After paying all expenses of the Exhibition, the prizes, and the hire of the building, it may be reasonably estimated that there will be a surplus of about 140,000*l.* at the close of the Exhibition. The evidence of this is appended.*

All subscriptions made in originating the Exhibition were received by the Commissioners as 'absolute and definite,' and therefore it is not necessary to discuss whether or not the subscriptions should be repaid out of any surplus.

The Commissioners of the Exhibition have engaged that any surplus shall be 'applied to purposes strictly in connexion with the ends of the Exhibition, or for the establishment of similar exhibitions for the future;' but they have also engaged, in the most solemn way, to remove the building which has served the purposes of the Exhibition so admirably on this occasion, and likely to do so on future occasions if it were permitted to remain.

The chief difficulty in establishing the present Exhibition was to provide a building. This at the outset involved the risk of finding the necessary funds, the choice of a site, the selection of a suitable plan, and the construction of a building consistent with the character of the locality. All these difficulties have been successfully overcome, and the victory has secured advantages which, costing at least 120,000*l.*, are of the first importance for the establishment of future exhibitions, but which would be thrown away in great measure if the building itself be removed.

The preservation of these advantages affords the greatest security for the establishment of 'similar exhibitions for the future,' at the same time fulfilling the objects of the Commission, but the performance of their pledge to remove the building stands in the way.

It is true that this pledge was given, and a deed of covenant made between the Treasury and the Commissioners, for the removal of the building before the building itself was erected or its plan known, and when it was conceived that the maintenance of a brick building was inconsistent with the public interests in Hyde Park; and the compact to remove the building, whatever it might be, was the result of an understanding with the House of Commons, when a majority of 166 to 47 affirmed the expediency of using the present site for the purpose of the Exhibition. This vote of the House of Commons fairly represented public opinion on the subject in July 1850; but having experience of the present building, and viewing the singularly unanimous approval of it, its obvious adaptation to other public wants when the Exhibition itself

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* The financial prospects are these:—

Subscriptions paid	£65,000	0	0	Building	£79,800	0	0
By Catalogue Contract	3,200	0	0	Extra Galleries—Counters, &c.	55,000	0	0
By Refreshment Contract	5,500	0	0	Management to May	25,000	0	0
By Season Tickets and Entrance at the Doors to 19th June	162,887	16	0	Prize Fund	20,000	0	0
Estimated further Receipts at the Doors	130,000	0	0	Management, &c., till Exhibition is closed	30,000	0	0
				Police, say at most	12,000	0	0
	£366,587	16	0		£221,800	0	0

shall have closed, its positive adornment of Hyde Park, and its suggestiveness of new and improved modes of construction, it may be doubtful whether the public would now vote for the removal of it;—at least, it will be admitted that the new and unexpectedly altered circumstances of the whole question demand that an opportunity should be afforded to consider whether the doom passed upon an unpopular prospective brick building shall be carried out upon a popular glass palace.

Should it, then, be the public wish to keep the Crystal Palace and cancel the agreement which they made to remove it, they must make their wishes known most emphatically before the close of the present session of Parliament. No time is to be lost, because as matters now stand the doom of the building is fixed, and ministers are bound to see it carried into effect: unless some steps are taken forthwith, the Crystal Palace may disappear from Hyde Park before the meeting of the next session of Parliament. The Chief Commissioner of Woods holds the warrant, and when we remember the firmness with which he exacted, as a public guardian, the scrupulous observance of every form connected with the use of the site, no hopes can be entertained that he will not insist upon the immediate and speedy execution of the sentence of removal.

Without regard to the obvious public wants to which the building might be made to administer after the close of the Exhibition, its maintenance for a time, at least, as a monument of the success of the Exhibition would seem to deserve consideration. The most novel and interesting feature of the whole Exhibition has certainly been the building itself, which has surpassed all the high-wrought expectations of every visitor. It is the most surprising of all the manufactures exhibited; for a manufacture it has been accurately called by Mr. Babbage, with its thousands of self-same columns and girders, its miles of sash-bars, and its acres of glass. These have attractions independently of the great purpose for which they were put together. When the millions have paid their shillings to see the building filled with its present treasures, other millions would certainly pay their pence to enjoy the unrivalled space, even unfilled, which it affords. This, however, is only an argument against the hasty demolition of the edifice, in case no other grounds could be shewn for retaining it.

What these grounds are we may now proceed to consider. It is not necessary to reckon among them its proved fitness for any future Exhibition, because there is a public purpose much nearer at hand, which is certainly a great public want. That want is a covered area, where, in this most variable climate, sheltered from its vicissitudes of wet and cold, the public at large, and especially the invalid and weaker portion, might be free to enjoy air and exercise. The Crystal Palace has shewn us how a space large enough for a city may be covered in, and how walks might be enjoyed, not between dark walls and under roofs by which the light of heaven is excluded, but where we have all the charms of out-of-doors without its drawbacks. Twenty acres of grass-plat under cover is a novel and substantial advantage; and though you should clear this transparent cover away from Hyde Park, it is not too much to predict that the example of it set and rejected by London will be followed throughout the country by every large town which has a keener sense of its obvious and practical utility. There is hardly any promenade or rendezvous in London like that afforded by the Prado at Madrid, or the public walks in Vienna and Dresden, because the climate forbids them. But the Crystal Palace will make us independent of climate, and English people may have a source of enjoyment from it that has not been hitherto revealed to them. Merely as a covering to a grass-plat giving a public rendezvous, which would afford a solace to the old and sick, and a useful, purposelike gratification to the young, the Crystal Palace has claims to be preserved. But we may go further and find a wider use for the space. Let us imagine the glass house made a garden and warmed with a summer temperature all the winter. It would seem to be a public want as soon as the idea presents itself. When a man has a house and grounds, one of his first thoughts is to secure the beauty and pleasure of vegetation all the year round. It would be strange that London should never have provided itself with a conservatory or winter

garden, if we did not see that the Excise-duty on glass had been the preventive. Having now got a structure through the Exhibition, we find that the same structure may have a second and scarcely less valuable use. We may conceive the building properly supplied with fountains and sculpture, arranged between groves of orange-trees and pathways laid between plantations more or less characteristic of the vegetation of different climates,—being, in fact, a most enjoyable and instructive promenade. With the co-operation of the Agricultural, Horticultural, and Botanical Societies, various popular schools, lectures, and exhibitions connected with the objects of these Societies, would arise naturally out of such an arrangement, and might be made to have a most important bearing both on the productive resources of the country and on our decorative manufactures.

The decoration of the building might be made very conducive to the promotion of Sculpture, at present an art almost purposeless in this country. The garden might be most appropriately connected with an annual exhibition of sculpture, for which subjects might be chosen out of the remarkable events of each year and as memorials of the departed great. The best of these works might be purchased annually to embellish the building itself, and it might be permitted to the artists to furnish casts of them to decorate the town-halls, &c. in the country. A beginning in this direction might be made by the purchase of a few of the best works now exhibited, and as better works were collected in course of time, selections might be presented to local institutions. Sculpture might thus be made an art yielding real enjoyment and pleasure to the great mass of the people, who at present have little sympathy with it because it is not *used*.

If the place were recognised as a receptacle for plants and shrubs, it might be expected that in a very short time it would be well furnished with public donations. Proceeding with the developement of this idea more in detail, it may be pointed out that the nave and the aisles forty-eight feet high would give a space of ten acres independently of the galleries, which would give in addition walks exceeding a mile. The ground-floor might be used for plantations and sculpture, the galleries for potted flowers and smaller works of statuary; but care should be taken to consider the promenade as the chief feature, and not to occupy too much space with the collections. The public would desire to have walks among flowers and plants, not flowers and plants with some walks. This last kind of treatment belongs to Kew and Chiswick and the Regent's Park. Spaces at the extreme sides of the building might be kept vacant to be applied to various public purposes, such as periodical exhibitions of agricultural produce, colonial raw produce, machinery, perhaps models of objects claiming patent rights, manufactures and fine arts. These should not be permanent exhibitions to become stale and provoke comparisons with the present Great Exhibition, but essentially temporary exhibitions for short periods, answering to the wants and circumstances of the times as they may arise. As agriculture and horticulture have made such great progress since periodical exhibitions of them were established, we may infer that analogous exhibitions would promote silk-weaving or cotton-printing, &c. and will be likely to arise. The great City Corporations, the Goldsmiths', the Ironmongers', the Mercers', the Dyers', &c. might again ally themselves with the practical developement of the manufactures from which they take their names.

In throwing out these suggestions as supplementary to the great object of a Winter Garden, it would be premature at the present time to define them very precisely, and they should not be viewed as leading to the perpetuation of a reduced edition of the present Exhibition. On the contrary, the Exhibition should close at an appointed day, after a sufficient announcement. The closing should be like a doom, whatever may be the popularity or demand for an extension of time. Good management will cause the Exhibition to end in the height of its popularity and before it becomes stale. Afterwards let the building open again under a totally different aspect.

The first condition in carrying out these views is, that the great principle of the Exhibition itself shall be applied to any future uses to be made of the building, namely, the self-supporting and self-managing principle. The suc-

cess of the Exhibition itself is mainly due to the adoption of this feature; and no one can doubt that the Exhibition would have been far less popular and far less successful if it had been carried out by the Government instead of the public themselves. The best chance of the building being made fully to answer public wants, and its management progressing with the growth of public intelligence, is to adopt as a principle of action independence of the Government, subject only to its control as the guardian of Hyde Park. Every one is able to foresee what the consequences to the Zoological Society in the Regent's Park would be if the Government should undertake the management of the animals. In fact, the Zoological Gardens have beaten the Royal Menagerie at the Tower altogether out of the field. The management of the Crystal Palace might be confided either to a special corporation created for the purpose, or perhaps to His Royal Highness Prince Albert, as President of the Society of Arts, in connexion with with some *ex-officio* members of it. Recollecting how very instrumental that Society was in organising the beginning of the Exhibition, and how readily the members resigned all prospective advantages in its success, it would seem that they have an equitable claim for some consideration in any of the future arrangements.

The building must, therefore, be made self-supporting on the broadest basis. If the public resigned the management of it to the Government, and the Government undertook to pay the cost of its maintenance out of the taxes, so as to provide a free admission, the certain decline of the whole institution at no distant period may be predicted. The very motive for fresh and continued exertion to gratify the public would at once be taken away if the building were pensioned on the Consolidated Fund. Besides, the people in the country would thus be made supporters of an institution of which the London public would derive the chief advantage.

On the contrary, let those pay for the use of the glass roof who use it; but fix the payment as low as possible during the greater portion of the year, adopting a somewhat higher charge at some times to obtain revenue. Thus the Garden and Sculpture portion of the building might be open to the public for the four first days of every week on payment only of 1*d.* each person; on the Fridays the payment might be 6*d.*; and on Saturdays, 6*d.* Perhaps horsemen might be admitted at a higher charge, say 1*s.* It may be estimated that for all other purposes of revenue, as well as of additional public convenience, it would suffice to reserve about twenty days in the year, when a higher payment would be made. On these occasions the Garden might be turned to a more extended use by holding agricultural, floral, horticultural, and perhaps other fêtes in it.

The revenue which might be expected from these sources has been estimated to be about 14,000*l.*, and the details are given below.*

* ESTIMATE OF THE ANNUAL REVENUE TO BE DERIVED FROM THE USE OF THE BUILDING.

Admission to the Gardens and Conservatories:—

			£	s.	d.
PEDESTRIANS—1*d.* per day, non-subscribers 3000 average, four first days of the week	192 days × 3000	d. 576,000			
Fridays, at 6*d.*	50 days × 2000	600,000			
Saturdays, at 6*d.*	50 days × 3000	900,000			
		2,076,000 =	8650	0	0
Yearly subscribers, at 5*s.* each	5000		1250	0	0
EQUESTRIANS, 1*s.* per day, five first days, average	242 days × 30 persons		363	0	0
2*s.* 6*d.* on Saturdays,	50 Saturdays × 50 persons		312	10	0
yearly subscribers, at 1*l.* each	250 persons		250	0	0
BATH CHAIRS, 4*d.* per day	242 days × 30 persons		121	0	0
1*s.* Saturdays	50 days × 30 persons		75	0	0
Receipts from 21 special reserved days			2500	0	0
Receipts from use of reserved portions of the building			1000	0	0
			£14,521	10	0

Estimate of Cost of the Management.

Maintenance of the Building, say	5500	0	0
Heating and wages of firemen	2000	0	0
Annual Purchase of works of Sculpture (*as a beginning, to increase with success*)	1500	0	0
Annual Purchase of Plants	500	0	0
Management, Officers, Money-takers, Gardening Wages, Printing, &c.	4750	0	0
	£14,250	0	0

If the question be raised whether the public at large could be considered as injured by the payment of a penny for the use of a beautiful garden under a glass roof, the public will, no doubt, consider whether the grass-plat on which the building stands would be used by the greatest numbers with or without its glass covering, and whether a penny is too much for the luxury. Is this strip of grass by the side of Rotten Row, *plus* shelter, warmth, flowers, fountains, and art, worth a penny? The cases of the exclusion of the public at large from certain portions in the Regent's Park, in order to encourage zoology and botany (for which a smaller portion of the public are willing to pay from sixpence upwards), are precisely analogous; and certainly no one is aggrieved by the Zoological and Botanical Societies having plots of grass there; on the contrary, every one is more or less benefited.

It has been suggested that the glass house should be removed to Kew; but the answer to this proposition is, first, that Kew is already well furnished with conservatories; and, secondly, that if the glass house would be good at Kew, it could not be less good in Hyde Park, but all the better for being six miles nearer to London and those who would chiefly use it.

It rests wholly with the public to decide all these questions. If they resolve to enjoy the finest Winter Garden and Sculpture Gallery in the world, they must constitutionally instruct their representatives to say 'aye' when Mr. Speaker puts the question in the House of Commons; and *that*, as we have warned them, they must do forthwith."

GELATINE MOULDS.

NOTWITHSTANDING the art of casting is one of the most extensively known and used by manufacturers, which affords great facilities in multiplying given patterns, in the reproduction both of mechanical, architectural, and artistic specimens, it is not until late years that the processes of casting have been simplified

and its uses greatly extended. Formerly little more was done by it than to reproduce flat surfaces,—or if surfaces in relief were attempted, the mould in which the cast was made was necessarily divided into many parts, involving great labour in putting it together, whilst a large number of seams were produced upon

the surface of the cast, which it was necessary to remove by hard labour. Manufacturers in Birmingham know how often their workmen have been occupied whole days and nights in putting together a small mould. These difficulties, and the inapplicability of sand-clay or plaster to form a mould from other than rigid bodies, have led to a variety of experiments, and about the beginning of the present century the Germans introduced the use of glue, which was not, however, taken notice of in England till about the year 1826, when Mr. Douglas Fox employed it to take casts from anatomical preparations, calcareous concretions, vegetable substances, &c. Previously it had been customary to use wax or soft clay; but in many instances the moulds so obtained could not be removed owing to the underlap; it therefore became necessary, in order that the mould might be removed, to fill up all those parts which gave sharpness and clearness to the design. To overcome this difficulty, and to enable objects in relief to be cast, he made use of glue; and with a view to giving greater elasticity to the moulds so obtained, and also to enable them to be kept in a fit

state for use during a longer period than they otherwise could be, Mr. Fox mixed treacle with the glue; but the objection to this body immediately became apparent, as it discoloured the surface of all white bodies, and was thus limited in its application, as none but plaster or wax casts could be taken from them: it accordingly fell into disuse. About the year 1844 attention was again called to this subject by the production, in France, of a series of casts in imitation of ivory; and about 1846 the Society of Arts, in England, offered a prize, which was awarded to Mr. Franchi, for his specimens of casting in plaster composition in imitation of ivory. At the time the award was made the nature of the material employed by him in forming his moulds was not known; but it has since proved to be pure gelatine: and owing to the skilful manner in which he has applied his material some very exquisite electrotype casts, which are deposited in the Geological Museum, have been obtained from objects greatly undercut, and great advantage has since resulted from the use of this material. Mr. Franchi has since found by experiment, that he can obtain from a gelatine mould a cast in gelatine in relief, without losing any

of the sharpness of the original. This has enabled him to apply objects modelled on flat surfaces to cylindrical bodies, thus saving the labour and expense of remodelling.

In illustration of the use of this mode of casting, we may call attention to a series of statuettes of the monarchs of England, which Mr. Franchi is about to publish by subscription: engravings of four of these are inserted. It is intended that the series shall extend from William I. to the present reign. The original models were executed by Mr. Charles Grant, and the casts will be taken from gelatine moulds by Mr. Franchi, in plaster composition in imitation of ivory, and, being without seams, will be as perfect as the original models themselves. When complete they will form an interesting and instructive series, useful to artists and manufacturers as a ready reference to the costume of the period. The models are carefully executed and the details well studied and brought out.

THE JURIES OF THE EXHIBITION.

ALL proceedings connected with the juries are now regarded with great interest. In accordance with the decisions of the Commissioners, the Council of Chairmen have agreed upon certain instructions to be issued as a guide to the jurors. They thought it advisable to leave much to the discretion and gradual experience of each jury; but as upon various points the decisions of the Royal Commissioners are very precise, they have considered it desirable that the practice should be uniform. They have decided that the first duty in each case should be to elect a Deputy-Chairman, to assist the Chairman and fill his place in the jury, or at the Council, in his absence. Every jury has also appointed one of its members to draw up a report upon the class of subjects submitted to it; the reports will be drawn up with the care necessary to describe the state of industry of all nations, as shewn in the Exhibition, and in such a manner as will best form a permanent record of the Exhibition itself.

Upon various other matters of detail, the following resolutions have been agreed to:—

"Sub-Committees.—The Royal Commissioners have given their sanction to juries acting in matters of detail by sub-committees. How far it may be convenient in each case to adopt this system, and to depute to a sub-committee, or to individual members, the investigation of particular objects, is left to the judgment of each jury, but it must be borne in mind that no award can be made but by a majority of the jury.

"Evidence and Associates.—When a jury may wish to call in the aid of persons of technical knowledge to aid their judgment, they may do so in conformity with the 29th Article of the General Decisions.

"Jurors of another class, when knowledge of that class is required to guide the jury, may be called in if a majority of the jury should decide to do so.

"In both the above cases, however, the persons to be consulted do not possess votes, and only remain associated with the jury as long as the special occasion for which they were called requires their presence.

"Juries to carry on their Investigations without delay.—The juries are expected to carry on their investigations with as little intermission, and to come to their decision with as little delay, as possible.

"Mode of making Awards.—When a jury has decided upon its awards, those awards will be submitted to a meeting of all the juries of the same group for confirmation, and for the investigation of any decision that may be disputed.

"The awards will then be submitted to the Council of Chairmen, to secure uniformity of action and a compliance with the rules now laid down, or which may hereafter be sanctioned by the Council.

"The awards will become final as soon as the Council of Chairmen shall have reported that they are in conformity to those rules.

"Secresy.—All the considerations, discussions, and decisions of each jury and of the Council of Chairmen, are to be considered as strictly confidential, and on no account to be divulged until the award has become final.

"Medals to be awarded without reference to Nationality.—The medals will be awarded for excellence only, without reference to countries, the Exhibition being considered as a whole, and not as consisting of the products of different nations.

"Individual Competition to be avoided.—In making the awards, the juries will bear in mind that the Royal Commissioners desire that the different medals should indicate different kinds of merit, and not degrees in the same kind of merit.

"Two Medals only to be awarded.—The juries will only have to award the medium size and large medal. The small medal will not be given by the juries, the Commission having withdrawn it as a prize medal, at the request of the Council of Chairmen.

"Conditions for the Award of the Medals.—The medium size (or, as it is proposed to be called, the 'prize medal,') will be awarded by the juries in conformity with the decisions laid down in the paper issued by the Royal Commissioners, with the general indications contained in these directions.

"The great medal can be finally awarded only by the Council of Chairmen, upon recommendations made to that body by the allied juries referred to in decision 9.

"Each jury must obtain the sanction of its own group of juries to its recommendation of the great medal, before the Council of Chairmen can take the award into consideration. The grounds on which this recommendation is made must be fully stated. The great medal will only be given for very pre-eminent and indisputable merit. It is impossible, until the juries have acquired a knowledge of the articles exhibited, to define the proportion of the great to the prize medal; but the Council of Chairmen have to announce their intention of making the proportion a very small one."

The Chairmen have also had under their consideration the various conditions which it will be advisable to adopt in the award of prizes in the various classes into which the Exhibition is divided. They do not intend that these conditions should be compulsory on the juries, as it is probable that they may require modification in particular cases, but they may be useful as indications, to shew the general grounds on which awards may be made.

GROUP A.

Medals are to be awarded for novelty in the mode of obtaining, applying, and adapting raw materials and produce—skill and excellence in known modes of obtaining, applying, or adapting them—comparative excellence in the quality obtained, combined with utility. The value of the instructiveness of any series exhibited.

GROUP B.

The sub-committee of the chairmen of this group, for certain reasons set forth in their report, strongly urge that, if novelty of invention (as far as regards machinery) be not altogether excluded, the greatest caution should be used, and the most jealous scrutiny employed, by jurors before any prize whatever be awarded under such claims for merit.

CLASS V.—MACHINES FOR DIRECT USE.

Fitness of the work for the object sought to be obtained (which combines almost every merit of machinery), economy in first cost, durability, economy of maintenance, excellency of workmanship.

CLASS V. A.—CARRIAGES.

Successful application of any new material, with elegance of design and excellence of workmanship, strength and lightness, reasonable cheapness.

Note.—These qualities will apply almost exclusively to carriages of luxury.

FOR THE PUBLIC SERVICE.

Lightness, sufficient solidity for safety, durability, and cheapness.

CLASS VI.—MANUFACTURING MACHINES AND TOOLS.

Fitness of the machinery for the objects sought, economy in the first cost, durability, and excellence of workmanship; economy in production, and perfection in articles manufactured; saving in time, and quantity produced; economy of maintenance.

CLASS VII.—CIVIL ENGINEERING, ARCHITECTURAL AND BUILDING CONTRIVANCES.

Science and skill in design to obtain the object sought with the greatest economy; fitness in the application of materials; success in the work in which the model or drawing is exhibited; perfection of workmanship in the model or drawing exhibited.

CLASS VIII.—NAVAL ARCHITECTURE, AND MILITARY ENGINEERING, ORDNANCE, ARMOUR, AND ACCOUTREMENTS.

Merits of combination in the models or drawings relating to military or naval engineering; advantages obtained by experiments in carrying out the means proposed either by models or drawings. Improvements in arms, apparatus, or any articles belonging to military and naval service or architecture, to rigging or other branches

of seamanship, to accoutrements or equipments of troops, their fitness and efficacy; economy in production.

CLASS IX.

In this class actual trial has been found generally necessary for the safe award of prizes; field instruments being tried on the land, and yard implements being also set to work, and the results exhibited in numerical tables.

CLASS X.—PHILOSOPHICAL INSTRUMENTS.

Novelty of invention, or novelty in the whole or part of the instruments; ingenuity of construction; new application of old principles; application of new principles; improved beauty of form; increased durability, and more extensive application.

CLASS X. A.—MUSICAL INSTRUMENTS.

Novelty of invention, novel application of old inventions, improvement of mechanical action. Tone, perfection of workmanship, beauty of design, combined with general excellence; increased facility of action; cheapness combined with durability.

CLASS X. B.—HOROLOGY.

Ascertained or probable accuracy and certainty of performance, whether time-keeping, discharging of striking parts, or registering; stability, strength and durability, simplicity and economy of construction, goodness of execution. High finish to be considered subordinate to the scientific objects.

CLASS X. C.—SURGICAL INSTRUMENTS.

For instruments which possess novelty of a useful character and giving evidence of originality and inventive power, ingenuity in the application, extension, or modification of principles already known, or for new combinations, mechanical skill, including cheapness, finish, and other qualities of mechanical execution.

GROUP C.—MANUFACTURES. TEXTILE FABRICS.

In this, those articles will be rewarded which fulfil in the highest degree the conditions specified in the sectional list, namely, increased usefulness, such as permanency in dyes, improved forms and arrangements in articles of utility, &c.; superior quality, or superior skill in workmanship; new use of known materials; use of new materials; new combinations of materials; beauty of design in form or colour, or both, with reference to utility; cheapness relatively to excellence of production.

GROUP D.—METALLIC, VITREOUS, AND CERAMIC MANUFACTURES.

Important inventions and discoveries, or regularity combined with excellence of design; novel application of known discoveries; great utility combined with economy and beauty; excellence of workmanship and quality.

GROUP E.—MISCELLANEOUS.

Novelty of material in application; excellence of design, material, and workmanship; cheapness.

GROUP F.—FINE ARTS.

Originality and excellence of design, and importance of the work, combined with great merit of execution; merit in execution, combined with application to useful purposes.

The reports of the several jurors are now preparing, and will be published officially, without notes or comments, by the contractors for the Catalogue. The important duty of drawing up the reports has been confided by the respective juries to the following members of each:—

Class I. Mining, Quarrying, Metallurgical Operations, and Mineral Products:—Dufrenoy, France, Inspector-General of Mines, &c.

Class II. Chemical and Pharmaceutical Processes and Products generally:—Thomas Graham, F.R.S., Professor of Chemistry, University College.

Class III. Substances used as Food:—Joseph D. Hooker, M.D., R.N., F.R.S., Royal Gardens, Kew, Botanist.

Class IV. Vegetable and Animal Substances chiefly used in Manufactures, as Implements, or for Ornament:—Payen, France, Member of the Institute.

Class V. Machines for direct use, including Carriages and Railway and Naval Mechanism:—Rev. Henry Moseley, M.A., F.R.S., Inspector of Schools, and formerly Professor of Mechanics at King's College.

Class V*a*. Sub-Jury for Carriages:—J. Holland, Coach Builder.

Class VI. Manufacturing Machines and Tools:—General Poncelet, France,

Member of Institute, late Director of Polytechnic School, &c.; Professor R. WILLIS, F.R.S., Professor of Natural and Experimental Philosophy at Cambridge.

Class VII. Civil Engineering, Architectural and Building Contrivances:—I. K. BRUNEL, F.R.S.

Class VIII. Naval Architecture and Military Engineering; Ordnance, Armour, and Accoutrements:—Baron DUPIN, France, Member of Institute and President of Central Jury, &c.

Class IX. Agricultural and Horticultural Machines and Implements:—P. PUSEY, M.P., F.R.S.

Class X. Philosophical Instruments and processes depending upon their use; Musical, Horological, and Surgical Instruments:—Sir DAVID BREWSTER, F.R.S., Principal of the University, St. Andrew's.

Sub-Jury A. for Musical Instruments:—Sir H. R. BISHOP, Professor of Music at Oxford.

B. Sub-Committee and Associate Jurors for Horology:—E. B. DENISON.

Sub-Jury C. for Surgical Instruments:—J. H. GREEN, F.R.S.

Class XI. Cotton:—THOMAS ASHTON, Cotton Spinner.

Class XII. Woollen and Worsted:—SAMUEL ADDINGTON, Woollen Merchant.

Class XIII. Silk and Velvet:—THOMAS WINKWORTH, formerly Silk Manufacturer.

Class XIV. Manufactures from Flax and Hemp:—WILLIAM CHARLEY, Belfast, Bleacher; GRENIER LEFEVRE, Belgium, Member of Senate, President of Chamber of Commerce, Gand.

Class XV. Mixed Fabrics, including Shawls, but exclusive of Worsted Goods (Class XII.):—WILLIAM PRINSEP.

Class XVI. Leather, including Saddlery and Harness, Skins, Fur, Feathers, and Hair:—J. A. NICHOLAY, Furrier.

Class XVII. Paper and Stationery, Printing and Bookbinding:—C. WHITTINGHAM, Chiswick, Printer.

Class XVIII. Woven, Spun, Felted, and Laid Fabrics, when shewn as specimens of Printing or Dyeing:—EDMUND POTTER, Manchester, Calico Printer.

Class XIX. Tapestry, including Carpets and Floor-cloths, Lace and Embroidery, Fancy and Industrial Works:—RICHARD BIRKIN, Nottingham, Lace Manufacturer.

Class XX. Articles of Clothing for immediate, personal, or domestic use:—T. CHRISTY, Beaver and Silk Hat Manufacturer.

Class XXI. Cutlery and Edge Tools:—Lord WHARNCLIFFE.

Class XXII. Iron and General Hardware:—W. DYCE, R.A.

Class XXIII. Working in Precious Metals, and in their imitation, Jewellery, and all articles of Vertu and Luxury, not included in the other Classes:—Duc de LUYNES, France, Member of Institute, &c.

Class XXIV. Glass:—Lord DE MAULEY, F.R.S.

Class XXV. Ceramic Manufacture, China, Porcelain, Earthenware, &c.:—Duke of ARGYLL.

Class XXVI. Decoration Furniture and Upholstery, including Paper Hangings, Papier Mâché, and Japanned Goods:—Professor ROESNER, Austria, President of the Imperial Academy of Fine Arts.

Class XXVII. Manufactures in Mineral Substances, used for Building or Decoration, as in Marble, Slate, Porphyries, Cements, Artificial Stones, &c.:—Professor ANSTED, F.R.S., Professor of Geology, King's College.

Class XXVIII. Manufactures from Animal and Vegetable Substances, not being Woven and Felted, or included in other Sections:—Dr. E. LANKESTER, F.R.S., Secretary to the Ray Society.

Class XXIX. Miscellaneous Manufactures and Small Wares:—WARREN DE LA RUE, F.R.S., F.C.S., Professor of Chemistry.

Class XXX. Sculptures, Models, and Plastic Art:—A. PANIZZI, Tuscany, Keeper of the Printed Books at the British Museum.

We believe that the general result will be, that *very few indeed* of the first medals will be awarded, whilst the juries will be liberal in bestowing the second medal, and it is rumoured that a third medal may probably be awarded simply as an exhibitor's medal almost to every exhibitor.

COMING REFORM OF THE PATENT LAW.

THE committee of the House of Lords has been active during the last month taking evidence from all kinds of witnesses, foreign and native, among whom we are glad to say patent agents and lawyers have certainly not predominated; but we are sorry to hear that the proposed reforms are threatened still to be clogged with the leaven of their influence, unless the public protest against it, as we have no doubt they will do. It is generally understood that it is proposed to retain the Attorney-General as a tribunal to investigate claims for inventive rights before they are admitted. The uselessness of this, the delay, the cost, and the litigation it provokes, have been demonstrated *usque ad nauseam*. Such an investigation can never be satisfactory to the public, unless they are prepared to establish and bow down to a pope in patents, against whose verdict there shall be no appeal. If it is anything else, and we well know that it must be, it is a mere farce,—the source of fraud and expense. Public opinion and public use alone can determine the real value of claims for patents, and it is a first principle in any reform that they should be left free to do so; in fact, every reform which does not begin at this point ought to be absolutely rejected. The cause of this threatened mischief is said to arise simply from a dread to meddle with the Attorney-General's fees, which Lord John Russell publicly pledged himself, in the House of Commons, should not be permitted to stand in the way of any patent law-reform.

PRINTED FABRICS EXHIBITED AT THE EXHIBITION OF 1851.

IN our last number (p. 104) we were enabled to lay before our readers some examples of the workmanship exhibited by Messrs. Gros Odier and Co., of Wesserling; and now we present them with some results exhibited by their competitors, Messrs. Dollfus, Meig, and Co., of Mulhausen. These two are the principal firms which represent the printing of piece goods from the Rhenish provinces of France. The several specimens we insert have all a lively and neat character, the cambric especially so; indeed it is one of the prettiest of this class of fabrics which the present season has produced. The tender trails are artistically distributed, and throughout the surface there is that general equality of colour and quantity which is essential to excellence in this species of ornamentation. The organdis, with the ultramarine flower, is admirable for its colour and the effectiveness of its design. The balzarine is brilliant, and so is the mousseline de laine. Messrs. Dollfus and Meig's show is a capital one.

Organdis or Plumetis, by Messrs. Dollfus, Meig, and Co. (of Mulhausen.)

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

MUSLIN,

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

And exhibited by them in the Class of FRENCH PRINTED FABRICS at the Exhibition of 1851.

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

JACONOT,

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

And exhibited by them in the Class of FRENCH PRINTED FABRICS at the Exhibition of 1851.

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

And exhibited by them in the Class of FRENCH PRINTED FABRICS at the Exhibition of 1851.

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

And exhibited by them in the Class of FRENCH PRINTED FABRICS in the Exhibition of 1851.

Printed by Messrs. Dollfus, Meig, and Co. (of Mulhausen),

And exhibited by them in the Class of FRENCH PRINTED FABRICS, in the Exhibition of 1851.

List of New Manufactures.

Useful and Ornamental.

[On the same principle as Literary Journals give a list of new publications issued weekly, so we here afford to manufacturers, &c., the opportunity of announcing the novelties they bring forward, accompanied with such brief remarks as will be strictly explanatory; our readers will bear in mind, that the statements under these circumstances are made on the responsibility of the producers.]

Articles exhibited by Thomas, John, and Jos Mayer, of Dale Hall Pottery, Longport, in the Exhibition of 1851.

The peculiarity of Messrs. Mayer's wares consists in their being made more especially for the American market, in which they command a very extensive sale; but that which is in greatest demand is a ware known as "pearl white," and in which a large quantity of metal is used, rendering it very heavy. Their process of printing on these wares is also peculiar, which, being softened off at the extremities of the design, produces a more finished effect.

A specimen of Ornamental Vases, with the flowers modelled in relief.

TEA URN IN EARTHENWARE.

The material employed in the manufacture of these urns is capable of resisting the variations of temperature which such articles have to undergo. They are a novelty in this country, cleanly in use, and moderate in price.

Books.

THE PRINCIPLES OF COLOUR APPLIED TO DECORATIVE ART. By G. B. Moore.—Taylor, Walton, and Maberly, London.

THIS little work will repay a careful perusal of it. It is a modest attempt to establish principles in colour, which throughout all kinds of art-education are very much wanted. We could have wished that coloured illustrations had accompanied the book, practically to demonstrate Mr. Moore's theories, and we hope it may meet with sufficient success to induce him to add them in a second edition. In all essays on subjects which appeal directly to the senses, palpable and definite illustration is necessary, quite as much so as the positive diagram in demonstrating a proposition of Euclid. The progress and cheapness in chromo-lithographic printing make illustration comparatively easy. Our readers may judge of Mr. Moore's theories from the following :—

"Of the positive primary colours, it is difficult to find distinct types of each in nature unmingled with the others, and we must speak of them relatively. Thus, if we assume carmine to be the type of pure red, vermilion becomes an orange; and if, on the reverse, we consider vermilion as red, carmine changes to crimson, or belongs to the purple class. The same relation will be found in the tints of gamboge with ochre to yellow; and of ultra-marine with cobalt, Prussian blue, and indigo, to blue. The purest unmixed primitive colours are to be found in flowers.

"There can, strictly speaking, be only delicate and full tints of the primary and secondary classes; as the less positive hues, being caused by the mixture of the positive colours with their complementary hues, are tertiaries and quartiaries. We are accustomed to give the name of positive colours to hues varying from the fullest or brightest tints to very subdued shades.

"In the works of Creation, the same proportion of the various classes of colours generally prevails. In the bright skies of southern climes, where appears the greatest quantity of a primitive colour to be found in nature, the blue is concentrated at the zenith, from whence it graduates into the tertiary or quartiary hues of the horizon. In sunrise or sunset the combinations of the blue with the yellow, orange, or red tints, are effected by intermediate hues of the secondary, tertiary, quartiary, and neutral classes; the effect being often heightened by the bright orange lights of the clouds being directly opposed to the complementary blue, one of the most beautiful contrasts in colour, and the subdued grey shadows of clouds opposing and giving brilliancy to the warm bright colour round the sun. At this period may be observed the beauty of gradation, buildings and other objects being often seen in deep contrast with the warm brilliant colour, the darkest portion being often directly opposed to the brightest lights with the greatest force, and never appearing harsh in nature, owing to the opposing light and shade being concentrated and graduated in strength.

"We are accustomed to speak of the green hills and foliage of nature, but there are seldom any flat unbroken tints, the bright green of the foreground is varied by lights, reflections, and other incidents, and soon mingles with the brown olive and grey hues which compose the mass of the landscape. The various hues of corn, from the pale straw of summer to the golden tones of autumn, have distance to graduate and soften their effect on the eye, and are supported by the more subdued hues accompanying them. In the decoration of the interior of buildings we seldom can rely on distance to moderate the crude effect of positive colours, but must have recourse to other means. It is in gems, flowers, fruit, shells, birds, insects, and the smaller objects of creation, that we find the most positive colours, and then in most instances in graduated tints; the beautiful smooth and furred skins of large and small quadrupeds, and the plumage of the larger birds, are of the less positive hues: in the peacock the positive colours are confined to small parts, and the greater mass of the feathers are of the more subdued hues. The same arrangement may be observed generally in the smaller birds and most insects. The most positive coloured flowers are surrounded and relieved by leaves of a comparative low key or subdued hue; the great value of which to the brighter colour of the flowers may be easily ascertained by surrounding a flower with a corresponding quantity of green, of the same key or brilliancy as the flower. The harmonious combination of colours in shells is in general of the delicate tints and rich subdued hues.

"In an example, the admiration of which is not confined to artists,—the female face,—how little positive colour is to be found, the red concentrated in the lips, and blending through the carnations with the complexion; the blue only occasionally seen in the eyes, and yellow never alone or unmixed with its complementaries; the mass

of the complexion being formed of brilliant, delicate, or rich tertiary and quartiary hues, supported by deeper tones of the same classes in the hair. These magical combinations of hues have been the study of artists of all countries and ages, and the successful transference of them to their canvass, the ambition of the greatest colourists; the complexions of dazzling white happily existing only in imagination.

"It is often supposed that the tertiary and quartiary hues must be dull and gloomy, but the above example, and a glance at the silks and satins most in favour, which are generally of these classes, will dispel the illusion and prove that in them may be found hues varying from the most delicate to the richest.

"The eye is less excited or fatigued by small than large masses of positive colour; consequently, the smaller the object, the more positive may be the tint, and in viewing small objects it is difficult to shut out of view the surrounding hues which act in support and relief of the positive colours; also the unconscious continual motion of vision suffers it to dwell less on small spaces of colour than larger masses. Dresses, draperies, and ornamental articles of manufacture, being generally seen in connexion and combination with other objects, may be composed of the more positive tints in proportion to their size.

"Thus we find the general combinations or arrangement of colours in nature beneficently adapted to the requirements of human vision, and the great painters of the middle ages, having discovered the principles, have applied them in the works that now command the admiration of mankind. It appears, therefore, that if the principles found in nature, and adopted in the works of the greatest colourists, are correct, we should use the tertiary, quartiary, and neutral hues, for the greater quantities, and reserve the primary and secondary positive colours to heighten the effect, or attract attention to the points of interest. As far as I can recall to memory the effect of various edifices, the most successful appear to have been decorated on the above principles; but the decoration of buildings, like pictures, often improves, as well as suffers, by the hand of time, and it is difficult to say how far the harmonious mellow effects of the older buildings may not have arisen from the crude positive colours being softened and subdued by age, though we can generally judge if portions have been decorated in brighter tints than the rest. In the Gothic churches in Belgium and France, the greater quantity of the walls was generally left uncoloured, the subdued broken hues of the stone and rich carved wood-work, forming a relief to the more positive colour of the glass windows, pictures, and marbles; and where marbles were much used, as at St. Mark's, Venice, the greater proportions were generally of rich deep harmonious hues, and the brighter marbles reserved for the altars, shrines, &c. At St. Peter's, and the other Basilicas of Rome, the marbles form intermediate hues between the more positive colour of the pictures, mosaics, &c., and the subdued hues of the walls. In some of the more modern churches in Italy, contrast seems to have been the guiding principle in the application of marbles, and the effect is very inferior to the older buildings. In the Italian churches that have been decorated with frescoes, the positive colours being generally confined to the draperies of the figures, leave the greater quantities to the more subdued hues, and in some, where time has broken and subdued the crude tints, as in the upper church of the Convent at Assisi, the effect is most beautiful. A beautiful specimen of the same harmonious combination of subdued hues, copied from the tombs at Zanthus, is to be seen in the Lycian room at the British Museum. In the Cathedral of Milan the vaulting had been formed of brickwork, covered with plaster, which having decayed in parts, formed with the brickwork the most harmonious combination of subdued hues. Instead of taking advantage of and copying the same harmonious colours in the decorative repairs, in 1832, the vaulting was being painted with the representation of light perforated panelling, out of character with the massy pillars supporting it.

"In many of the above examples, gilding has been profusely employed, but owing, I imagine, to the various lights, reflections, and variety of effect, it receives, gilding appears to be exempt from the laws that affect other coloured materials, and may be used in any quantities, and harmonises with all colours; although from its brightness it would appear to be unsuited to the purpose, gilt frames are found to harmonise with every variety of pictures, better than any other kind. The churches of our own country have so suffered from wanton violence or bad taste, that it is difficult to name any examples, though in some of the cathedrals which have escaped the flat monotonous washes of tasteless innovators, the beauty and the solemnity of the broken hues of the stone and carved wood-work may be studied, and the value they give to the rich coloured glass; I cannot add pictures, mistaken zeal having in most instances banished them from our churches. Of this effect, were it not for the glaring inharmonious white marble modern monuments, Westminster Abbey would

be a splendid example. The recent introduction of monumental windows will, if generally adopted, save the walls of our churches from being covered with monuments of different style to the building, and add colour where it is much wanted. In the painting of them the arrangement of colour in the ancient specimens should be adopted; these contain no large masses of colour as in modern glass painted windows, and the figures, &c., were not regarded as pictures, but made subservient to the general ornamental arrangement of colour in the window. The objections to the removal from Westminster Abbey of some of the monstrous monumental absurdities, consisting in the reverence for the memorials of departed great men, and regard for the feelings of their living representatives, might be obviated by the substitution of monumental windows. The same rich combinations of subdued broken colours may be found in some of our collegiate halls, or remaining residences of the olden time, and are generally assisted and heightened by pictures and stained glass. At St. Denis, near Paris, the positive colours are profusely used, and the altars, pictures, stained glass, and painted statues, are sacrificed in consequence. The French, in their modern decorations in general, support and relieve the positive colours by delicate or rich subdued hues; at St. Vincent de Paul, the low-toned marbles of the columns occupy a large proportion of the composition, and are supported by carved oak-work. The historical and other pictures with which many of their ceilings are decorated, appear oppressive and unsuited to their place. In such situations the beauties of fine works of art challenging much attention, are lost from the difficulty and painful position necessary to view them, and if richly coloured with full positive colours and deep tones, appear heavy and overpowering, and lower in appearance the height of the apartments. Subjects for ceilings should be of light fanciful character, and painted with the lighter delicate bright tints and subdued hues. If the same class of colours are employed in the general decoration of ceilings, domes, arches, soffits, &c., and the positive colours necessary to prevent tameness of effect moderately employed, height and space, an important beauty in architecture, will be obtained. The beauties of Rubens' fine work at Whitehall Chapel are comparatively lost in its present situation. That the combination of varied hues and subdued colours excites the admiration of mankind, we have convincing proof in every exhibition and picture-gallery; where buildings are chosen as subjects in themselves, and not as secondary backgrounds to other objects, it is not the newly-erected edifice with its flat unbroken tints, but the older constructions with their time-stained walls, ruins to which the weather and mosses have given every variety of varied hue, cottages often possessing no beauty of form, and deriving all their charms from the rich variegated colours painters delight in. That this admiration is not confined to the English and their artists, many of the works of the Flemish painters are a proof. Painters select subjects from the lower classes of all countries, as much for the varied broken hues of their old worn dresses, as for any other picturesque quality. The beauty of subdued colours may also be seen in the Greek fictile vases."

It is not surprising that Mr. Moore should find himself in the midst of the Exhibition of 1851, like all the world. He observes:—

"The Crystal Palace is admirably designed for its peculiar purpose, but I imagine repetitions of it would soon appear monotonous. Conservatories are seldom very pleasing objects in themselves, the best designed often resembling large bird-cages, and can only be regarded as frameworks to the beauties they contain. It is some relief to hear that the material is stronger if used hollow in columns and beams, than if used in compact bars, as it may slightly check the tendency of the interiors of iron constructions to assume the appearance of spider's webs. As the colour of iron is so very dismal, and it requiring some covering to protect it, it is certainly more consistent with architectural truth to paint it some agreeable ornamental colour that is not deceptive, than to make it represent bronze, or other material. In the criticisms on the painting of the Crystal Palace it seems to be forgotten that, from the nature of the construction, there can be no large surfaces, and therefore the positive colour must be much broken in quantities and varied, the positive colours on the columns and bars near the eye being relieved by the spaces they inclose; these spaces being occupied by the colours seen in various distances, will form graduated hues which will support and soften the positive colours of the foreground. The enormous length of the building prevents it being entirely subject to the same laws that govern the more common-sized interiors, and requires it to be treated on the principles that govern exterior decoration, where the decorator can rely on distance to aid his effects."

Miscellaneous.

Schools of Design.—We sincerely regret to observe signs which shew that our prophecy, that the disorganisation of these Schools would continue, is being fulfilled. It ever will be so, as long as the drastic remedy of a thorough businesslike management, with regulated responsibilities and proper subordination in all parts, is evaded and postponed. With the eagerness of the public to use these Schools, it is a positive cruelty that the management should be so bad as it is. From all we hear, the Head School is again trembling on a disruption, which is averted only by the patience of the most useful and earnest man among the existing authorities. We blame no one personally. For the present, however, we keep silence, although we have no hopes of amendment until the system is changed. As a working machine it is a national disgrace.

Manchester has held its annual meeting to render a statement of its proceedings and of its financial position. The full accounts are not before us, but those that are shew that the expenditure on the year, being 1737*l.* 12*s.* 7*d.*, *exceeded* the year's receipts by about 600*l.* On the face of them the accounts admit a debt to the treasurer of 399*l.* 14*s.* 7*d.*, and this, too, after the large increase of the Government grant. This is truly deplorable. To suppose a School can flourish with such liabilities and an increasing debt, is altogether idle. The whole thing is radically wrong, and so a Manchester merchant would say, if he judged it by the standard of a commercial ledger.

At Birmingham the School is undergoing the common infliction of a personal quarrel among the authorities, which puts everything into hot water, and seriously impedes useful action. In this, as in similar cases, the cause is to be found in unbusinesslike management. When the pressure of the Exhibition is past, we hope to be able to resume an active investigation into the Schools.

The Progress of the Exhibition continues to be in every respect most satisfactory: the more it is seen, the more its attraction seems to grow. The visitors on the shilling days now average more than 60,000 persons daily! Such assemblages have never been collected before, perhaps, in the history of the world, and are certainly more than double what the most sanguine calculators had estimated they would be. We have presented already the daily receipts up to the 22d of May (*vide* p. 96), and we continue the record of them:—

Receipts at the doors to May 22		£37,702	10	0
Friday,	May 23	4095	10	0
Saturday,	May 24	5078	0	0
Monday,	May 26	920	0	0
Tuesday,	May 27	1347	17	0
Wednesday,	May 28	1859	4	0
Thursday,	May 29	2375	18	0
Friday,	May 30	2839	9	0
Saturday,	May 31	1770	15	0
Monday,	June 2	2129	1	0
Tuesday,	June 3	2415	2	0
Wednesday,	June 4	2500	16	0
Thursday,	June 5	2566	17	0
Friday,	June 6	2558	11	0
Saturday,	June 7	1523	15	0
Monday,	June 9	2436	4	0
Tuesday,	June 10	2272	2	0
Wednesday,	June 11	2160	19	0
Thursday,	June 12	2233	7	0
Friday,	June 13	2206	5	0
Saturday,	June 14	1634	17	0
Monday,	June 16	2854	9	0
Tuesday,	June 17	3191	2	0
Wednesday,	June 18	2897	7	0
Thursday,	June 19	2984	12	0
Friday,	June 20	2819	4	6
Saturday,	June 21	1674	10	0
Total receipts at the doors		£101,058	5	6

This gives an average daily receipt of nearly 2300*l.* since the opening day, on forty-four days. The total amount received for season tickets up to the same day has been 66,393*l.* 12*s.*, so that the total receipts from these two sources are upwards of 167,451*l.* 17*s.* 6*d.* The number of visitors entering the Exhibition has been each week as follows:—

May 1 to 3 (3 days)	56,042	1st	week.
„ 5 to 10	118,253	2d	do.
„ 12 to 17	145,507	3d	do.
„ 19 to 24	192,869	4th	do.
„ 26 to 31	222,114	5th	do.
June 2 to 7	245,928	6th	do.
„ 9 to 14	238,585	7th	do.
„ 16 to 21	303,015	8th	do.
Total	1,522,313		

This gives an average up to the present time of 33,800 persons per day, and no doubt this will get much higher.—It is satisfactory to know that the whole Exhibition is now perfectly solvent, and is possessed already of a surplus. How this may be disposed of is discussed in another page (*vide* 127).—The arbitration with the Messrs. Munday has closed. The only witnesses examined on their behalf were Mr. F. Whishaw, Mr. Fuller,

and Mr. Scott Russell. Although at one time there had been an evident desire to the contrary, we believe no claims were made for prospective profits. Having voluntarily abandoned all prospective risks, it would have been very inconsistent to have claimed prospective profits when the risks had ceased; yet this was done at one time at the advice of Mr. Timothy Tyrell, the nominee of the Messrs. Munday.—The Queen and the Prince continue their almost daily visits, and they will be probably the best-informed persons in the whole kingdom of the details of the Exhibition, next to Mr. Dilke, who acts the part of *cicerone* at the royal visits. It is delightful to see the pleasure which these visits seem to give mutually to the royal visitors themselves and the people at large.

Exhibition Meeting at Birmingham. —Some 250 of the most active workers in the Exhibition, consisting of Members of the Royal Commission, the Executive Committee, Foreign Commissioners, Jurors, &c., availed themselves of an invitation from the good folks of Birmingham to a day's amusement and a visit to the manufactories of what has been called "the Toyshop of Europe." The special train provided for the excursion arrived about twelve o'clock at the station, where the visitors were met by the mayor and a number of the leading manufacturers. After partaking of some refreshment, the company divided itself into various parties to visit the manufactories, among which were the following:—Messrs. Fox, Henderson, and Co.'s, the contractors for the building; the Southwark Tube Works; the steel-pen manufactories of Mr. Joseph Gillott, and Messrs. Hinks and Wells; the glass works of Messrs. Oslers, Rice Harris and Son, and Bacchus and Sons; the electro-plate manufactory of Messrs. Elkington and Co., and of Mr. Geo. R. Collis; the papier-mâché works of Jennens and Bettridge and Mr. Lane. At the Cambridge Street Works the clerks and workmen in the employ of Mr. Winfield presented Lord Granville with an address congratulatory of the very successful manner in which the Exhibition had been carried out: the presentation took place in the school-room connected with the works. Between three and four o'clock the company repaired to the Botanical Gardens, where a "fête champêtre" was held. At the banquet, under a tent, the mayor, after the usual loyal toasts, proposed the Royal Commissioners. Lord Granville replied, and paid a well-merited compliment to the energy displayed by the men of Birmingham, and the obligation the Exhibition of 1851 was under to that held in Birmingham in 1849. He shewed in what way the Exhibition of 1851 might be rendered useful, and in a liberal manner stated the obligations all lay under to the skill and energy of the Executive Committee. The health of the Foreign Commissioners was replied to by M. Von Viebahn; that of the Jurors was responded to by M. Dupin, and the company dwelt with no ordinary delight on the words which fell from the lips of one who had written so wisely and so well upon the resources of England. His sketch of what Birmingham had done for herself was vivid and true, the picture painted by an old inhabitant rather than that of a sojourner in a saloon of Paris. The health of the Executive Committee was next proposed, and acknowledged by Mr. Cole. Earl Granville proposed the health of the Mayor, that of the Mayoress and Ladies followed. The company then left the gardens and repaired to the Town Hall, where tea and coffee were provided. Several pieces were performed on the fine organ, and after enjoying an hour-and-a-half's conversation all repaired to the railway station. The visitors left amid the cheers of their entertainers, each and all delighted with the proceedings of the day.

Patent Laws in Birmingham. — A meeting has been held in Birmingham and a society formed, for the purpose of taking into consideration the condition of the patent laws, with the intention of devising some means of rendering them somewhat more useful. The several points will be discussed separately. "Should there be patents at all?" will form the first subject of debate. We have strong hopes that something will come out of this. The determination evinced by the men of Birmingham in things political would, in the present instance, be wisely transferred to effect a reform of laws which on every hand are allowed to be unjust and iniquitous.

On our visit to Mr. Messenger's works, we were glad to find the fountain for the Market-place at Birmingham progressing in a satisfactory manner. It bids fair to realise our anticipations, and to confer credit on this old and celebrated establishment. The design is in keeping with the situation, the principal ornaments being dead game, vegetables, &c., blended together in the most grotesque and novel manner. We may hope that the successful conclusion of this work will induce the more general introduction of one of the most pleasing features of Continental towns: why not of England also?

The principle of Exhibitions has

always been recognised by all nations and in all climes. Man naturally seeks to enlist the sympathy of his fellow-man towards the object which he admires. What we prize ourselves we desire that others should value also. The same law prevails with nations as with individuals, and all history teaches us that every people, whether barbarous or civilised, according to the spirit of its time and national feeling, has held public exhibitions of that which it regards in the highest esteem; with one people that object has been the display of religious mystery; with another heroism; with another bodily strength and fortitude; with another chivalry, &c. In the exhibition of the Eleusinian mysteries among the Egyptians; in the public games at Elis—exhibitions which originated the Olympiads, a very starting point of the chronology of the Greek people—in the scenes of the amphitheatre at Rome; in the bardic congresses in ancient Britain; in the tournaments of the Middle Ages; in the bull-fights of Spain; and in the varied exhibitions which prevail among ourselves at the present time, whether connected with art, science, or national sports, we may trace an analogy which connects them with that Exhibition of INDUSTRY to which the whole world is now a joint contributor for the first time.

MUSEUMS OF MANUFACTURES.—Your correspondent who sends the memoranda on Exhibitions got up by Mechanics' Institutes is correct as to their miscellaneous character: they were a strange jumble; but not unfrequently good pictures and statues, in connexion with rare specimens of natural history and mechanical inventions, might be at times detected of unmistakeable excellence. The antiquities, I am afraid, were too generally regarded in the light which the Scottish poet, Burns, describes the collection made by Grose, viz., as

> "A south o' auld nicknackets,
> Rusty nails and jingling jackets,"

without reference to the suggestive nature of the things themselves or their details. That such is not the case now you very well know, and one of the most successful displays at the Society of Arts was made up entirely of things antiquarian. As exhibitions have, to a certain extent, been a hobby of mine, I have amused myself with collecting together catalogues under the impression that they might one day be useful. Of these I find I have twelve previous to 1841. The Birmingham Exhibition which your correspondent alludes to I think must have been that held in connexion with the British Association Meeting which took place in 1839, and which was an assemblage hurriedly brought together for the nonce, but was distinguished by a fair display of specimens illustrative of the manufactures of the district. In passing, it may be remarked, that at the meeting alluded to, the paper upon Electro-Metallurgy was rejected by the *savans*, and the discovery itself ridiculed. Is not this, now, one of our most profitable arts, not to speak of its qualifications for doing things artistic at a cheap rate? Exhibitions of a polytechnic character were held in the *spring* and *autumn* of 1840, and again in 1841. Altogether, then, previous to the exhibition of 1849, Birmingham had brought together four miscellaneous exhibitions. A large and important one was held at Leeds in 1840. Its chief feature appears to have been pictures, though there is a goodly sprinkling of philosophical instruments; a Jacquard-loom figures among the attractions. In the same year the good folks of Nottingham succeeded in bringing together a great collection of objects. Here, again, the *artiste* preponderates, although there was a fair share of natural-history specimens. A valuable collection of geological objects was also a feature. One room appears to have been devoted to working models of machinery and specimens of manufactures. At Halifax, in the same year (1840), an exhibition was also held. Here, again, paintings preponderated; carpet, patent power, crape, and Jacquard looms, in connexion with other pieces of machinery, were however exhibited. Preston also succeeded, in 1840, in collecting together one of these miscellaneous assemblages, which appears to have been well arranged into the several sections of painting, sculpture, geology, ancient writings, &c.; natural history; mechanics, under which head were exhibited not a few specimens of the first-rate machines which have gained for Lancashire its name; antiquities, philosophical apparatus, &c. &c. The Newcastle Exhibition of 1840 approached more nearly something of a practical kind, while a portion of space was devoted to fine arts, &c. We find a very systematic arrangement of manufactures from various materials; thus, iron and steel, zinc and its alloys, tin and its alloys, bismuth, lead, antimony, nickel, plated metals, silver, gold, platinum, earthenware, &c. &c.; pearl, ivory, tortoiseshell and coral, wood, paper; buck cloth, silk, cotton, wool; flax, hemp, straw plait: the raw material and its finished products being ranged together, affording a series of

instructive and systematic groups. The Liverpool Mechanics' Institution was also engaged in the same work. Its exhibitions were extensive and well arranged. That of 1840 was the most successful; its characteristics were the same as that of others, but somewhat more manufactures were shewn in operation, and its proximity to the sea and being one of our largest ports rendered the collection rich in dresses, implements, and products of other countries. In Scotland the meeting of the British Association at Glasgow afforded the means for bringing together a number of models and specimens of raw and manufactured produce, forming altogether a most instructive collection, principally suggestive of improvement in machinery and manufactures. At Edinburgh, in 1839–40, the Society for the Promotion of Arts and Manufactures, in connexion with other societies, brought together a very useful and instructive assemblage, flax manufacture being one of its features: some excellent specimens of type-founding and lithography were also shewn. Agricultural implements, and other appliances in connexion with farming, caused also attention from those interested in matters of the kind. Papermaking, earthenware, glass-staining, stone-cutting, chemicals, models of marine architecture, machines, horology, all gave a practical bearing to this exhibition. Even the small and unimportant town of Dumfries succeeded in bringing together, in 1841, a number of heterogeneous objects, which filled some nine or ten rooms. All these exhibitions, small and comparatively unimportant, did their work: they were pioneers towards the great industrial display of 1851, "laying hills low and exalting valleys." These exhibitions of manufactures at first, it is safe to say, could not have been accomplished successfully; and it certainly does reflect credit on the men of Manchester, that they should have dared to set the example. It is equally gratifying to know that of the three gentlemen who accomplished the Manchester Exhibition of 1846, viz. Mr. Geo. Jackson, Mr. Geo. Wallis, assisted by Mr. Belshaw, the two latter have had their services to the good cause acknowledged by their engagement in connexion with the Exhibition of 1851. Thus a graceful, but just acknowledgment for services rendered has been accorded by the Royal Commission and Executive Committee, which does infinite credit to all concerned. It has generally been acknowledged that the men of Manchester are far-seeing; as an additional proof of this, permit me to give a quotation from a paper read by Thomas Barnes, D.D., on the 9th January, 1782, before the Royal Philosophic Society of Manchester. Why the most ardent advocate for expositions and local museums of the present day could not have expressed himself better; it is prophetic, far-seeing, and might have been written by you or me on the 9th January, 1851. Hear it:—"It is now *more* necessary than *ever* that our artists and workmen in the different branches shall be possessed of some degree of *taste*. And taste is only to be acquired by that general and miscellaneous knowledge which it has been the object of this paper to recommend. Our manufactures must now have, not merely that *strength* of fabric and that *durability* of texture in which *once* consisted their highest praise; they must have elegance of *design*, novelty of pattern, and beauty of *finishing*. To effect these all the aid of improved and refined art is essentially necessary." In speaking of the suggestive nature of collections of objects of art and manufactures, we find the Doctor saying, "I was a few days ago greatly pleased with tracing the progress of an invention into several branches of art to which at first it appeared not to have the most remote affinity: I refer to the cylinder covered with wire cloth, of different fineness, originally intended only for sifting flour, &c. For this ingenious invention Mr. Mills got a patent now expired; for the person who shewed it me informed me that he had himself applied the cylinder with little variation in sifting gunpowder, snuff, tanner's bark, and sand." In speaking of strong natural parts which had accomplished much, he wisely asks, "How much more might have been accomplished if an assemblage of all that had already been done had been there for examination? What if to genius and application had been added a larger field of observation, a more general acquaintance with the mechanical powers, and with what those powers have already done?" After a regret expressed that so few of our "dyers are chemists, and of our chemists dyers," he proceeds to point out his plan for making them both, a desideratum not yet entirely accomplished, though some sixty years have elapsed, and though much good science has been brought to bear on cotton-printing as well as other branches of manufacture. He states the first object of his scheme to provide a PUBLIC REPOSITORY among us for CHEMICAL and MECHANIC KNOWLEDGE. "In order to this, I could wish MODELS to be procured of all such *machines* in the various arts as

seem to bear the most distant relation to our own manufactures, all the processes in those of *silk*, of WOOLLEN, of *linen*, and of cotton, should be here delineated. These would make the most necessary and important part of this *collection;* but to these might, with great advantage, be added the astonishing effects of mechanic genius in *other* branches which have not so apparent an affinity with our own. In this REPOSITORY let there be likewise provided an assortment of the several *ingredients* used in DYEING and PRINTING, and for the purpose of *experiments*. A SUPERINTENDENT will be necessary to arrange and to apply this *collection* to its proper use. He should be a man well versed in chemical and mechanic knowledge; and let his province be at certain seasons, and under certain regulations, to give LECTURES, *advice*, and *assistance*, to those who wish to obtain a better knowledge of those arts. Lastly, that the expense be defrayed by subscription." He concludes by saying, "I mean not to disparage the utility of our modern collection of *fossils*, *shells*, *mosses*, and *insects*. They are the works of God, and therefore worthy of our highest admiration. But I can easily conceive that a scheme like this [he here alludes to the intention of Henri IV. of France, to institute a museum in the Louvre of Arts, Science, &c., accomplished by succeeding monarchs], upon a smaller scale, might possibly be applied to better use than many of these collections actually serve. In a town like this (Manchester) the opulence, and even the very existence of which depends upon manufactures, and these again upon arts, machinery, and *invention*, a PUBLIC CABINET, devoted to this purpose, would be at once of general ornament and utility." Every word of this is true and well digested. If such was necessary in 1759, how much is it wanted, nay, must be had now,—a thing to our shame be it spoken we have not got even in the metropolis of our country! Its possibility of accomplishment is now nearer and more easy than it ever will be again. Let the sensible advice of the "Athenæum" be taken, viz., purchase the Exhibition Building and its contents as it now stands. Depend upon it there has been a vast deal of money worse spent. Chain down, say we, to the spot in all its beauty and entirety this proud evidence of the skill and industry of the world—of the universal faith of all nations in the honour of England—of the strong wills which have overcome opposition, put an end to doubt, and blinded alike malice and envy, by the brilliancy which emanates from the Crystal Palace. Wordsworth, in one of his ever-glorious sonnets, prays for the coming of that time when England shall acknowledge that in education is her strength, and admit it is her duty to educate. We don't much like your very paternal governments, which do everything for everybody, but it would be all the better in the present instance if a little help was given. The necessity for increased facility in the acquirement of art-education admitted, everybody knows to his cost there is not any royal road to knowledge; great geniuses are exceptions, not the rule; and nobody is fool enough nowadays to go to gather figs from thorns, and grapes from thistles; but so it is in so far as art applied to manufactures is concerned, we have spied into the nakedness of the land; the Exhibition of 1851 has disclosed that though England has done well, she must yet do better. We may lay the flattering unction to our souls that we are untouched and untouchable in our substantiality. We have asked ourselves why should we not be equally great in the other requisites of ornament well and judiciously applied? Our answer is to be found in the limited number of objects accessible to those likely to be benefited by their examination. Now then, or never, let us make some effort to retain among us some of those gems; if we cannot get all, let us get as much as we can. Bright conceptions which flit across the mind lose their intensity and vanish into thin air when a few short years have run their course; the Exhibition of 1851 will never be forgotten, but its individuality will be merged into a halo, which it is safe to say the best literary descriptions, aided by the pencil, will be unequal to the task of completely elucidating. The collection itself seems to be the only means of properly perpetuating a knowledge of this "marvellous fact" to succeeding generations; its present value, alike to artisans and the general public, as an educational institution, is equally important, for it contains a history of the condition of the industry of the world written by itself in this the year 1851 on books of metal, timber, stone, wool, silk, cotton, &c. &c. No other country under the sun could boast of such a collection; its purchase would indeed be worthy of the majesty of England: there, with an efficient assemblage of lecturers, a Working Man's College could be reared, in which lessons might be read with manifest benefit to our national industry and taste.

A.

Birmingham.

Original Papers.

THE EXHIBITION UNDER ITS COMMERCIAL ASPECT.

BY M. DIGBY WYATT.

A GLASS of still champagne, if good, is nectar, if bad is rubbish; and it needs no great proficiency as a *gourmet* to at once discriminate the intermediate stages between the two extremes. A glass of effervescing champagne, on the contrary, so takes the judgment by storm, that it is rarely until the second or third glass that even the most profound in such matters venture to sip gingerly and pronounce judgment upon the nature or quality of the noble wine which may be set before them.

The "still champagne" of life to the man of business is that stimulant administered to him by the ordinary vicissitudes of his avocation, the fluctuations of prices, the irregularity of supply or demand, and the probable solvency or insolvency of those with whom his transactions may have been carried on.

All such matters present themselves to his attention in the form of such every-day affairs that he is enabled to at once concentrate his faculties upon a realisation of the current circumstances—an analysis of their bearings—and an energetic exercise of judgment upon any dependent difficulties which may be recognised in the process of analysis.

The "champagne moussante" of life is, however, a very different affair. The matter of the stimulant remaining much the same, the manner in which it is presented, the effervescence of feeling with which it is always accompanied, and the lively impression its novelty produces upon the nerves,—all tend to engender an excitement, stirring to action, but to a great extent paralysing the judgment. All the great events of life quicken the feelings and affections to an intense degree, but generally serve also to deprive a man, for the time being, of what is commonly called "coolness." It is not while flushed with the ebullitions of such circumstances that we would seek the opinions of the principal party concerned on their probable effects upon his after-life,—we should either, if time permitted, wait until the excitement had passed off, and then appeal from "Cæsar drunk to Cæsar sober;" or, if judgment could not be deferred, we would take into counsel those friends of his youth best acquainted with his temperament and previous history, and then on the facts and opinions thus collected build up a theory for ourselves.

Now the peculiar "fever of the brain" which the great events of life give rise to in the individual, the great events of history engender in nations; and therefore it is that, in spite of all our endeavours at the present moment to be cool and reasonable, future ages will "point the moral"—social, political, economical, and commercial—of the Great Exhibition, with infinitely more precision than we can, any of us, now pretend to. It is not while under the shadow of the mountain, groping our way to hit the path by which alone the summit may be reached, that we can estimate its dimensions, or predicate concerning its vast physical conditions. "Pour mieux sauter il faut se reculer," says the old French proverb, and never was it more applicable than to the occasion of the manufacturer striving to distil, for his own benefit and delectation, the essence of all that is noble and beautiful in the Great Exhibition.

Wisely and truly did His Royal Highness Prince Albert, in his speech at the Mansion-House banquet, pronounce the present to be eminently an "age of transition." There have been many other phases in national history which might have been similarly characterised, but in one essential particular the present differs from all its antecedents, and that one is in the "pace" at which the work of transmutation is going on. We remember hearing from the head of one of the largest and most enlightened firms in Manchester, and therefore in the world, an anecdote which, relating the experience of an individual, may serve as an index to that of the aggregate. It appeared that the firm in question had undertaken an enormous contract for printed goods to be delivered by a specified time for a specified sum. A completely unexpected fluctuation

took place in the price of some essential ingredient. Reputation would have been sacrificed by a non-fulfilment of contract, and a heavy money loss seemed the only alternative presenting itself. Stirred by the occasion, a consultation was held of the heads of the firm, and it was determined, after sundry trials, to *double-speed all the wheels.* The bold experiment turned out a success. What was lost upon the material was made up by the saving of labour, and instead of a loss, a great profit was realised.

Like their Manchester pioneers in the way of commercial progress, the men of business of this "age of transition" are all *double-speeding their wheels.* Pace and price are driver and stoker to the great national train; the former rattles away till timid brains grow dizzy, and the latter feeds the movement by a carefully adjusted supply of the materials of velocity. Heaven send that nothing may get in the way of the former, or reduce the quantum or quality of the latter!

Recognising, as every thinking man must, the inevitable changes which the comparative annihilation of time and space, through the railway and telegraph combinations of the present day, must operate upon the whole aspect of commercial transactions,—keenly alive as the merchant should be to the certainty, that in free trade, free international relations, free press, free navigation, free education, and comparatively free postal communication,—all privileged markets, all chicaneries of the monetary and agency systems, and all the "prestige" which old-established mediocrity has built up into a substantial bubble, must bend before that ruthless destroyer of conventional restrictions—Competition; it is scarcely possible we conceive that, that thinking man—that, that rational merchant can regard the Exhibition of 1851 with emotions other than those of the deepest interest.

In that Exhibition must be recognised the winding-up and taking stock of all the commerce of the world. Every producer has now an opportunity of seeing how far the articles issuing from his workshops are suited to supply foreign markets. Every shipper for those foreign markets has now an opportunity of observing what articles are best calculated for extended foreign sale. Every consumer has now an opportunity of studying variations of quality, and of recognising the various forms in which the skilful manufacturer presents for his selection the most ordinary articles of every-day use, so that at one and the same time his wants may be ministered to and his tastes gratified. The manufacturer has now an opportunity of testing the results of the efforts made by artists and designers to ally their knowledge with his, and to bring their command over the harmonies of form and colour to bear upon the processes of his manufacture. The artist has now an opportunity of ranging over the varied products of the world, of fixing upon those objects in the elaboration of which he may conceive that his talents could be made most serviceable, of determining the nature of those deficiencies which his taste might be best able to supply, and of learning the detail of those processes of fabrication which define the conditions in subjection to which alone his imagination can be made practically useful. The man of science has now an opportunity of tracing precisely the extent to which the physical laws of nature, and her beautiful "economy of manufacture," have been appreciated, and adopted in the formation of systems and processes of production and utilisation, analogous to those which the ever-watchful Creator of "the world and all that therein is," continually carries on for the health and comfort of mankind. The merchant and the capitalist have now an opportunity of recognising those wants which accident may have left unsupplied—those departments of commerce in which energy, ability, outlay, and industry, may reap golden harvests; here they may see how a factory could be established where labour is cheap, and where to give employment is necessarily to confer a boon upon the whole state; there they may be able to perceive how a new article may be introduced, giving to the poor man enjoyments previously within the reach of the rich only; here they may have an opportunity of meeting with those inventors through whose fertile imagination labour may be economised, price reduced, and, as a consequence, consumption increased; there they may encounter those prompt and daring

spirits to whose wild courage and thirst for adventure alone could be entrusted the task of colonisation, or the establishment of commercial relations among the barbarians of California, the Polar Regions, the Backwoods, or the Texas.

Happily Englishmen are not inapt to take advantage of opportunities, provided that they are set before them in a tangible form, and address themselves to the particular departments which in the "division of labour" each man has appropriated to himself; and therefore it is that we have every expectation that benefits of the greatest value to the nation must accrue from the presentation to its citizens of a collection of objects, pregnant with the gravest suggestions. It is a great fact to be enabled to recognise in those paragraphs of the public prints which are essentially "Caviare to the million," and in which "the state of trade" is recorded, the impetus already communicated to the manufactures of the country by the Exhibition. What could be more interesting or gratifying than the letter from Nottingham, dated July 12th, which appeared in *The Times* of July 14th? In the two following extracts from that letter we may trace two points of direct advantage gained through the Exhibition,—points upon which not Nottingham only, but all the great centres of English manufacture, must deeply sympathise, as likely to lead to results of no common importance. The writer of that note remarks that "during the last few days many strangers have visited Nottingham, principally parties who have carefully inspected specimens of the local manufactures in the Exhibition, and some of them have opened accounts with the houses whose goods best suited their tastes, thereby in some cases opening markets abroad for the consumption of our industrial products in places where they have hitherto been unknown. This is one of the many advantages derivable from the Great Exhibition." The writer continues to remark that, "another and not less important benefit conferred by it, consists of the many suggestions for improved taste our manufacturers, artisans, and designers, have met with while carefully inspecting the products of the foreign competitors. Nothing new in machinery has been met with, Nottingham being perhaps the only town in the world where new products and means of production can be met with to any extent, so far as textile fabrics are concerned; but the many hundreds of our more intelligent workmen, who during the last fortnight have availed themselves of the opportunity for a cheap journey to London, have returned with their experience, taste, and judgment, so much improved by what they have seen, as to have laid the foundation for changes for the better—greater, perhaps, than any which have hitherto taken place." In the glass, iron, and many other branches of production, from Manchester, Birmingham, &c., accounts of a similar tendency are beginning to pour in; and although we are not so sanguine as to believe either in the advent of a golden age for commerce, or in a period when wages shall continue to be paid and no work done, we cannot but recognise as coming into operation that healthy stimulus, which springs from the desire to excel, animating at once the master and the workmen.

The question of free trade is now so far admitted as an axiom of political economy, that it is scarcely necessary here to inquire in what way the Exhibition is likely to affect the popular consideration of that grave question; but there are two or three points, to a certain extent coincident with the matter of free trade, upon which so much prejudice exists, that we may perhaps be allowed to devote a few lines to an enumeration of them, and a slight exposition of their fallacy.

These are, 1stly, That the Exhibition will produce a competition between wholesale and retail trade operating to the disadvantage of the latter.

2dly, That a quantity of foreign goods will be bought, and English trade thereby injured.

And 3dly, That it will tend to interfere with and disturb old trade connexions and usages, and substitute fever for health.

Now all these sound very disastrous, but it is only at the first glance that any apprehension can be entertained with respect to them.

In the first place, with regard to competition generally, let us remember

what Huskisson urged in requesting the House of Commons to try the experiment of unswathing the infant's limbs and allowing the thews and sinews of national industry to move free and unconfined. "Prohibitions," said he, "are in fact a premium upon mediocrity;—they destroy the best incentive to excellence—the best stimulus to invention and improvement. They condemn the community to suffer, both in price and quality, all the evils of monopoly, except in as far as a remedy may be found in the baneful arts of the smuggler. They have also another of the great evils of monopoly, that of exposing the consumer, as well as the dealer, to rapid and inconvenient fluctuations in price." To attempt now to restrain the legitimate course of honest competition in matters of business, would be to break up the commercial system of the world, to tax the community, ruin thousands, and throw millions out of employment. The only gain, and a more than questionable one, that could be effected by any such attempt, would be to create a few monopolies. The truth is, not that the Exhibition acts in the matter to any considerable extent, but that the rapidities and facilities of intercourse and transport, which railways, telegraphs, and penny postage, have introduced of late years, have broken through that cloud of mystery in which the old-fashioned shopkeeper was wont to envelope the sources from whence, and the prices for which, he was in the habit of obtaining the supplies he retailed. In Mr. Babbage's brilliant chapter on prices enough facts are adduced to shew the iniquity of the system of concealment, which formerly offered an almost irresistible temptation to tradesmen to demand a most improper and exorbitant profit. Now happily it is easy enough to find out approximately what cost price is. No country gentleman now who has the option of spending a penny on a letter, and getting a supply of tea from a large wholesale warehouse in town, sent down to him by railway, all expenses included, at 5*s.* 6*d.* a-pound, will be found willing to give 6*s.* a-pound to a local dealer for tea which is not nearly as good. But the same gentleman would not think of sending to town if he found that that shopkeeper marched with the spirit of progress, was willing to sell him a good article at a fair and steady price, and, taking advantage of the very facilities which the gentleman had at command, had so stocked his shop as to be enabled to furnish what in the old times the gentleman could not have obtained without sending to London for it. That the knowledge which the public gain every day of the qualities and prices of the objects they purchase must tend to their benefit no one will feel disposed to doubt, while at the same time there can be no fear that their knowledge can be of any detriment to the honest shopkeeper. It is to be remembered that the increased value which all accelerating agents, such as railways, &c., have set upon time, must ever prevent the sensible man from wasting his precious moments in seeking to be supplied from a distance when he might be equally well furnished from a good shop in the next street to that in which he lives. There is every reason to expect that the Exhibition will excite shopkeepers to select their stocks with greater judgment, and contract better habits of business than those which are now prevalent, and in effecting that improvement the community immediately, and the shopkeepers ultimately, must be inevitable gainers. If the shopkeepers are ultimately benefited it will be found that the manufacturers must participate in that benefit in proportion to the increased extent of the retail transactions, and thus, far from the just views of the two classes being divided, their real and permanent interests and objects will prove to be identical, being evidently to do the greatest amount of business at rates equitable, and fairly remunerative, to each.

If there was fallacy in proposition No. 1, there is certainly much more in No. 2, namely, "That a quantity of foreign goods will be bought and English trade thereby injured." Let us see, in the first place, what foreign goods are most likely to be bought. The answer is manifest,—those which are better than the English. What will be the consequence?—That the English manufacturers will, as Huskisson says, "first try to imitate, and by and by surpass, their foreign rivals." What is the history of English manufacture but mainly a series of brilliant appropriations, adaptations, improvements, and carryings to perfection of branches of trade, the initiation of which was only

communicated to us from abroad? In the clothing, glass, worsted, lace, and silk trades, and many others, foreign processes, foreign workmen, and foreign materials, have been imported into this country, so absurdly against the grain and spirit of the people, that instead of being grateful for the "goods the gods have sent them," they appeared more like children upsetting the cup that held the medicine which was destined to do them good than like sensible and rational people.

The whole history of the Alien laws bears testimony to our repugnance to be cured of our inaptitude to receive new impressions. From the time of Edward III. and his Flemings to the present, those very foreigners from whom we have derived the processes of manufacture of some of our most important staples, were treated with kicks and cuffs; and it has taken centuries to persuade John Bull that all Italians are not "macaronis," all Frenchmen "frogs," and all French productions "kickshaws." The kindly spirit and style in which the truly distinguished foreigners who are now visiting this country have been received gives us hopes that much most unworthy prejudice has been done away with. Let but commonsense lead us to appreciate the productions as we have appreciated the men, and then, with the energy and pertinacity which are the national characteristics, there is little fear that we shall not be able to imitate them with success, and out of their excellence engender new forms and processes, leading to truly original modifications of the elements of trade. If their articles are beautiful, let ours be more beautiful; if theirs are light, and cheap, and fanciful, let ours be lighter, and cheaper, and more fanciful; and if there is one atom of information to be gained, or utility to be derived, from any single object exhibited by a foreigner, the man who prevents its leaving this country, retaining it as a model for our manufacturers to take a lesson from, will confer a true boon upon national commerce, by enriching it with yet one more opportunity of obtaining a hold on the affections of those for whom we are striving to produce, that is,—the whole world. Some few manufacturers may possibly have cause to grumble for a year or two at their own inadequacy to compete with the foreigners, but if they have the wisdom to swallow the dose, and the strength of constitution to throw off their present disease, there is little doubt they will be hereafter grateful to those who may have administered the potion.

And now with regard to proposition No. 3, namely, "That the Exhibition will tend to interfere with and disturb old trade connexions and usages, and substitute fever for health." If a man gets a tumour upon his leg which annoys him now and then, but which must inevitably kill him in a short time, it certainly may be a disagreeable thing for his doctor to tell him, or for him to hear—but it is nevertheless necessary—that he should have his leg cut off and live, rather than retain it and die. If a man of an apoplectic temperament will go on eating and drinking, and sleeping after dinner, every one knows what will become of him, unless he is made to give up all his bad practices. Now many branches of English production, but for the rude hints which they receive occasionally from without, were fast sinking under analogous diseases. A man dawdled on—perhaps in making clogs—as his father had dawdled on before him, hugging his very limited share in the "division of labour," his thoughts never wandering as to whether better things, or prettier things, or cheaper things, were made elsewhere; so long as his sold, what did it signify to him? All of sudden he finds one morning that American clogs are coming into the market much better and cheaper than his. His tradesmen give him no more orders; he only knows one way of making clogs, and he knows nothing else of any use; he is ruined, and there is an end of him. People say, "Poor fellow! it was a fluctuation in his business ruined him." True enough; but in their sympathy they forget that he ought to have foreseen the possibility of some such fluctuation taking place, and prepared himself accordingly. While he was asleep the American was working—the American receives, justly, wages for working—he, wages for sleeping. If work be fever, then the more we have of it the better. Intellectual labour is always sufficiently well paid in this country, for a man to judge how much it is healthful for him to do; and within the limits of knocking himself up, the more he has to do, the better for himself and for his country. It is

fit and proper that those who are willing to work should gain money; and if it be necessary to "interfere with and disturb old trade usages and connexions," in order to insure this result, let it be done at once; and if the Exhibition assists in carrying out that end, so much the better.

The questions we have been attempting to discuss are grave and important, affecting the commerce of this and of every other country; it may not have been in our power to treat them with the wisdom of others better qualified for the task, but something will have been gained if wise men should be induced to take them into consideration. If the Exhibition produces no other good results for this country, something will be gained if it does but set men "thinking seriously."

UNIVERSAL INFIDELITY IN PRINCIPLES OF DESIGN.

THE absence of any fixed principles in ornamental design is most apparent in the Exhibition—not among ourselves only, but throughout all the European nations. Many other nations shew better faith and better practice in design than those of Europe. Does the progress of civilisation and the increased value put upon knowledge and labour destroy principles of taste? It might seem so. Ponder thereon.

If we were to collect the most elaborate works of ornamental design from each European nation, it would be found that they resembled each other so much that it would be difficult, if not impossible, to identify the nationality of them, and every class of manufacture would be found to have some features not only inconsistent with its use, but actually warring against it. It appears to us that the art-manufactures of the whole of Europe are thoroughly demoralised, and destitute for the most part of correct principles. France, to which the world gives the *pas*, seems to us to be only the leader in what should rather be avoided than imitated in manufactures, and it is when England attempts to plagiarise from France that she appears to the greatest disadvantage. The most serious violation of principle common to both nations is the negation of utility as paramount to ornament. All European nations at the present time begin manufacture with ornament and put utility in the background. The very best things in the Exhibition are the least ornamented. One of the most faultless pieces of furniture is Mr. Snell's writing-table, and one of the most faulty is the Austrian bed. We have recently seen some observations on the state of design as presented in the Exhibition, which have been published in *The Times* and *Morning Chronicle*, and which appear to us, in the main, so sound and so suggestive that we transfer them to our pages; and we entreat manufacturers and students of design to read them again and again and reflect upon them. We commence with those in *The Times*:—

"Our potters have sent contributions to the Exhibition which illustrate every known style of the manufacture. Some delight in Etruscan shapes and colours, others take the bronzes of Pompeii for their model. The influence of China is of course prominently seen, and mediæval art also showers down its suggestions. Then we have bad imitations of Sèvres and worse of Dresden. Every day we are adding to the number of our reproductions; and, no sooner is Parian introduced for modelling statuettes, than Cupids and other juvenile indelicacies are perpetually smiling at us under glass shades, or sitting in very uncomfortable attitudes upon projections of dishes, or balancing themselves miraculously upon the summits of lids. But pottery is by no means the only or the most flagrant case of this imitative rage, which is so strongly marked at the Exhibition. Take the section of carpets, and you will find it almost, if not quite, as strong. Here partly, probably, in obedience to the dictates of the Berlin wool-workers, and partly in deference to the tastes of the Brussels and French makers, we have got into a habit of covering the floor we tread upon with a luxuriance of vegetation and a lavish expenditure of colours which it is quite wonderful quietly to contemplate. Let any one look along the girders of the western nave, from the sides of which our carpets are suspended, and we are much mistaken if even the Chiswick shows have any longer the slightest charm for him. He will there see flowers, and leaves, and fruits, of a size such as was never seen in this world before, and we conscientiously hope may never be seen in this world again. He will find his eyes dazzled and perplexed by moss-roses that give him a headache with their bright-

ness, and he will wonder how he could ever make up his mind to walk over a material so decorated. The uses of a carpet are no mystery, and any sensible person who examines the subject will have no great difficulty in deciding what style of ornament is unsuitable for such an article. In the first place, he will say, make your carpet the background for setting off your furniture appropriately and well. Now is that to be done by broad and startling contrasts of colour, which are constantly drawing the eye-sight painfully downwards, instead of allowing it to rest agreeably upon other objects? Again, no one will contend that flowers represented as real, and fruit rounded off so that you are tempted to stoop down and gather it, and vegetation that threatens the foot with hopeless entanglement, are proper designs to tread upon. Yet that is what not only England, but all Europe, judging by the Exhibition, does in this matter—and why? Because when tapestry became no longer useful, the love of large patterns and real effects which it suggested were imported into carpet-making, while the monstrosities of Berlin wool-work came in aid of the mania. The English section of carpets has imitations of Indian, of Brussels, of French, of parqueterie and tessellated pavements, and of the mediæval style of manufactures. In one article that is a pretty long list of reproductions, and reminds us that in industry, as in the drama, we are rather addicted to borrowing other people's ideas, and not very choice in the selection of them. Let us take another branch of production, where it seems less likely that we could err. It is that of grates, lamps, candelabra, chandeliers, candlesticks, and such-like objects, for the heating and illumination of our dwellings. In these undoubtedly there are a few very fine productions, and with respect to some of them our pre-eminence is undoubted; but let any person of ordinary taste examine the whole collection carefully, and he will retire from the survey with a painful impression of the ignorance displayed in the use of really beautiful materials. He will find grates, exquisite in the quality of their workmanship, but totally unsuited for the uses they are intended to serve, which must necessarily break the hearts of servants in the effort to keep them clean, with Greek, Gothic, Moorish, and Elizabethan architectural arrangements introduced which are totally unnecessary, and figures of human beings in unhappy proximity to an element which must inevitably destroy them. The English manufacturer never abandons the idea of vegetation, and wreaths of fruits and flowers that would puzzle the horticultural acumen of Mr. Paxton himself are fearlessly suspended over the receptacle for the glowing embers, or disposed upon the fender as if it was meant that they should be toasted. Again, in lamps, candelabra, chandeliers, and such-like, the greatest atrocities in taste are committed; all reliance upon the materials employed and the purpose they are intended to serve seems to be thrown overboard, and the study of the makers has evidently been to render their products as little as possible like what they were intended for. Some seize upon the idea of trees with curiously entangled branches, and which have neither art nor nature to recommend them; others get a human figure patiently to support upon its head a weight of metal which would sink the stalwart frame of an Atlas; then animals and birds of all kinds are represented doing physical impossibilities in the cause of light, and, to crown the absurdities perpetrated, Cupids and the other adjuncts of heathen mythology are lavishly interspersed among chandeliers and brackets with a disregard of simplicity and elegance in design which is truly surprising. . . . . Some sections, and especially that of machinery, feeling their pre-eminence secure and undoubted, have been content to be plain and unpretending, in consequence of which they develope a high degree of artistic excellence. The most refined taste will gather pleasure and satisfaction from a survey of our machinery department; for there, in the forms and the arrangements, strict attention to the proprieties and requirements of each machine may be readily traced. The only beauty attempted is that which the stringent application of mechanical science to the material world can supply, and in the truthfulness, perseverance, and severity with which that idea is carried out, there is developed a style of art at once national and grand. We may quote, as remarkable illustrations of this, Whitworth's tools and the cotton machinery of Hibbert and Platt. So, again, in the building which enshrines this vast collection of human industry there are no pillars that could be dispensed with, no architectural mannerisms, no effort at effect unsubordinated to the general design. All is plain, simple, and mathematically severe; yet who can enter that vast interior and not feel his heart swell within him at the solemn and majestic impression which it creates? We do not for a moment contend that the unbending precision which produces such great results in the cases quoted would be equally applicable to the manufactured products made available for our every-day and domestic wants and comforts, but unquestionably it shews that there are limits to the decorative art prescribed by the uses and the material of the objects on which it is exercised, and that we cannot with impunity

attempt to recall defunct or foreign styles of ornament. Whether we shall ever have a school of design incorporated with our manufactures original, characteristic, and meritorious, it is impossible at present to foretell, for the Exhibition throws no very hopeful or decided light upon that subject. New tastes are not formed and old habits of subserviency are not dismissed in a day. The power of cheap production and the advantages of excellent material, turning the scale of the market, blind our eyes to defects which would not otherwise escape notice if competition pursued us more closely. Then it must be remembered that the sins of which we complain are shared with England in pretty equal proportions by every other European country. In some branches we are in advance, in others we are behindhand; and the French undoubtedly twist about the ideas which they gather from the past with a freedom and playfulness which we with our literal faithfulness of rendering cannot always equal. But, on the whole, the vein of art in connexion with manufactures seems well-nigh exhausted all over Europe. What, then, is to be done, and where shall our industrial classes look for inspiration to guide them? Undoubtedly they will learn most from a careful study of the Indian collection. There they will find developed in its greatest known excellence the harmonious combination of colours in textile fabrics. Such a thing as vulgarity in design seems unknown in our Eastern dominions except when clearly imported by ourselves. They appear to have the secret of being minute in their patterns without any confusion or indistinctness, and, however great the elaboration of ornament in which they indulge, *the uses and materials of the article* which they decorate are considered paramount. We do not, in pointing out these things, by any means recommend that our manufacturers should cultivate long beards, rush into the productions of Cachmere shawls and Masulipatam carpets, go about in palanquins, and, forswearing Christianity, become Mahommedans or Brahmins; but they may supply defects and correct faults in the decorative art as practised among them from a careful elucidation of those rules upon which the instinctive genius of Eastern nations in such matters depends. They may at length penetrate the secret of that happy ease and grace of style which makes Indian productions magnificent without being in the least degree staring or pretentious."

These are doctrines which we have again and again insisted on. Our manufacturers should affix throughout their workshops, for the edification of all, "Decoration must be subordinate to the uses and materials of the article." The *Morning Chronicle* justly points out that,—

"In all former stages of society—in other periods of our own English history, and in other countries—production, in whatever branch, or under whatever sky, was self-interpreting, told its own story, and carried with it its own credentials. A single glance ranked it under all the categories. Its *where* and its *when* were unmistakeable. It needs but the veriest tyro in art to settle the date or the place of a church, or a medal, or a dagger, or a piece of earthenware, or a manuscript, or a jewel, or a fragment of embroidery, of metal work, or of bookbinding. There is not a handwriting extant, of any antiquity, which even a slight familiarity with the subject would not readily assign to its century—perhaps to its city. But how stands the case among ourselves? We design and execute in every conceivable style. We imitate every extant school. We are equally at home in the reproduction of classical and of Byzantine art—Etruscan ware and Majolica; we can execute Chinese or Athenian with the same facility; we can forge—perhaps that is the most appropriate term—an Egyptian obelisk or a Corinthian capital, a so-called Gothic moulding, or a Sèvres cup. We are not just at present contending that all this is wrong—we only say that it is a fact, and a new fact.

"But we will go further, and say that it must be wrong—perhaps even morally wrong—injurious to, if not destructive of, a healthful sense of propriety—to allow one shop-front to be the reproduction of a scrap of an hypæthral temple, and the very next door to exhibit an adaptation of a pointed arcade. At this very moment the three most remarkable buildings of our own days exhibit the following jumble:—in the Palace of Westminster, a mediæval design; in the British Museum, a severely classical model; in the Queen's Palace, a something like Louis Quatorze. The buildings themselves have no special affinities to the respective styles adopted. There they are, and conjointly they exhibit sufficiently the state of public taste. And these vagaries and inconsistencies are not confined to ourselves. Germany can shew its Valhalla, and its synchronising Byzantine church, erected under the auspices of King Ludwig of Bavaria. This state of European taste is most forcibly illustrated by the contents of the Great Exhibition. It proves that art and manufacture in the nineteenth century are not their own historians. They are perfectly incapable of any

chronology. Side by side, from the same manufacturer—perhaps from the same artist, certainly in the same material—are the stiff processional treatment of a frieze, the flowing capriciousness of an arabesque, and the literal imitation and transcript of nature itself. Naturalism and conventionalism find an equal advocacy, and often from the same critic. Mr. Dyce is beautiful—Mr. Etty is beautiful. It scarcely crosses our minds as incongruous that the furniture of a single room exhibits specimens of work, of intention, and of execution and adaptation, ranging over twice ten centuries, and of national taste and climatic purpose, extending from Mexico to St. Petersburgh."

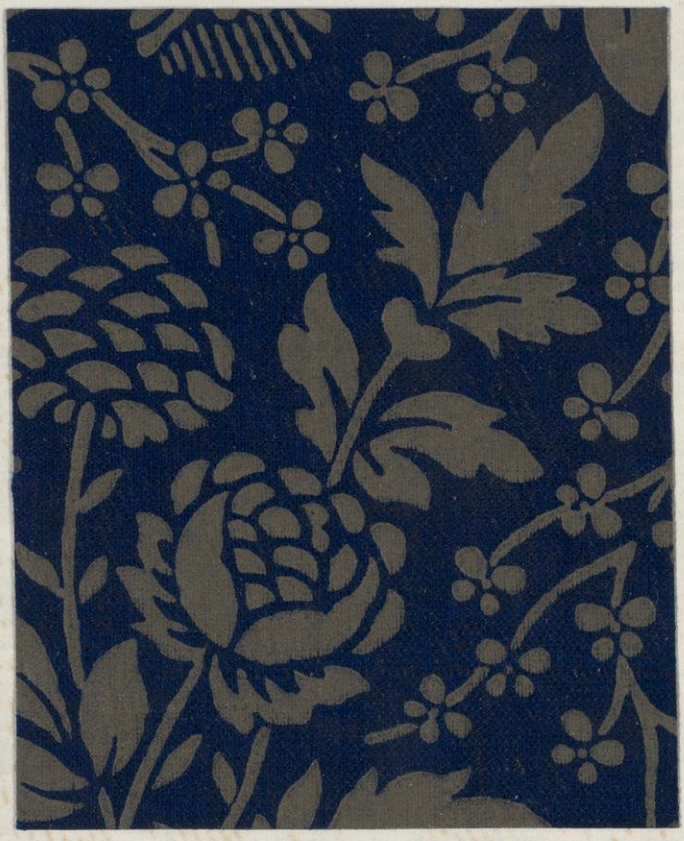
Every student in design should learn the following by heart :—

"What we want are canons of taste—laws of beauty—principles and axioms of propriety. It was once considered false heraldry to place metal upon metal; but it is now thought no solecism to aim at producing exactly the same effects in wax, in silver, in stone, in wood, in iron, in smashed paper, in pounded gypsum, in leather, in silk, and in cotton. A goldsmith is thought an equally good artist whether he makes a candlestick in the shape of a branch of fuchsia, or of a monolithic column, or even if he combines the two in one design. A bunch of roses or a dead fish we think alike beautiful, and equally so whether raised on a porcelain dish, or cast on a silver tankard; we do not complain whether we get festoons or quatrefoils carved on a chimney-piece, embroidered on a veil, woven into a carpet, or printed on paper-hangings. Can each of these be equally right? Is the standard of prettiness a sufficient account of, or reason for, the proceeding? For ourselves, it seems something like a debasement of human intelligence to look with equal favour on a group of prancing horses and a model of the *Victoria Regia*, as alike suitable for a centrepiece! If the dining-room carpet is the transcript of the Bellerophon mosaic, in flat tessellation, ought the drawing-room carpet to present us with vases and bouquets of poppies and lilies, in all the colours and lights and shades of a Covent Garden flower-stall? May a painted window imitate a landscape by Claude as legitimately as an interlaced diaper?

"We are quite aware of the answer to all this—it is urged that tastes vary, and that manufacture must follow taste. But our question is, whether there is any taste in this variableness of taste—whether taste ought so to vary—whether, if its rules were discovered, or rather elucidated, taste is not as fixed a thing as truth—whether beauty has not laws. It cannot be that æsthetics, to use the hard word of the day, which covets so much ignorance and falseness—is only 'what I like,' as Horne Tooke said that 'truth was only what the individual troweth.' It may be that at present this difficulty overlies the whole region of modern thought and belief; but what we urge is, *that art has its dogmas and its orthodoxy*, which are as severe as any other axioms. It is not unnatural that we should find ourselves at sea in this great flux of things. Ours is an age of transition; we are in the midst of the breaking up of the great deep of the past, and we are perhaps struggling after a wider and more distinct range of truth. We are, perhaps, labouring out great principles for the future; it may be that we are on the way to re-construction after the deluge. But ours is certainly a chaotic period. The Exhibition shews that we are most skilful mimics—that we know how to reprint classics—that we can restore everything. But what do we create? Is there not something more truthful, more really artistic—more calculated to impress us with the fact that the workman had a feeling and interest in his work and a clear adaptation of his means to this end—in the Indian niellos and its solid metal-work, in the dull, stately grandeur of the carpets of Tunis and Turkey, nay, even in the Sioux embroidery, than in Bright's flashy 'tapestry carpets,' in Hunt and Roskell's silver capriccios, or in the miserable rococo of our Oxford-street sideboards? Is it not a fact that we are living in something like a Claudian age of art-feeling? The very greatest work which the Exhibition can achieve—one which it is very likely to achieve, if rightly read—one for which, among its many high purposes, we gratefully hail it—is that of giving us a decided and acknowledged national taste, and of creating a defined style in English art, which shall embody a distinct historical character of our own age, a homogeneity of feeling, a truthfulness of conception and adaptation, and a clear estimate of the worthlessness of mere individualism in art. We ask to be taught by the Exhibition what is mere capriccio and *tour de force*—what is sound invention and artistic truth. The Exhibition, we trust, will teach us to reject unreality. Painted slate is a very clever thing—so is a casting in *carton-pierre;* but one touch of human nature, one stroke of the chisel, one original blow of the hammer which comes from the soul, and speaks to the soul, is worth all our imitations and reproductions, however correct and elaborate."

Truly "art has its dogmas and its orthodoxy," which our Schools of Design have yet to learn and teach.

Manufactured by Bannerman and Sons, of Manchester.



Exhibited by them in the Class of PRINTED FABRICS, in the Great Exhibition of 1851.

These are specimens of a fabric which the Exhibition has been instrumental in introducing to the public. They are intended for the decoration of rooms, for furniture covering, and linings of various kinds. It is asserted by the manufacturers, that the metal decoration will resist atmospheric action and not tarnish in use; but this has yet to be proved by experience. Certainly the specimens in the Exhibition do not shew deterioration. It is easy to see that this manufacture may be used very ornamentally in many ways, and it would be worth the manufacturers' while to endeavour to obtain some simple designs especially appropriate and characteristic.

Manufactured by Bannerman and Sons, of Manchester.

Exhibited by them in the Class of PRINTED FABRICS, in the Great Exhibition of 1851.

Printed in Nineteen Blocks of Colour by Hargreaves, for Liddiards.

Exhibition of 1851.

The demand for this beautiful satin cotton, given in our MAY number, exceeded the supply, and a balzarine was substituted in some copies: a specimen is now inserted in the whole edition, in order that all the subscribers to the JOURNAL may be supplied with an example of by far the best cotton print in the Great Exhibition.

Printed by Messrs. Hargreaves, for Messrs. Liddiard.

Exhibited by them in the Class of BRITISH PRINTED FABRICS at the Great Exhibition of 1851.

Manufactured by Midelton and Answorth, of Norwich.

Exhibited in the Class of MIXED FABRICS at the Great Exhibition of the Works of Industry of all Nations in 1851.

The Paramatta is a somewhat new manufacture, the use of which is largely spreading, and, with other fabrics, superseding printed goods to some extent. The present specimen is remarkable for its softness, fineness, lustre, and durability.

COTTON QUILTINGS.

THE very beautiful and useful fabrics displayed in the Great Exhibition under this head, though comparatively limited in extent, are worthy of more attention than their unobtrusive appearance will be likely to gain for them, except amongst such visitors as may be directly interested in the production, or in the buying and selling of similar articles. With the view, therefore, of calling attention to fabrics which may be said to be eminently English in character and in use, we insert an example, and desire to point out the specimens of those manufacturers who have illustrated a department of industry in which so much excellence of fabric is combined with so much utility and beauty.

These quiltings may be classified under two heads for the convenience of reference—bed and toilet quiltings, and vestings, the latter being illustrated by the specimen inserted. This is manufactured by Mr. Jabez Johnstone, 44 Spring Gardens, Manchester. In this and other examples exhibited by Mr. Johnstone, the extreme fineness and beauty of which can only be understood by a close and scrutinising examination, the coloured quiltings have upwards of 160 warp threads and 250 shoots of weft to the inch, and the white diamond patterns upwards of 220 warp threads and 500 shoots of weft in the same space. The great fineness of the cotton yarn used for the purpose of manufacturing these articles of dress will, therefore, be self-evident.

The name of the fabric is derived from the custom in bygone times of the "dames" of our old English households "quilting" or stitching together two pieces of plain cloth with a wadding between them. Those used for bed-covers or quilts were generally of linen, with a wadding of wool to give warmth and substance to the work when completed. The primitive pattern was a diamond figure, which was obtained by the stitched parallel lines crossing each other at angles as the two pieces of cloth were sewn together, and as the thread drew the surfaces close the wadding between them formed the raised figure; and very frequently, where time permitted and a superior taste prevailed, the diapered ground thus formed was varied by the insertion of ornamental figures.

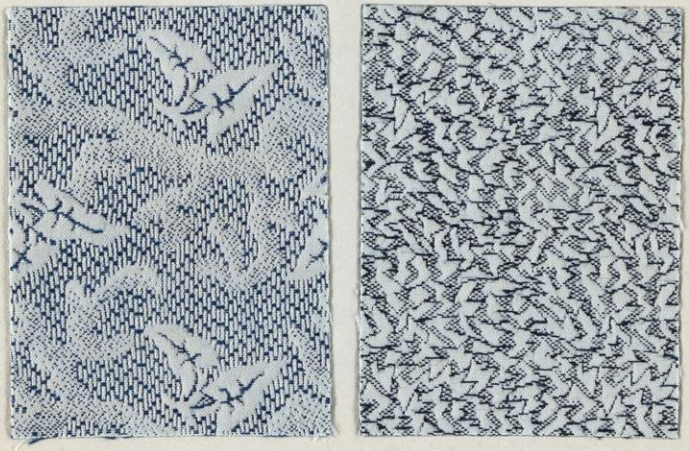
In the production of the modern "quiltings" the manufacturer proceeds on precisely the same principle, for his fabric is a double cloth bound together in certain ornamental forms of a more or less elaborate character. This double cloth is produced by two separate warps, and these are delivered off the beams at different rates of speed, the upper or face warp being longer than the back warp, and worked off more quickly in order to admit of the wadding weft raising the figure, whether that figure be a mere diamond or an elaborate ornament. Two qualities of weft are also used, one to produce the face of the cloth, and is consequently of a fine quality, the other being coarser in order to give strength and substance to the fabric when bound together. For a very considerable period the manufacture of the article was altogether confined to the plain white diamond quiltings, with such variations as could be introduced in size and angularity. At a later period small figured objects and spots were introduced. The Jacquard machine, however, produced in this trade, as in every other to which it has been applied, those improvements which have resulted in the elegant fabrics shewn in the World's Exhibition, and placed the manufacture of quiltings in the highest rank of articles intended for personal use, whilst the elegant and elaborate character of the bed-covers and toilet quiltings, produced by the same means, shew to what an extent this manufacture comes within the class of productions to which art may be applied, and, if used intelligently, how much of beauty and excellence may result therefrom.

The manufacture of these goods is chiefly carried on at Manchester, Bolton, and the surrounding districts, as also more latterly at Huddersfield and some parts of Yorkshire.

In the various illustrations of this manufacture to be found in the Great Exhibition, those manufactured by Mr. Jabez Johnstone, already quoted, maintain a very high position not only for their beauty and excellence of manufac-

ture, but also for appropriateness of design, alike in the vestings as in the bed-covers. There is one specimen of the latter the drawing and design of which are very superior, and some idea may be formed of the fineness of the fabric and elaborateness of design, when we state that 15,000 cards were employed in its manufacture. The colourings are very tastefully introduced, and in some of the vestings this is especially noticeable. Another Manchester house, Messrs. John Spencer and Son, also exhibits this class of goods. Their display of vestings shews the attention and care which this firm has so long bestowed on these articles, the specimens of which are all of a very high class, both white and coloured. The bed-covers shew great excellence of manufacture, but the designs of the centres are not so elegant as they might be. Their diaper pattern of the ground, however, is peculiarly appropriate. Messrs. Barlow, Goody, and Jones, of Bolton, exhibit some good specimens of the ordinary manufacture of bed quiltings; and Messrs. Myerscough, Steele, and Co., shew an almost unexampled specimen of fine quilting for vests, together with toilet quilts of excellent quality.

Cotton Quilting for Waistcoatings,



Manufactured by Jabez Johnstone, 44 Spring Gardens, Manchester.

The Yorkshire manufacture of these fabrics is represented by the beautiful displays in vestings of Mr. F. Schwann, of Huddersfield, and Messrs. James Folson and Sons, of Dalton, near that place. In the latter series the great and varied excellence in design is a gratifying feature, and the executive skill with which the most difficult effects are wrought out shews very distinctly the progress now making in this direction by the more spirited and energetic of our manufacturers. Some of the examples shewn by Mr. Schwann are not the less to be admired in these points.

The only exhibition of these goods on the foreign side, which requires particular notice, is that of M. Charles Patriau, of Rheims, who also exhibits a splendid variety of vestings in other fabrics. The quiltings, however, are not equal to these latter either in design or execution, and though they compare well with the average productions of the English houses above quoted, they are certainly not equal in any respect to the best examples. In fact, up to the present time, this manufacture has been exclusively English, and, with the ample means we possess for extending our markets and improving on past efforts, it will be our own fault if we do not continue to excel in the production of so elegant and so useful a material.

THE FOUR PRIMARY SENSATIONS OF THE MIND: THE SUBLIME—THE BEAUTIFUL—THE LOW OR RIDICULOUS—AND THE PAINFUL.

A BRIEF ESSAY. BY JOHN BELL.

(Continued from page 127.)

The Beautiful.

ALL that is more especially delightful to a healthy mind, whether in thought, word, action, form, sound, or colour, is rightly entitled to the epithet "beautiful." Although it be our pleasure, as well as duty, to contemplate, at times, the immensity of the "sublime," it is with the beautiful and pleasing associations of our being that we love to dwell, and have our familiar existence. And it is in this region of "beauty" that the arts chiefly rejoice and flourish.

"Beauty" has been attempted to be defined as consisting in "a certain fitness and proportion." This, however, does not effect the end of a definition. Everything in Nature is, no doubt, fit for its purpose, yet, without a perversion of the term, we cannot call everything "beautiful," and every combination of atoms may have a certain arithmetical proportion, but we cannot discover it.

To make this clear, we will consider some examples where fitness is obviously no measure for beauty. The hide of the bear is equally fit for its purpose as the variegated coat of the panther or leopard, and the loathsome skin of the bull-frog and toad as the plumage of the most brilliant bird of the tropics; yet we cannot view them as equal in beauty. On the other hand, we cannot deny great beauty to many arabesques, although composed of elements impossible to co-exist in nature, and therefore, in so far, in the highest degree, unfit. They are fit, however, we feel, for beauty. Therefore, if beauty consists, in some sort, of this fitness, such fitness must be divided from other fitness, and be defined as a fitness for beauty! an involved combination of ideas and assumptions, fanciful and useless, and not tending towards the improved clearness which is the object of definition.

An angel, or figure with wings on its shoulders, has been always recognised as a beautiful object; insomuch that all nations, that have attained any degree of cultivation of the arts, have delighted in such representations, which add the flight of the bird to the powers of man. The cherubim of the Hebrews watched over the ark. The Easterns sang of their colossal gins, and endowed them with lightning flight; the Egyptians ornamented their tombs with winged spirits; and the Greeks and Romans had their Genii and their Loves and Psyches. And in later days, Raphael, Milton, and Flaxman, in their several arts, have painted, sung, and sculptured, angelic winged beings. Yet in none of these representations exists the structure of bones and muscles fit to move their pennons or waft their possessors through the fields of air. As another example, one of the ancient pictures most renowned for beauty was that by Protoxenes, of a family of Centaurs, whose forms however, if considered in relation to fitness, are quite wanting, being those of a creature with two sets of lungs and digestive organs,—one of the human being, the other of a horse!

The second quality also—Proportion—if used broadly and unprecisely, is of no service to definition. Proportion, to be of use, must be exact and certain; and we are not sensible of any such, in common, for various objects. The proportion of the rose is not that of the lily, though they are both flowers and both beautiful. Nor is the proportion of the horse that of the leopard, though they are both quadrupeds: indeed, so far from there seeming to be one proportion, in common, for all objects, the direct reverse appears to be the case. Each animal, flower, and plant, seems to have a proportion peculiar to itself; no two objects appearing to possess the same ratio. Proportion indeed varies with age, sex, and character. The proportion of a man is not that of a woman, nor is either of these that of a child; nor is the proportion of an Apollo that of a Hercules, nor of a Juno that of a Nymph.

In the legend of the Greeks, Love is represented as the offspring of the god-

dess of Beauty. The myth is full of meaning. I fear we cannot go much farther than to translate it thus; Beauty is that which affects us with admiration and love, whether of virtue or of visible and sensible nature. Beyond this, in summary definition, I fear we shall not usefully and practically advance, even if we avoid taking into consideration the variety of the human mind, which increases the difficulty of erecting absolute standards. This is evident, however: that it is to the average of intellectual and educated minds that the artist or author has to address himself: and it is equally clear that it must be right for him to consider justly those qualities that raise in such minds congenial and delightful ideas, tutoring himself, if possible, to a universality without prejudice that may best address his labours towards rendering him a right exponent of beauty and truth.

In pursuing such a course there are certain qualities that I would suggest—as those which he will discover wholly, or in part existing in all those objects or subjects that affect him as beautiful. Most writers, indeed, on the subject of the "Sublime and Beautiful" have enumerated some such list as the following:—Fitness, Proportion, Simplicity, Variation, Smoothness, Gradation, Grace, Delicacy, and Harmonious Combination.

Fitness.

Although it cannot be rightly held that the terms "fitness" and "proportion" contain and comprehend a definition of "beauty," yet they rank eminently among her qualities; both as being those which common-sense especially expects and appreciates, and as affording, as it were, to any subject its main structure, to be completed by the other qualities.

Thus, though there be examples of beautiful objects in which much unfitness exists, yet we shall never find beauty without some portion of fitness. In the example given above of an angel; though there appears to be an unfitness inseparable from the object, in the want of structure to move the wings, yet the more fitness, in other respects throughout the object, that is attained, the more beauty will it be likely to possess. Thus angelic wings should be of graceful form and smooth plumage, harmonising with the celestial and peaceful idea of the aerial and superhuman being, whose presence should bloom with youth and dilate with dignity.

As a general rule, indeed, and a safe one, the more fitness exists in an object the more is its beauty recognised, and as its presence involves consistency, it will afford a peculiar satisfaction in any work of art; while the want of it will perpetually intrude itself unpleasantly. A drama or a poem loses much of its charm if its characters be not consistent; nor is a statue beautiful unless one style pervade the whole. Picture the "head of Homer on the shoulders of Paris, or the trunk of Hercules on the legs of Hylas!" So much, indeed, should a fine statue be consistent in itself, that, supposing it broken into parts, and then mixed with a variety of other fragments of sculpture, the portions should be recognisable from the mass, not by the fitting of the fractures, but by the unity of character. In the same way in styles of decoration, a great charm exists in consistency of character: what can be more unpleasant than a medley of Greek, Roman, Gothic, and Byzantine, in one piece of ornament?

That the Greeks kept clearly in view this principle of consistent fitness may be observed not only from their single figures, but in their largest and most detailed works. In the temple of the Parthenon all the parts, architectural, and sculptural, and ornamental, were in unison; all the details were consistent, and subservient to the end and aim of the whole,—the honour and worship of Attica's presiding deity!

The importance of fitness, as an element of beauty, is to be seen in many ways. A foot is not a beautiful foot unless arched and elastic, thus justly formed to support the body, and to supply that spring which obviates the succession of painful jerks that walking, running, or dancing, would otherwise consist of, and which would not only take away all grace of action, but would soon destroy all the economy of motion. An eye is not beautiful unless clear,

full, and well formed for vision, nor a head a well-shaped head except proportioned for thought. In craniological experience we even find the most beautiful heads to possess (*cæteris paribus*) the finest powers of intellect.

Indeed the greatest amount of fitness is almost always to be found co-existing with the greatest beauty, especially in form. Thus are the most beautiful ships the fastest, the most beautiful horses the fleetest, and the most beautiful birds and fish, as the dolphin and swallow, traverse their respective elements with the greatest rapidity and ease.

Beauty, in woman also, exists with fitness for the station she holds among created beings, and is associated with the adaptation for bearing and rearing a family, and with the rest of her social and domestic duties. To conclude: fitness is an appropriate and trusty guide to the artist both in the selection of his subject and the determination of his characters and details.

Proportion.

Experience and analogy teach us that an actual, numerical proportion peculiar to the beautiful of each object exists. They also inform us that it is highly useful in art to study this proportion, and adopt or make for ourselves, at least proximate, rules for its adjustment. The lily and the rose, the oak and pine, though not possessing, as far as we can see, any general rule of proportion common to all, yet have each evidently appropriate individual proportions, and throughout nature we have reason to believe that individual proportions proper for beauty in each object exist, from whose ratios they cannot much depart, without loss of beauty. The lion, the stag, and the horse, although their structure has great resemblances, yet vary extremely in their proportions; nor has any common standard been found that would, with any accuracy, comprehend and define them. On the other hand, in representing in art any of these animals, the knowledge of average rules of proportion peculiar and proper to each is highly useful. Indeed it always arises in practice, that the artist does find out, adopt, or lay down for himself some such rules, more or less exact, which he applies to his works. The human being, as naturally most studied by us, has its proportion most known. Polycletus was considered by the Greeks to have attained that of man in his Doruphorus or Lancebearer, which thence obtained the name of "the rule." This figure was doubtless of a proportion much founded on average; "not so broad as Hercules or so slender as Hylas." It is not necessary for us to detail here any of the well-known tables of human proportions laid down and adopted with advantage in art, to be found in the writings of Da Vinci, Flaxman, and others of acknowledged science and authority. I would remark, however, that no such proportions, whether deduced from the direct study of nature, or from the fine examples bequeathed to us from former practice, can be held as absolute. A fine figure in a work of art is not to be built up by mere arithmetic, or calculated algebraically, or defined by rule and compass. All such measurements should, in use, be considered as but proximate, as they must ever vary in age, sex, and character, whence the saying of Michael Angelo, that "no compasses equal those of the eye." This apposite saying, however, implies an eye that is correct, and to which experience and practice have taught the general measurement of proportion. The practice of artists varies: some commence with the general adjustment of proportion; with others the work proceeds to an advanced point before the rule is applied, which thus comes in to correct and not to plan. But in either case no high success will be attained without particular regard to this quality in some stage of the work; for due proportion is one of the principal elements in any representation, whether of the human form, or of animals, plants, architecture, or decoration. In a vase, for instance, the first quality that strikes the observer is, its possession, or want, of proportion, and without success in this respect, all possible elaboration and beauty of detail fail in satisfying refined taste.

Simplicity.

Simplicity is nearly allied to fitness, as in the example of the Parthe-

non, where the impress of the whole work is simple in spite of its many details; from the consistency of the parts. Simplicity is the offspring of fitness, and is the most innocent of the handmaids of Beauty. Where she leads our best judgment follows. The blue sky, the green meadow, the quiet sea, how broad, simple, and delightful, is their impress! The wild flowers unconfused by cultivation, how single and clearly distinguished is their effect, and in human life how simple the path of the single-minded compared to the ways of deceit! In art how simple are the Miranda and Ophelia of Shakspeare, the holy beings that people Raphael's paintings, and the designs of Flaxman!

That nation who possessed most strongly and universally the perception of beauty, produced works of a peculiar and remarkable simplicity. The manners, poems, histories, buildings, orations, statues, and even the domestic furniture of the Greeks, were strongly imbued with this unobtrusive yet exquisite quality, conveying to us that impression of unity and elegance which we call classic.

The female form, to us the most beautiful object in Nature, is, though varied in outline, very simple in its character and markings: far more so than the more rugged and powerful form of man. At the same time, this simplicity co-exists perfectly with the most exquisite finish and detail not only in the female form, but in all objects of Nature and Art, and consists not in the smallness of their numbers, but in their unity of parts, and subservience to one design. A corn-field has many ears of seed, and each ear many grains, yet a field crammed with a golden harvest is a simple and beautiful object.

Variation.

Thus when simplicity is lauded, neither fewness nor sameness of parts is by any means implied, but rather the contrary. The tree with its many leaves, the meadow with its many flowers and blades of grass, possesses probably not two of these alike. This perpetual variation, which implies and comprehends novelty, is indeed a constant attribute of Nature. No two flowers or fruits on the same plant are exactly similar, no two faces probably in the whole human race, and if beautiful hair and drapery be examined, though the general effect be simple, Nature varies their parts in perpetual change. In the human body there are not two curves, except of double parts, exactly alike; each of the fingers has its distinct and peculiar character, and the swellings and indentations in the limbs are never exactly opposite.

Smoothness.

Burke has said that "smoothness is a quality so essential to beauty that he does not recollect anything beautiful that is not also smooth." As a general and useful rule, this is doubtless true. Smooth petals and leaves, smooth slopes of ground, unruffled lakes, the almost polished plumage of some birds, and the soft coat of many animals, afford us apt examples. In this respect small-pox is a sad enemy to beauty.

Gentle Gradation.

From the uniting of the two foregoing qualities springs "Gentle Gradation," which in form produces what Hogarth so much dilated on—"the line of Beauty."

In colour, and light and shade, and music, this quality is full of enchantment. Its influence is paramount in a summer evening sky, where the ruddy hue of the setting sun melts into orange, the orange into yellow, the yellow into green, till the glow's last tinge dies away into the calm pure blue depths of heaven! In music the senses follow entranced:—

"The winding bout
Of linked sweetness long drawn out,
With wanton heed and giddy cunning,
The melting voice through mazes running,
Untwisting all the chains that tie
The hidden soul of harmony."

Grace.

Grace is the effect, also, of these qualities, and in action produces a succession of easy and gentle changes. It is a quality that gives attraction to a common form, a charm to trifling conversation, and delights the eye in dancing or horsemanship.

Delicacy.

Delicacy enhances other charms, even where it refines them to fragility, as in the elegant gauze-winged ephemera, the finest fabrics of the loom, the intricacies of filagree work,—in fine hair, in hands with taper fingers, in the Italian greyhound, the fawn, and the ibis, and the breathings of music over a lake.

Harmonious Combination.

All these qualities must, however, be combined in the magic web of harmony to produce their full effects of Beauty. In art Genius, and her more sedate sister, refined Taste, have alone skill to weave its fabric.

We have thus briefly touched on those qualities which are to be found in those subjects or objects that we call beautiful. I have not sought to make any arbitrary definition. I have rather wished to call the student's mind to that mode of considering the question that might be sufficiently precise for practice, and yet elastic enough to avoid the raising of needless difficulties.

In concluding this portion of the subject, however, I would recapitulate the proposition, viz., that in all that regards man, Beauty, in its extended sense, signifies that which especially inspires us with pure love and pleasure; as beauty of form, colour, and sound, the beauty of virtue, mercy, truth, faith, holiness, and loving-kindness. Beauty, thus considered, is man's truest source of pleasure, and is the proper influence for our thoughts, words, and actions, towards each other; among which rank the arts of poetry, music, and design.

(*To be continued.*)

IMPROVEMENTS IN PAPER-STAINING.

We have already spoken (vol. iv., p. 174) of the rapidity with which cheap paper-hangings are produced by means of machinery, and we now resume the subject.

The present method of machine or cylinder printing arose out of a combination of workmen against the introduction of a machine which then existed, and by means of which three blocks were printed at one operation. Three boys were required to attend to the sieves and one man to the blocks; the only machine allowed by them at that time was a pin-roller, it being impossible to lay an even ground or pattern by means of pin-blocks. The cotton printers of Manchester having successfully applied machinery to the printing of their goods, attention being turned to the application of similar machinery to paper-staining, and with considerable success; but as the paper-stainers were unaccustomed to the use of body colours, and as they found it impossible to use size with them, a comparatively low class of article only was produced. The chief objection, however, to the machined papers is, that paste is substituted for size in working the colours, which, when exposed to the action of a moist atmosphere, smear and rub off. Notwithstanding this objection, the rapidity with which papers were produced, and the price at which they were sold, created a large demand for them; added to which, the importation of paper-hangings from France of a superior quality and lower price than that at which they could be produced in England, caused a corresponding diminution in the demand for hand labour in this country. This combination of circumstances has driven the block-printers of England to consider how they could create for themselves work, which they can execute at a price and in such a manner as will again drive from the field their hitherto successful rivals; and this they appear partly to have accomplished by means of improvements recently introduced.

The first improvement introduced was the process of patching the sieve, or covering it in parts with various colours instead of one colour only, as was the

case under the old process. Thus two or more colours are worked by one block, and as the ordinary size colours are used, the advantages of the single block-printing are preserved. The second improvement consists in increasing the size of the block, and so arranging the designs upon it, that five or more colours may be printed at one operation, by working the block in half-lengths, the colours being so arranged that while one-half of the block is laying in what may be termed the first tint, the other half follows with a second colour. By this latter process papers in twenty or thirty colours are printed from four blocks, one man and a boy being all that are required to work them ; and the principle is capable of extension to an almost unlimited extent. The papers produced are equal to the single block papers, while the cost of production, as compared with the machined papers, is nearly the same, owing to the great outlay necessary in order to prepare a pattern for the machine, while in the other case it is only necessary to have the blocks cut at the usual cost. Our readers are already well acquainted with the productions of Messrs. Hinchliff and Co., who are now working the new process extensively, and we hope shortly to be able to give a specimen produced by it, the colours in the patterns hitherto produced being too much dispersed to enable us to do so in the present number. Papers printed in twenty-three colours can now be sold retail at 3½*d.* per yard, whereas, if produced by the old method, they could not have been sold for less than 10*d.* per yard. We thus have another instance of the folly of workmen opposing the introduction of such improvements as may from time to time be suggested—but out of evil comes good. Had the block machine-printing been adopted by the paper-stainers at the time of its introduction, it is probable that the improvements which would necessarily have followed would have kept the cylinder machines out of the field ; as it is, the workmen are now driven to adopt a process which entails a much larger amount of labour, owing to the increased size of the blocks, while, from the cheapness of other papers already in the market, the price paid for their labour has been materially reduced.

The accompanying specimen of satin-damask block paper, in three colours, produced by Messrs. Hinchliff and Co., is well adapted for a small breakfast or sitting-room, or for panelling. The ground is well covered and is sufficiently subdued, so as not to destroy any pictures or ornaments placed against it.

COMING REFORM OF THE PATENT LAWS.

Out of Lord Brougham's Bill and the Government Bill, and the evidence taken before the Committee of the House of Lords, a third Bill to reform Patent Law has been compiled, which is now passing through the Commons ; and, considering the late period of the session, it is not likely that any material change will be made in it. The following is an abstract of its main provisions :—

1. Patents are to be granted as directed, notwithstanding any existing law or usage.

2. Commissioners are to be appointed, namely, the Lord Chancellor and Master of the Rolls, the Attorney and Solicitor-General for England, the Lord Advocate and Solicitor-General for Scotland, and the Attorney and Solicitor-General for Ireland, with person or persons appointed by Government, who may make rules and appoint offices and officers for carrying out the act.

3. Applicant for patent must file his application, and pay 5*l.* accompanied by a provisional specification, or by the complete specification, with the present clerk of the patents.

4. The application, together with the provisional specification, or with the complete specification, is to be examined by examiners, to secure compliance with the rules, appeal being allowed to the law-officers of the crown. The application being found *en règle*, the patent right will ensue from the day of application. This will hold good for six months without any further proceeding or payment. At six months date, the patent must be proceeded with, or further time to complete obtained, which may be granted for three months longer on payment of 10*l.*

5. On applying to proceed with patent notice is to be given by advertisement, when

objections may be filed with the examiners, who are to examine into the matter and report to the law-officers of the Crown, that is, the Attorney or Solicitor-General; Government dues, 5*l.*

6. On receiving report of the examiners, the law-officer may examine into the matter, and finding all correct, is to make out a warrant for sealing the patent. Dues and stamp duty, 10*l.*

7. This being taken to the clerk of the patents, he is to have the letters patent made out in proper form; Government dues, 5*l.* The letters patent to include the whole of the United Kingdom and the Channel Isles.

8. Letters patent secured under the old law for one part of the United Kingdom may be extended to the whole, and become subject to the new law.

9. The publication or use in any foreign country, or in any of the colonies, prior to the date of the patent, to invalidate the patent.

10. Provisions are made as to the enrolment of specifications, &c. as to the making and keeping an index of patents and specifications, &c.; the publication of specifications both past and future, and every Patentee is to have twenty-five printed copies of his specification.

11. The points relied on in any lawsuit, as against the patent, are to be stated in writing, and notice thereof delivered to the patentee before trial.

12. All fees to be paid to a patent fee fund, and compensations, salaries, &c., to be paid therefrom.

13. Patents to be subject to the following payments at the end of the third and seventh years, namely—Third year, fee and stamp duty 50*l.*; seventh year, fee and stamp duty 100*l.* If the money be not paid the patent will be forfeited. The whole cost of a patent for fourteen years, it will be seen, is thus settled at 175*l.* exclusive of any costs incurred in oppositions, and of course of any payments to private agents.

It cannot be denied that this Bill establishes a procedure far better than at present exists, although it is far from being as simple as we think it ought to be, and probably will be. Why the Patent-office should be retained, when it is intended to have a public office besides, is only intelligible on the ground of extracting fees. However, there are two excellent points secured by the Bill, which will probably constrain everything to go right,—the first is a low fee (5*l.*) at the beginning, which secures the protection, and the next is ample publication of all proceedings; and if the administration is made as easy and as convenient to the public as possible, the Act may be made to work well. The Society of Arts, the Manchester Committee, and a public meeting at Birmingham, have all petitioned that the Bill may be passed, although they have recorded their sense of its imperfections.

THE SILK-WORM IN ENGLAND AND THE MANCHESTER SILK TROPHY.

Among the British silks in the Exhibition, one of the most conspicuous features is the Manchester banner, executed by Messrs. Houldsworth, wholly of home-grown silk. It will be found at the east end of the south gallery, very near the end of the transept, and whilst it presents a very successful example of silk manufacture, it affords conclusive evidence of the fitness of silk grown in England for the finest workmanship. Availing ourselves of this opportunity, we shall notice briefly some of the efforts which have been made to cultivate the silk-worm in England.

The value attached to all articles of manufactured silk, and the large sums yearly paid by the merchants and manufacturers of this country for the raw material, have led to repeated attempts at its culture in England, and although the origin of the silk-worm is connected with the sunny regions of the East, and its rearing has been carried to such perfection in the congenial soil of Piedmont, yet facts generally, and especially Mr. Houldsworth's banner, seem to indicate the possibility of its addition to the products of England.

The story of the two Nestorian monks of Persia who volunteered its introduction into the dominions of the Emperor Justinian, and the concealment of the eggs in their bamboo canes, has thrown an air of romance over the first appearance of this insect within the confines of Europe. With this introduc-

tion the monks brought the still more useful knowledge of the art of manufacturing the silk into articles of custom and luxury; and this branch of trade has since become a source of employment to the inhabitants of Italy as well as of wealth to her merchants.

From such an insignificant source sprang the export in silk, which amounted in 1849 to *two hundred and forty-one thousand forty-eight pounds* to this country alone.

During the reign of James I. an attempt was made in this country to propagate the silk-worm, and in order to render our soil conducive to its production circular letters were addressed to all persons of influence to rear mulberry-trees. How generally this order was obeyed is attested by their existence to the present day in the grounds which surround the mansions of that date. This experiment, however, proved unsuccessful, and attempts were then made to introduce the silk-worm into our Transatlantic settlements, but the high rate of wages rendered the enterprise equally unfortunate.

In 1718 a company was formed which obtained the lease of Chelsea Park for 120 years, where mulberry-trees were extensively planted, and buildings erected to facilitate the rearing the silk-worm.

In 1824 another company commenced operations under the presidency of Mr. Huskisson, and for the information of the public a treatise by an Italian nobleman, Count Dandolo, on the silk-worm, was circulated under its auspices.

A similar attempt was recently made in Norwich by a few of its operatives, one of whom had just returned from Piedmont, where he had obtained an insight into the culture of the worm and the winding of its silk. Considerable progress was made in this experiment, and some of the silk was sold to the Norwich merchants; but owing to the scarcity of mulberry-trees in this neighbourhood the effort proved abortive.

The exertions of Mrs. Whitby, of Newlands, near Lymington, have proved more successful. The reasons which induced this lamented lady to undertake the culture of the silk-worm in England are detailed in the following account, presented by her to the Royal Agricultural Society of England. Mrs. Whitby says:—

"I was led to the undertaking by hearing in 1835, whilst I was travelling in the north of Italy, of an English gentleman who had doubled his capital in three years, and who received 10 per cent on that laid out on a silk establishment, near Milan, and wonder was expressed that the culture had not been tried in England, and it was difficult to find profitable work for the labourer. I determined to try to introduce the cultivation of silk. I saw the young mulberry-trees in Lombardy blown aside by the force of the north-east winds as our forest trees are here by the south-west gales. At this period a fog of thirty-three days' duration had prevailed, and the ground round Milan was covered with snow and iron-bound with frost. I knew that around Florence the nights were cold and the weather uncertain, even as late in the spring as the 1st of June.

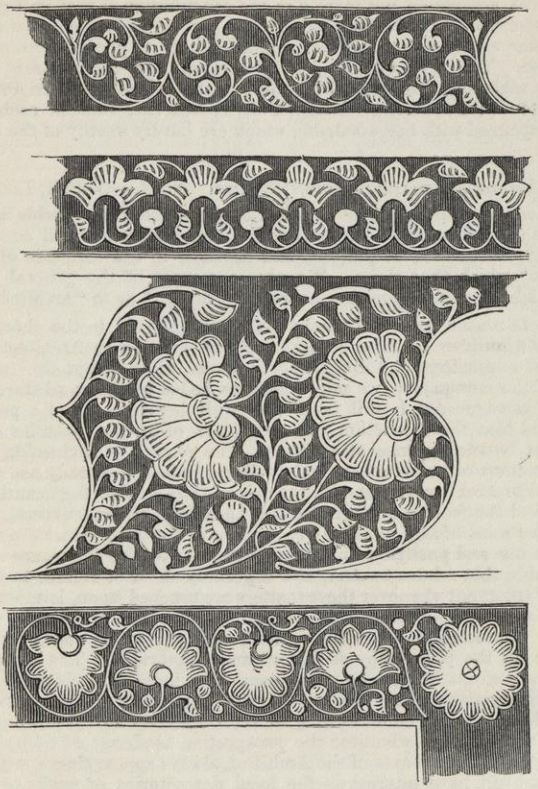
"Judging from all this that the climate of England was equally favourable to the growth of the mulberry, I ordered from a nursery-garden at Turin 100 standard trees and 1000 dwarf mulberry plants of the sort called 'Of the Philippine Islands.' This sort produces much larger leaves than the Italian wild white mulberry, or that which in England is cultivated for its fruit. Its growth is rapid, and it is easily propagated by cuttings, which strike as readily as the willow.

"My plants did not arrive in England until April, 1836. I treated them according to the directions given in Mons. Burdin's book, and I did not lose one. I even gathered leaves from them the same year. I bought half an ounce of silk-worms' eggs at Novi, which is said to produce the best silk in Italy, and thus laid the foundation of a small establishment, which I hope will be the means of spreading the culture of raw silk throughout England, and in the course of years render her independent of foreign resources in this article."

We trust that the culture of the silk-worm in England will not again decline with the death of this philanthropic lady; well-directed individual enterprise having often achieved that which a greater combination of talent and capital has failed to accomplish.

GLEANINGS FROM THE GREAT EXHIBITION OF 1851.

PATTERNS selected from the East Indian Collection, illustrative of Principles of Ornament.



Patterns from Carved Box.

Pattern from Carved Box.

WHEN our collection of the valuable hints in ornament which the Indian collection offers to manufacturers is somewhat more ample, we shall indicate some of the uses to be made of them.

Books.

KNIGHT'S CYCLOPÆDIA OF THE INDUSTRY OF ALL NATIONS.—C. Knight.

THIS useful and marvellously cheap work owes its origin to the Great Exhibition. It will be found acceptable not merely in the consultation of that vast collection, but for general reference when the Exhibition shall have passed away. No manufacturer can invest some eight shillings more profitably than in placing this volume in his counting-house. The arrangement is alphabetical, and the subjects of industry, as well as the seats and countries where the industry is practised, are entered. Thus Altimeter, Alton (Hampshire), Alto-Relievo, Altona, &c., succeed each other. We could have dispensed with the woodcuts, which are hardly worthy of the letterpress.

THE ARCHITECTURAL QUARTERLY REVIEW. No. I.—G. Bell, London.

THERE is considerable promise in this Review, making reasonable allowance for the difficulties of starting any new periodical. The conductors will certainly receive credit for the "earnestness of purpose and devotion to the interests of the art and the profession" which they claim. We give a sample of the general views of the periodical, which have an application as well to "design" as to "architecture:"—

"Were we to reason from the amount of attention paid to the characteristics of every style, the number of excellent publications relating to Architecture, and the copiousness of engravings and lithographs, or were we to accept the congratulatory paragraphs of the newspapers, we might perhaps be led to disregard the fact, that the knowledge of the true Art is still discordant with the character of a people of high civilisation, and that the conviction and perception of its real beauties is as much a blank as would be the absence of a sense. The pursuit of Archæology is popular, graphic illustrations of buildings are widely disseminated, the ready use of the pencil is not confined to Architects; but still, the power to recognise the beauties of ART in architecture, and the feeling of the important 'mission' of Art universal, have no real existence. The want of any national recognition of the high educational value, and of the humanising and purifying influence of that Art,—the ignorance of this value, and of everything that relates to ART, and especially of what relates to Architecture, displayed in Parliament whenever these matters are touched upon, is most melancholy to those who believe in something which transcends even that 'mercantile value,' which we are slowly appreciating,—a value infinite and pervading, and beyond what is dreamed of in all the philosophy of Oxford and Cambridge. The anomalous condition of educational institutions in which some knowledge of Architecture is not conveyed to future legislators, may we hope be thought worthy to enter into the consideration of those who are endeavouring to reform abuses in these ancient seats of learning;—places which—whatever the prospective tendency of thought which we would inculcate—will, in the eyes of the Architect, always appear tinged with the colour of antiquity, and will have interest as the local depositories of works of merit in the sister arts, and for their fine examples of Architecture—which stand in anomalous contrast to the condition of real ART generally, in those Universities. For, it is important that we should not confound knowledge of antiquarian remains, or the power to appreciate *drawings* and illustrations of works of art, or the knowledge of dates and the characteristics of styles, or the ability to imitate them, with real ART. Much as we should have differed with Mr. Kerr, in the limitation of the term 'Architecture,' and of the vocation of the Architect, which his able and amusing work would seem to inculcate, we yet entirely recognise the importance of a correct view of the nature of ART, and shall at all times support this with whatever weight of argument we can command.

"True ART, although difficult to define, is both distinct from and inclusive of the subjects of attention which are mistaken for it. The Architect is, of all, the last who should disregard the value of researches into the condition of Art at particular periods.

"But, he is also the last who should sink under the influence of routine. He should be open, at all times, to the consideration of premises, dissimilar and opposite to previous ones. He may learn much by analogy, from examples,—but mere antiquarianism is 'a snare.' It is not necessary that he 'should enter into the spirit of a style,' in the sense in which this phrase is, we fear, often intended to be understood, and which would fall short of what is required. It might be well if he entered into the spirit of an old style, with the object of contrasting it with other styles, and to give birth to a new spirit and a new style. But there are certain principles which are unvarying, whatever the changes in styles, and *these* we ought to grasp. Studying with any other

object, we become unworthy the name of artists. Fashions take the place of settled principles: we exalt indifferent works of the prevailing fashion, and unjustly depreciate works, only because they are of the style which we have discarded."

Miscellaneous.

Manchester School of Design.—The Report of this important School is now before us. The statement of the annual accounts published in the newspapers does not appear to be quite correct (*vide* Journal of Design, p. 148); it is sufficient, however, to remark that whereas last year the balance due to the treasurer was 227*l.* 17*s.* it is now 399*l.* 14*s.* 7*d.* The Report, as emanating from a place so important as Manchester, deserves consideration, and by glancing *seriatim* at a few of its most salient points we shall be spared the necessity of characterising it. The Report tells us "that at length the School is performing its proper functions," which implies that it never did so before. It is a fact, however, that when Mr. Wallis was head master, and before the unfortunate interference with him by the old Council and Mr. Poynter, the School in every respect was in a very far better state than it is at present. The Report would lead us to infer that at present the number of pupils stands between 200 and 300; when Mr. Wallis left in 1845 they numbered 217, with 60 waiting for admission. The debt now is just 400*l.*; in 1845 the balance was upwards of 419*l.* on the credit and not the debtor side of the account: and we do not hesitate to say that the teaching was far better than at present,—modest and unpretentious—the master zealous in the progress of his School, and not seeking self-glorification or making ridiculous assumptions of title to office; contented with a lower salary than is at present given, and not incessantly querulous at his unrequited services. Now it seems that the head master of the Manchester School of Design is ashamed of the title of his predecessors, and of one which Mr. Herbert, R.A., Mr. Redgrave, R.A., and Mr. Dyce, R.A., thought it no discredit to have. The schoolmaster at Manchester is "the newly-appointed Principal," "a man equal to an emergency," "the Principal, whose School at Nottingham had been an exception to the inertia that prevailed in the majority of these institutions throughout the kingdom,"—in fact, so much does the "Principal" occur throughout the Report that it may be doubted if the Council could ever have read it before it was published. The Report tells us that the "education imparted is of a very high, and, pecuniarily speaking, of a very valuable character;" "not superficial, tricky, or mannered, but founded on real knowledge of the principles of art well directed to practical ends. Fortunately this is not an opinion that can be attributed to local predilection or conceit"—which the world must be glad to know, or it might fall into the mistake of thinking so. In flower-drawing the Manchester School "even rivals the Metropolitan School itself," especially in the works of "students more immediately under the eye of the *Principal*." It will be admitted that a fair test of the accuracy of all this would be afforded in some actual work of the "Principal" himself. By this we may learn what he at least considers "very high," "not superficial, tricky," &c. If our readers will go to the Exhibition in Hyde Park they will discover the practical culminating point of all this verbiage to be a set of designs executed by the "Principal," intended by him to be an example of the "geometric" treatment of ornament, but, in truth, like nothing else than a set of dull, ugly patterns elaborated into a patchwork bed-quilt! No doubt the "Principal" was very unconscious that whilst affecting to be proving what designs ought to be, he was merely executing what any venerable lady would do a great deal better. The "Principal's" interpretations of geometric treatment simply are those turns of the compass which little boys are so fond of making! It seems to be implied that this triumph of the "Principal" is among those things which are to be considered as one of the "duties for which he was in no ways bound by his engagements"—for which he received "no adequate remuneration"—one of the "many and great sacrifices which it would be in vain to attempt to enumerate"—the result "of unrequited labour in private"—a "proof of rare zeal" and "ill-paid labour"—a donation "of thought, energy, valuable time, and labour," which demands more gratitude than "pecuniary donations." This patchwork bed-quilt must be taken as the emblem of that instruction which "distinguishes this School of Design from a mere drawing academy, and confers on it a *collegiate* character!" The Report tells us that to promote such wonderful

results as those demonstrated in the "Principal's" patchwork bed-quilt, "the Council has it in contemplation to institute Honorary Professorships," "to establish an annual bursary," explained to be "a sum of money sufficient to enable the student to visit the Continental Schools of Design," and, of course, "*adequately to reward its teachers!*" Still the voice of the horse-leech, "Give! Give!" That the sensible manufacturers of Manchester can be taken in with all this insufferable emptiness and conceit, and that they will silently bear the taunts in the Report at the shabbiness of their subscriptions, and the inadequate remuneration of drawing-masters who already receive 300*l.* a-year and more, we should say was impossible. That the School can really flourish under such a system is equally impossible, and sure to be manifested in due course.

North London School of Drawing and Modelling.—The first annual report of this School is, on the whole, satisfactory, and affords hopeful prospects that the School may become an established institution. There seems no lack of zeal on the part of Mr. Cave Thomas, the head master, and the sub-committee of management. At the outset the number of pupils attending were 200, but, owing "to the excessive demand for labour in all decorative trades in the autumn and winter," they declined to 66, but have steadily increased again. The finances have been prudently managed, and the balance is on the right side even in the first year of starting: 110*l.* 3*s.* 6*d.* arose from subscriptions, and 110*l.* 17*s.* from students' fees. The exhibition of art and manufactures did not pay its expenses, but a second attempt, being better known, would probably do so.

Proposal for Establishing in the Metropolis a School of Art for Artist-Workmen.—We have received from Mr. Bruce Allen a prospectus in which this intention is thus detailed:—The Exhibition of the Industry of all Nations has placed before the eyes of the public the combined productions of the artist and the workman; and it will be found to shew, that not only is the art of design in a most crude and unsettled state, but that the power to carry out the ideas of the artist by the workman is almost wholly wanting. A careful study of many of the objects exhibited will render this apparent, by simply considering the intention (that is, not the mere idea of a building or other work of art as existing in the mind of the artist, but what it would be if perfectly executed according to any given representation) of the artist; and then to examine how that intention has been carried out by the workman. A careful and judicious observer will soon see the short-coming. Every day's observation and experience confirms what is thus so forcibly placed before us,—as when we see the intention of the architect in a building, and the mode in which that building is executed,—or, we may compare the workmanship of the present day with that of the times of the three Edwards, or of Inigo Jones, or Christopher Wren. The masterly idea of the Palace of Westminster is without doubt equal to the Chapel of Henry the Seventh; but a careful comparison of the workmanship in stone, and wood, and metal, in them, will be found to confirm the statement, that the workman of the present day is wholly unable to appreciate and carry out the idea of the artist. The object now proposed, with a view to remedying this short-coming is, to commence a model establishment to be called "A School of Art for Artist-Workmen," having for its purpose the instruction and guidance of the mind of the workman through his hand. The mode of accomplishing this is proposed to be by the daily attendance of the artist-workman at convenient and stated hours at the school; where he will be required to make copies, in stone or other material according to his trade, of some well-known and approved model. He will commence with some very simple object, comprehending but few parts, as (supposing him to be a carver in stone) the vermiculations in a quoin stone, or a leaf or flower by Gibbons from St. Paul's, or some simple foliage from one of our cathedrals or churches,—where it is found as the artist of old left it. He will repeat this again and again till his carving evinces that he begins to appreciate the work before him. To aid him in this, the most striking merits of the model will be pointed out to him by the teacher; and when finished his short-coming or his success fully explained. He will be required to proceed in this way from the most simple to the more difficult, and till he is found to have so far educated his eye as to be able to see for himself how near he is to his model. When thus far advanced, the teacher will point out to him, step by step, the principles which guided the artist in the production of the original work, (for the true artist will always be found to have obeyed the laws which govern his art, although he may not have known them; just in the same way as a correct speaker is found to follow the rules of grammar although ignorant of them;) for his mind will be then, but not till then, in a fit

state to receive such information. By this means the mind of the workman will be roused to a consciousness of its uses and powers, and he will in no long time discover that however ably and readily his hand moves, the constant and intelligent workings of his mind will assist it, and convert what is now but too often a toil—a going on in dull mechanism, and ending in dead matter—into pleasure and delight. To render such tasks as little wearisome as possible, and to encourage the student to do his best, it is proposed in all cases where practicable to so apportion the work, and to provide such models to be copied, as shall when completed be capable of being put together, and so form a complete thing in itself. Thus, a number of wood-carvers would be set to make up between them any certain object, as a church-chest, each one having a panel or portion of a panel to complete: one or more smiths at the same time making the hinges and locks. It would also be a part of the plan, as in the Schools of Design, to have a yearly exhibition of the works completed; and at the end of such exhibition, these works to be disposed of and the money equally divided among the students, according to each one's share in the labour. A great advantage would obviously arise from such an arrangement, as the artist-workman would never feel as if wasting his time, in mere learning, each step taken being not only a step forward in knowledge, but, like his necessary daily labour profitable. It is also contemplated to form a collection of casts from the finest examples of decorative sculpture. It is proposed to have both morning and evening classes, with a uniform rate, as low as will cover the expenses, and that the School shall be first established in Westminster, as soon as fifty students shall have entered their names.—This plan resembles that proposed by the Society of Arts some months since, the progress of which has been arrested by the Great Exhibition.

Museums of Manufactures.—A first and very important step in this direction has just been taken by the Commissioners for the Exhibition of 1851. The Executive Committee have issued a circular in which they state that the Commissioners have had under their consideration several suggestions to form and preserve a record of those articles in the Exhibition which are calculated to be of use for future consultation, and having regard to the public advantages which would be likely to arise from forming such a record, have authorised the Executive Committee to make preparations for carrying the proposal into effect, and to collect actual specimens of certain of the materials and fabrics themselves exhibited, so far as it may be possible, and where not possible to obtain accurate representations of them. Before entering into communication with each exhibitor, and seeking his co-operation in forming this collection, the Executive Committee consider it proper to state generally some of the uses which it is conceived would result from it. It will be obvious, that the verbal description of the objects exhibited, which forms the Catalogue, will perpetuate the Exhibition in a very imperfect way, and although diagrams and pictorial representations of the objects afford a partial remedy, they cannot be compared with specimens of the objects themselves, for conveying an accurate idea of them. It therefore follows, that records of the articles exhibited can only be obtained by means of specimens of them; and it is now proposed to adopt this principle, as far as it may be practicable, and thus register, in the most unmistakeable form, for the use of after ages, the discoveries and uses of various materials, and shew the progress which human industry had made in the present year, so far as it was developed in the Exhibition. The collection will serve as a valuable means of reference for commercial, scientific, and artistic purposes; it will enable a strictly philosophical classification of the objects to be made, and render a comparison of them easy, which was unattainable in the present geographical arrangement of the Exhibition. Any successful realisation of the proposed plan must depend upon the co-operation of the exhibitors, and their appreciation of its uses. A merchant, importer, or manufacturer, will easily understand the advantage which he would derive from the existence of a systematic collection, always accessible, of specimens of any given kind of raw materials or manufactures, when he had occasion to consult them. It may, therefore, be expected that the interest of each exhibitor will induce him to aid in forming the proposed collection, by presenting, as far as practicable, specimens of the materials or fabrics which he is exhibiting. Every exhibitor hitherto consulted on this subject has cordially welcomed the proposal, and has promised every assistance in carrying it into effect, by freely contributing both actual specimens, and every information concerning them which may be desired. In forming the collection, different kinds of treatment will have to be adopted towards the various classes of articles. In respect of the department of Raw Materials, constituting the four first classes of the Exhibition, it will be

desirable to collect specimens of the actual articles themselves, and exhibitors will be requested to place small duplicate specimens at the disposal of the Commissioners. But this principle, for reasons of cost, size, &c., will not apply as a general rule to machinery, and articles of cubical bulk, such as metal manufactures, furniture, pottery, sculpture, &c. It is proposed to obtain a record of these, with the permission of the exhibitors, where it may be desirable to have it, by means either of accurate drawings or Talbotypes. Those cases where the representation of the article is preferred to the article itself, will be hereafter pointed out. As respects the remaining classes of the Exhibition, such as all kinds of woven fabrics, in cotton, wool, flax, silk, &c., all felted and laid fabrics, paper-hangings, leathers, &c. it is proposed to collect duplicate specimens of the articles themselves. It is also intended to collect all priced lists, trade catalogues, circulars, and prospectuses prepared by the exhibitors, and to bind them in classes. Her Majesty's Commissioners intend that this collection shall be turned to the greatest public use; and they think that, when formed, it will occupy only the space of a moderate-sized room.

EXHIBITION OF 1851.—The daily receipts at doors since our last report, up to 19th July, 1851, have been as follows:—

	Amount.			Rate.	
	£101,058	5	6	*s.*	*d.*
June 23	3016	11	6 ..	1	0
24	3186	12	0 ..	1	0
25	2691	14	0 ..	1	0
26	2722	10	0 ..	1	0
27	2969	6	0 ..	2	6
28	1590	16	0 ..	5	0
30	2469	16	6 ..	1	0
July 1	2429	10	0 ..	1	0
2	2363	18	0 ..	1	0
3	2651	19	0 ..	1	0
4	2592	2	6 ..	2	6
5	1565	15	0 ..	5	0
7	2852	2	0 ..	1	0
8	3169	5	0 ..	1	0
9	2710	6	0 ..	1	0
10	2958	0	0 ..	1	0
11	3145	17	6 ..	2	6
12	1589	15	0 ..	5	0
14	2957	8	0 ..	1	0
15	3502	1	0 ..	1	0
16	2910	4	0 ..	1	0
17	3023	5	0 ..	1	0
18	3762	7	6 ..	2	6
19	1360	15	0 ..	5	0
The total	£165,250	2	0		

The amount received for season tickets has been 66,608*l.* 17*s.*, making the total receipts at the doors 231,858*l.* 19*s.*: adding to this sum the receipts from subscriptions, &c., the total exceeds 300,000*l.* The weekly report of numbers of visitors is as follows:—

Already reported to June 21	1,522,310
9th week, June 23 to 28	292,709
10th week, June 30 to 5 July	246,739
11th week, July 7 to 12..	288,427
12th week, July 14 to 19.	305,853
Total number of visitors	2,656,038

The JURIES OF THE EXHIBITION have virtually terminated their labours and made their awards, but the reports are not all presented. We believe that the general result will be found to be, that comparatively very few great medals will have been conferred, whilst the distribution of the prize medals will have been liberal. This was obviously the common-sense way of getting rid of what threatened to be a great difficulty. With our present experience, it is evident that prizes were quite unnecessary, and that if the Exhibition had to be repeated, they would not be offered again. Now-a-days, the world will not recognise a pope in taste or manufactures any more than in religion, and with our present feelings of independence, an angel from heaven would not be acknowledged as an impartial distributor of prizes. At one stage of these awards it was apprehended that the French, who certainly did not keep the matter as secret as they ought, would have tried to make the quantity of great medals a source of national struggle; but happily that phase of difficulty passed away, and the firmness of the chairmen in adhering to the Commissioners' decision that *individual* competition should be avoided, at last brought matters right. And it may be hoped, that, on the whole, the awards, if they do not give great satisfaction, will at least not give great dissatisfaction. Excepting in the case of the agricultural implements, the awards will not be made known until the close of the Exhibition, when the distribution will take place. The labour of the juries has been immense and generally conscientious.

WILL THE CRYSTAL PALACE BE KEPT? is a question now largely discussed throughout the country, and has brought many pamphlets into existence. At present public feeling seems to take but one direction, for the opposition of the residents in the neighbourhood of the Palace cannot be considered as anything but a selfish apprehension, and not reflecting any phase of *public* wishes. Mr. Paxton guarantees that the

Palace will make a delectable winter garden; "Denarius" shews that it may be self-supporting, and that it should comprehend sculpture and be available possibly for other purposes; Signor Gambardella would have it for a picture and sculpture gallery; "Greville" opposes its standing chiefly on the "Prince's Gate" feeling; "A Medical Man" proves how it would promote public health; the *Times*, *Chronicle*, *Daily News*, *Advertiser*, and even the *Morning Post*, advocate its retention; petitions have been sent from all parts of the country and the Metropolis praying that it may be kept. Under these circumstances, it is to be expected that the Government will at least hesitate to take it down, until the experiment of a winter garden has been fairly tried. The pith of all the discussions favourable to keeping it is given in the following answers which have been generally circulated:—"Reasons for converting the Crystal Palace into a Winter Garden:—1. Because it would enable the many to have what the few always have when possible, namely, rare shrubs, plants and flowers, at all seasons and all weathers; the enjoyment of a conservatory in a park; and greatly promote the public use of Hyde Park. 2. Because it would tend greatly to increase the knowledge of botanical and agricultural science, and thus especially help to enlarge the minds of the agricultural population. 3. Because it would encourage the introduction of new and valuable vegetable products from all parts of the world, and thus benefit our manufactures. 4. Because it would diffuse increased knowledge of the beauties of creation and the wisdom of Divine Providence, and thus help to wean us from grosser pursuits, and make us wiser and better. 5. Because it would encourage exercise in purer and fresher atmosphere, and thus improve health, make life longer, and more enjoyable. 6. Because it would be a source of comfort and enjoyment to the sick and weakly. 7. Because it would afford a useful experiment in a novel mode of construction, calculated to have a very beneficial effect on building and architectural art generally. 8. Because it would supply the great public want existing of a hall of sculpture, and thus encourage the appreciation of that neglected art. 9. Because it might be made to assist in general education, and many useful purposes, without any charge on the public revenues of the country. 10. Because it would offer numerous useful suggestions by which social arrangements and occupations might be carried on independent of the vicissitudes of climate. 11. Because it would be illogical to take down a beautiful and popular glass house appropriate to the site under the conditions of an agreement made to take down an unpopular brick one inappropriate to the site. 12. Because it would be following the letter and not the spirit of a rash engagement, which the public compelled the Commissioners to make with it under different circumstances. 13. Because the continuance of the building would increase the value of property in the neighbourhood. 14. Because it would preserve a building applicable for future exhibitions. 15. Because it would be the surrender of all these advantages at a loss of upwards of 100,000*l*."

Commercial Results of the Exhibition.—On all sides we are glad to hear that Exhibitors in the Crystal Palace, who have exerted themselves to shew their ability, are likely to be well satisfied with the commercial results of the Exhibition. The Coalbrookdale Iron Company have sold their remarkable gates for 1500*l*., and, if report speaks correctly, have received orders for other copies of them. Her Majesty also has rewarded their spirited first experiments in bronze casting by the purchase of Bell's Andromeda, with its pedestal. Messrs. Winfield have made many sales, a chandelier to Prince Albert and candelabra to the Prince of Prussia, &c. Messrs. Bacchus, Richardson, and Pellatt, have all received substantial public approval of their efforts in glass manufacture. Messrs. Minton send their dessert service to Austria by order of Her Majesty. In fact, all our most eminent manufacturers, as well of ornamental as of useful fabrics, are receiving ample proof of the virtue of the Exhibition and its practical use to them.

Schools of Design are about to be established at last at Stourbridge, Macclesfield, and it is said at Limerick. We caution the manufacturers in those places not to expect that, although called Schools of "Design," they can be anything more than drawing and modelling schools. As such they will be useful and deserving of encouragement.

The growth and prosperity of Manchester are strikingly shewn in Captain Willis's annual report and police statistics, just published. From one of its numerous elaborate tables it appears that the present number of cotton-mills in this borough is 103, and there are 7 silk-mills, 3 worsted-mills, 18 small-ware (cotton) mills, 7 print-works, 35 dye-works, 775 other workshops, and 1619 warehouses, of which the number of new

buildings erected within the year were as follows:—2 cotton-mills, 21 workshops, and 11 warehouses; and 4 cotton-mills, 4 print and dye works, and 2 warehouses, have been employed. The population has increased from 235,507 in 1841, to 303,358 in the present year; and the annual value of property from 841,064*l.* to 1,204,241*l.* This report is to the 1st of January, and on inquiry it appears, that at the present time the number of mills being built and enlarged is greater than last year, and fully in proportion to previous and more prosperous years.

Marble Paste.—Messrs. Skinner and Walley, of Stockton, have recently patented a new kind of ware, which they have designated as vitreous, white and coloured marble paste. The compound is of different degrees of hardness, according to the use to which it is intended to be applied, but in its lowest state of vitrification is impervious to water. It is compose of three parts chalk, two of ball clay, two of flint, three of china clay, and two of Cornwall stone; when fired a highly glazed surface is produced, which may be of any desired colour. When exposed in the oven the body is not subject to crack. The specimens which we have inspected have two or more colours on one surface, and being part and parcel of the body itself, and formed with it, the surface is not likely to peel off. The body being vitrified, can be washed and cleaned readily; but owing to the softness of the body when in the fire, it is inapplicable to the construction of vessels of capacity; it is, therefore, intended to be applied to wall mosaics, street decorations, slabs for fronting buildings, botanical labels, garden numbers, street designations, &c. It is stated to be peculiarly a non-electric, and is therefore deserving of the attention of the electrical engineer.

Articles of Utility from Nineveh.—Some additional antiquities from Nineveh have arrived at the British Museum. A great variety of new and interesting objects have been brought to light, chiefly connected with the domestic economy and customs of the ancient Assyrians. They principally consist of instruments and vessels of bronze and earthenware, several in a very perfect state of preservation, others thickly encrusted with rust and broken to fragments. There are bowls and vases, many richly chased; some dozens of earthenware studs of different shapes, supposed to be for harness; a very perfect bronze wine-strainer, similar to those in use at the present day; the hinges of the gates of the palace; legs and feet of chairs; a curious mask of iron or bronze; richly ornamented handles of various kinds; a large wheel, or the bronze casting of it, broken into many pieces; one or two small glass vases of very beautiful colours; a quantity of cylinders about an inch and a half in length, carved or inscribed, one or two of them of a substance resembling plumbago both in appearance and weight, but the greater part of them of earthenware. Manufacturers visiting the metropolis should not lose the opportunity of inspecting them.

The Purity of the Water employed in Dyeing.—The purity of the water employed in dyeing operations is a subject which deserves the especial attention of the practical dyer. The finest colours are in almost all cases obtained by making use of distilled water, that being free from all earthy impurities. Rain-water and the water of an Artesian well are, in general, better adapted for dyeing than spring water and river water, as the latter contain in solution a quantity of lime, which sometimes falls down in combination with the colouring matter as an insoluble precipitate, occasioning a considerable loss of dye-stuff. Spring and river water also generally contain a sensible quantity of iron, which always communicates a brown tinge to the goods washed in such waters.—*Parnell's Dyeing and Calico-Printing.*

END OF VOL. V.

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SATIN-DAMASK BLOCK PAPER,

IN THREE COLOURS,

Manufactured by

Messrs. Hinchliff and Co., Wardour Street, and Whitelands, Chelsea.

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