them, are recognised by the house and judged worthy of bearing its mark. By means of a little apparatus in silver, maintained at a heat of about 212° F., they impress the word "Clichy," and the wax candle goes to the packing room with its fellows, or, if it present an unusual degree of perfection, it is judged worthy of being decorated. The idea of decorating the wax candle, in ornamenting it with paintings, escutcheons and figures, is an elegant and graceful invention, that the proprietor of the manufactory, M. Casinberche, has developed with the same certainty of purpose which distinguishes all his enterprises. Nothing in the world is more unseemly than to see in rich candelabra with costly carvings, or even in small delicate porcelain candlesticks, finely painted, thick ugly candles, very unjustly called wax candles, yellowish and dropping grease, with a shrivelled-up wick, emitting with an unpleasant smoke an insipid and repulsive odour.

Exaggerating the contrary idea, the manufactory of Clichy has had the foolish prodigality to paint on the wax candles some *chefs d'œuvre*, signed by the best names of the manufactory of Sèvres: the ever-to-be-regretted Mme. Laurent, and other artists of talent, have executed charming subjects on stearine. But we must not forget that the ornamental painting has its laws. Execute on the wax candle ornaments of every kind—flowers, birds, chimeras, but do not trace portraits thereon. Nothing could be more tasteful—nothing more simple and more natural than to have on the wax candle of which you make use your armorial bearings, if you have inherited them from your ancestors—your figure when you can draw one, or, at least, choose it well. This kind of ornamenting is still expensive, but researches actively and cleverly conducted will soon lead to a reduction in the cost, which will generalise the custom in every house priding itself on elegance.

We cannot leave the Clichy manufactory without complimenting its young director, M. Léon Droux, who has organised an establishment so important, so industriously carried on, without false luxury, without any falsely-speculated expense; economising on the constructions, and laying out money for the machines and apparatus. We shall encourage him to persist in this undertaking, and, above all, to maintain, unspotted, the rising reputation of the distinguishing mark of his house.

PAPER.

Any fibrous vegetable or animal substance may be manufactured into paper. Cotton and linen rags are now chiefly employed for this purpose, because they are more easily and cheaply converted into pulp, and furnish a better article when finished than other fibrous materials. But the comparatively high price of rags, and the enormous and constantly increasing demand for cheap paper, have lately compelled manufacturers to turn their attention to other sources of supply. At present, it may be useful and interesting to review the efforts which have been made from time to time, during the last century and a half, to manufacture paper from the fibres of different species of vegetable substances.

Down to the beginning of the eighteenth century, cotton, flax, and hemp were the only materials, except rags, used in this manufacture. In 1719, Réaumûr published an essay, in which he desired some one to make the experiment of producing paper from wood. The idea was suggested to his mind by his observing that the fabric of wasps' nests was procured from wood. The same idea was revived in 1734, by Seba, a Flemish writer on natural history, who directed attention especially to seaweed, Muscovy mats, and similar substances. It was not, however, until A.D. 1751 that any experiments were made to find a substitute for cotton and linen rags. In that year, M. Guettard, in France, published the results of his experiments upon the bark, leaves, wood, &c., of different plants, shrubs, and trees. Five years later (1756), on account of the scarcity of rags, the German paper-makers attempted to use straw, and a treatise was published upon the method of reducing vegetables into pulp, and bleaching it. In A.D. 1765, Jacob Christian Schaffers, of Ratisbon, published a work, in octavo, containing specimens of different sorts of paper made without the use of rags, among which were the *cotton du peuplier*, hornets' nests, sawdust, moss, beech, willow, aspen, mulberry, clematite, and pine; hop-vines, the peelings of grape-vines, hemp, the leaves of aloes, lily of the valley, arroche, moth-wort, *masse d'eau*, barley straw, cabbage stumps, thistle stalks, burdock, conferva, wheat straw, broom corn, and Bavarian peat. Seven years later (in 1772), the same inventor published a book containing upwards of sixty specimens of paper, made of different materials, the result of his own experiments. A copy of this remarkable book is in the Smithsonian Institution Library, at Washington, U. S. The success of Schaffers, and the scarcity of rags, probably led other inventors to make experiments; for we find that, in 1776, a volume was printed in France upon white paper made from the bark of the linden or basswood, and at the end of it there were about twenty specimens, made from as many different kinds of vegetables. Shortly after this time, experiments were made at the manufactory of M. Leorier, at Bruges, Belgium, upon many vegetables, but without finding any substance that could be converted into good paper as cheaply as rags. The results of these experiments were given to the world in the works of the Marquis de Villette, printed in London A.D.1786, on paper made of marsh-mallow, and at the end are specimens, in single leaves, of paper made of the nettle, hops, moss, reed, couch grass, three species of conferva, spindle trees, wayfaring tree, elm, lime, two kinds of willow, poplar, oak, burdock, coltsfoot, and thistle. In 1788, Mr. Greaves, of Warrington, made paper from the bark and leaves of willow twigs; and in the same year a French manufacturer obtained a silver medal from the Society of Arts for paper made from the bark of the sallow tree. He used about 600 lbs. of bark for the production of 44 quires. In 1790, Samuel Hooper, of London, made paper from leather cuttings and refuse paper. In 1800, the first useful paper made entirely from straw was used in a book printed by Burton, of London, and containing an historical account of the different materials used, from the earliest times to the invention of paper, for conveying ideas and perpetuating the remembrance of events. A copy of this work was presented by the Marquis of Salisbury to King