As is too often the case with chemical patents, its descriptions are vague and incompatible with the definite laws of chemistry. Thus it is not immaterial whether we employ the same amount of acid (of what strength?) with the same quantity of chlorate of potassa, soda, lime, or baryta, or with the chlorides of the same bases. Probably the chloride of lime is the only compound that can be employed economically; and in this case, if, as the patentee directs, the acid, which is twice as much as necessary, be poured first into the solution of the chloride, a considerable amount of chlorous or bleaching material will be lost. It would be advisable either to dissolve the chloride in two or more gallons of cold water and then add the acid previously diluted with three or more gallons of water, or to add the clearly drawn off solution of chloride to the water over the animal substances, and then to add the acid diluted largely with water. In either case, a bleaching liquor will be obtained which will act more uniformly and for a greater length of time without being exhausted.

The successive extraction of gelatine by water at low and increasing temperatures is worthy of notice, although not novel, but in this case the later solutions should be employed for gelatine of decreasing qualities.

On the Preparation of Aluminous Mordants. By JAMES C. BOOTH
and M. H. BOYE.

Whatever relates to improvements in dyeing and cloth printing being of high importance, we have thought it worth calling attention to the above subject from the appearance of two patents, the one taken out in England by R. Hervey, (Rep. Pat. Inv., December 1841,) and the other in this country, (Jour. Frank. Inst. March, 1842.) They are worthy of consideration from the comparative cheapness with which the aluminous mordants may be prepared.

The most important point is the formation of sulphate of alumina by the direct action of sulphuric acid upon clay which has been calcined in a reverberatory furnace. Supposing the process to be successful, as described by the patentee, it offers great advantages, since an abundance of clay comparatively free from iron may be obtained in many districts of country, and even a portion of that iron must be rendered insoluble by calcination. In one respect the sulphate of alumina may be more advantageously employed as a mordant or color-base than the sulphate of alumina and potassa (common alum) since a given weight of it will contain a larger proportion of color-base than the same weight of alum; but, on the other hand, crystallized alum is so uniform in composition, that in its employment we operate more definitely and certainly, according to given weights, while the sulphate of alumina is difficult to be brought to a crystalline state. It is, moreover, liable to form basic salts, so that we cannot know with certainty and readiness the exact amount of alumina present in a solution of the salts. For these reasons the patentee is in error in supposing that the sulphate of alumina is superior to alum for printing, dyeing, &c.

The sulphate of alumina may be more successfully employed in the manufacture of the acetate, by means of acetate of lime or lead, for by decomposing alum perfectly, it is requisite to add a sufficient quantity of acetate to precipitate the whole of the sulphuric acid, not only that combined with alumina but also with the potassa, so that a considerable amount of the acetate is employed to no useful purpose; whereas for every proportion of the sulphate of alumina alone that is decomposed by an acetate, an equivalent quantity of acetate of alumina is formed. The most economical method is to precipitate with *acetate of lime* as long as a precipitate is formed, and then to throw down the small balance of sulphuric acid by *acetate of lead*. The second method described in the English patent, of precipitating alumina by alkali, or its soluble carbonate, and then redissolving the alumina in acetic acid, may often be practised economically, but there is then some difficulty in obtaining a liquid of uniform strength.

The remarks which have been made apply to both the American and English patents, and particularly to the latter, which is more copious. Since each of the points claimed in the patents has been the subject of previous experiments and manufacture, it appears to us that it would be a difficult matter to sustain the combination since other simple methods of removing the iron may be resorted to.

On an Uniform System of Screw Threads—communicated to the Institution of Civil Engineers, 1841. By JOSEPH WHITWORTH, Esq., Assoc. Inst. C. E.

The screw threads which form the subject of this paper, are those of bolts and screws, used in fitting up steam engines and other machinery. Great inconvenience is found to arise from the variety of threads adopted by different manufacturers. The general provision for repairs is rendered at once expensive and imperfect. The difficulty of ascertaining the exact pitch of a particular thread, especially when it is not a submultiple of the common inch measure, occasions extreme embarrassment. This evil would be completely obviated by uniformity of system, the thread becoming constant for a given diameter. The same principle would supersede the costly variety of screwing apparatus, required in many establishments, and remove the confusion and delay occasioned thereby. It would also prevent the waste of bolts and nuts which is now unavoidable. The impulse and direction given to machinery during late years have tended to increase these evils, and must ultimately lead to a change of system.

Were an uniform system adopted for marine or locomotive engines, there can be no doubt that it would be extended to engines and machinery of almost every description. Peculiar threads will, of course, be always required for particular purposes; but in screws for general use in fitting up machinery, the advantage of uniformity would be paramount to every other consideration.

It does not appear that any combined effort has been hitherto made to attain this object. As yet there is no recognized standard. This