

mode of action, if necessary, in his own words, simply observing that no black cloth will be necessary over the head of the operator whilst focusing in such a room as I have described.

And now permit me, in conclusion, to repeat my conviction that, unless some radical change is made by photographers in the construction of their glass studio and their portrait camera, the present quality of photographic portraiture, with all its glaring defects, must be considered as having reached the maximum average of excellence. Nothing better can be done, I really believe, than is now down, so long as the present style of studio and camera continue to be used; and it is only by such a complete change in these matters as I suggest that we can hope to produce photographic portraits free from the glazing defects which I have pointed out.

If I have expressed myself strongly in this paper, it is from no wish to dogmatize, but simply to call your earnest attention to what I feel to be a very important matter.

## Miscellaneous.

### Vegetable Parchment.

"A remarkable modification in vegetable fiber is effected by the action of chloride of zinc or of sulphuric acid, in consequence of which paper may be converted into a material which, in toughness and appearance, much resembles parchment, and is known under the name of 'vegetable parchment.' It is more transparent than true parchment. In order to prepare it, thin *unsized* paper is plunged for a few moments into a mixture of oil-of-vitriol with half its bulk of water, at a temperature of 60°. The paper must be quickly withdrawn and then washed, first with water, then with a weak solution of ammonia, and lastly with water again. In this process the outer surface of the fibers appears to have become converted into a glutinous substance by which the fibers are cemented together. This substance (according to Hofmann) is intermediate between cellulose and dextrin, with both of which it is isomeric; having neither acquired nor given up the elements of water, and not having entered into permanent combination with sulphuric acid. Hofmann found the toughness of this vegetable parchment to be *five times* greater than that of the paper which furnished it, and to be about *three-fourths* that of ordinary parchment. It takes ink well. Water at 212° exerts very little action upon it for several hours, but if immersed for many months in water it gradually loses its tenacity. It may be substituted for bladder, as a septum in electrolytic operations, with advantage."—*Miller's "Organic Chemistry."*

### Chloride of Barium against Boiler Incrustation.

The applicability of chloride of barium for removing and preventing boiler incrustations of sulphate of lime is not so well known as it should be. Recent experiments made in Hanover show that it may be used with advantage in many cases. Chloride of barium decomposes the sulphate of

lime present in many waters, forming chloride of lime, which remains in solution, and sulphate of barium which precipitates in the form of powder, producing a yellowish white slush at the bottom of the boiler. The chloride of barium should always be present in excess in the boiler, which is the case when no further turbidity is produced on adding some to a sample of the water. The high specific gravity of the sulphate of barium, which is double that of any lime salt, requires the use of a shovel for removing the slush, but also prevents the possibility of any of the particles being carried up by the steam. When the boiler is stopped for cleansing purposes, the water should not be entirely drawn off until cold, the slush becoming otherwise dried and hardened by the heat. The water may also be purified previous to use, time being allowed for the settling down of the turbidity. Unlike certain other chemicals frequently employed, chloride of barium has not the least injurious effect upon iron.—*Engineer.*

### Chimney Built Without a Scaffold.

We saw—says the *Shoe and Leather reporter*—something new at the patent leather manufactory of Messrs. J. H. & T. W. Davidson, at Newark, N. J. recently. They are erecting a new chimney, which will be something over 100 feet high above the level of the ground, and it is being erected *without scaffolding*; to do away with the necessity for which they have inserted at given spaces bars of iron, which form a complete ladder in the interior of the chimney. The chimney is constructed with an outer and an inner wall, thereby giving an opportunity for a more rapid escapement of heat, and preventing the cracking of the wall so liable in the old mode of construction. The bars of iron and the two walls have given all the facilities required in its construction, and all that will be needed at any time for repairs.

### An English Cure for Drunkenness.

There is a prescription in use in England for the cure of drunkenness, by which thousands are said to have been assisted in recovering themselves. The receipt came into notoriety through the efforts of John Vine Hall, commander of the Great Eastern steamship. He had fallen into such habitual drunkenness, that his most earnest efforts to reclaim himself proved unavailing. At length he sought the advice of an eminent physician who gave him a prescription which he followed faithfully for seven months, and at the end of that time had lost all desire for liquor, although he had been for many years led captive by a most debasing appetite. The receipt, which he afterwards published, and by which so many other drunkards have been assisted to reform, is as follows; Sulphate of iron, five grains; magnesia, ten grains; peppermint water, eleven drachms; spirit of nutmeg, one drachm; twice a day. This preparation acts as a tonic and stimulant, and so partially supplies the place of the accustomed liquor and prevents that absolute physical and moral prostration that follows a sudden breaking off from the use of stimulating drinks.

The gem cannot be polished without friction, nor man perfected without adversity.