the relations of the fibres, separating them in the picker, card and comb into individual units, only to recombine them in orderly and predetermined positions. The action of these mechanical processes is clearly visible and easily understood. They are developments of simple manual methods familiar to the human race from the earliest times.

But the processes of the dychouse are invisible. The colors grow in the fibre, yarn or cloth, and the processes are to day no more complicated than in the earliest times when sorcery, incantations, and the influence of good and evil spirits played important parts in the barbaric dyer's art Dyeing in the textile industry is most largely represented as an independent industry, a large number of important firms being engaged exclusively in dyeing and finishing. In the dychouse the questions of mechanical adjustment of the fibres are supplanted by the chemical questions of bleaching, cleansing and coloring.

Dyeing is pre-eminently chemistry applied to the arts. The fibre and fabric in the dyeliouse are submitted to a great range of chemical processes, involving the use of a multiplicity of simple and complex materials-materials that are the products of nature and art, some handed down to us by the experience of older times, though their discovery and earlier application are shrouded in mystery.

While the simpler chemicals are used and recognized as such by the dyer, and the dyestuffs are known by him to be definite chemical compounds, it is not common to look upon the fibre as entering directly into chemical action. Neverthe less, the fibre, while often acting as 1 simple absorbent of dyes changed from a soluble to an insoluble condition, it as often shows the behavior of a complex chemical compound with properties, especi lly in the case of wool, quite contradictory under varying conditions.

The true chemical nature of fibrous materials is still a question of research. Much is known and more is unknown. It still commands the attention of some of the most learned, investigators in textile chemistry. The dychouse is therefore interesting as being a laboratory on a large scale. There are carried out processes which are fully as elaborate, fully as delicate, and fully as important, as those of any first-class chemical manufactory. If the word dyer was not so universally adopted and understood, the word manufacturing chemist would be no misnomer.

In the dyehouse are placed materials of great value, often far advanced in manufacture and dependent on the skill of the dyer for final treatment. The dyer, therefore, looks upon his position as one of great responsibility, and the manufacturer feels that excellence of work in the dyehouse is the place upon which his reputation and profit most depends.

What is the first question the purchaser asks over the counter? Is it not as to color? Do they not demand a rockbound fastness equal to the Rocky Mountains, combined with the brilliancy of the diamond? Does not the importing tailor gravely add \$10 to the cost of a suit of clothes on account of the dye, notwithstanding the fact that often not even the wool in the grease was imported, and, notwithstanding the fact that no mill, domestic or foreign, can put as much as \$1 on to four yards of cloth in the shape of dyestuff. This shows the value the public puts on the dyer's art, although the public still complains that colors fade more to-day when worn in bright sunlight, and all conditions of weather, than did some dull fabric of our ancestors, which was carefully shielded, and packed away in trunks from harm and deterioration. Modern fabrics are made for exposure, and the severe treatment of an active, careless and energetic people.

Intrinsically modern colors are handsomer and faster and more brilliant than corresponding ones of an earlier day. The world has not lost, but gained by the passage of time. Alizarin is superior to madder, as any pure product is to its corresponding crude material. It is true that the enthusiast's dealer in Oriental rugs and fabrics asserts the superiority of the unfading vegetable dyes used in the Orient, at the same time he exhibits with pride his rug or fabric faded beyond recognition of its prime glory.

But the question of relative value of vegetable and artificial dyestuffs is one meating special and extended treatment from the pen of some expert. The main purpose of this article is to speak of the dyer as a chemist, as one to whom the fibre, the water and all materials used are chemicals to be controlled and combined for the attainment of the best results. The dyer, who gets good results at all, is, by this very fact and the intelligent use of his materials, a chemist.

It was thought at one time that the constantly increasing number of artificial dyes, combined with improvements in the preparation and purification of natural dyestuffs, as well as improved processes in the art of dyeing itself, would so simplify the work of coloring as to make it less exacting and within the capacity of men of less intelligence and training than formerly. The dycing was to be done in the future by workmen who could turn steam off and on. When we first realized that we had seventeen shades of violet, almost as many of blues and greens, numerous yellows, oranges and browns, as well as every tone of pink, scarlet and red, we thought that any shade could be easily obtained. The old dyers wrote articles showing how they got shades by long and laborious processes that now were obtained in one dip. But no, with increased facilities come increased demands. Materials and processes are used in dychouses to-day that were unknown ten years ago. Tin spirits and iron liquor are gone by, crude products have given place to refined.

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HINTS ON WEAVING.

In the manufacture of cloth by far the greatest share of good work falls upon the weaver. It is here, to a very great extent, that the profit is made. It too often happens that the yarn has been spoiled in the preparation, causing more work and less money for the weaver, perhaps for weeks, in some cases even for months.

Keep the Looms Running.—To keep the looms constantly going is the greatest point to be aimed at, and is Leneficial to both master and weaver, but it is also necessary that the cloth should be as free from faults as possible. It is to the wervers' interest, because as they are paid for the amount of cloth woyen, when the looms are stopped the weavers' earnings are stopped also—hence the necessity for keeping the looms running. In a large majority of cases the tacklers or overlookers are paid on the weavers' earn ings, and this again is another reason for keeping the shuttle moving. It is beneficial from the master's a the of view, in