

20 cents, or 150 per cent. advance over the cost of the same wool to the English manufacturer; and his comment on this condition of affairs is:—

"O wad some power the gift gie us,
To see oursels as ithers see us!
It wad frae monie a blunder free us,
And foolish notion."

—Skirts, kissing, money and carpets have been declared by Dr. Henry A. Hopkins, the germ specialist, as the great distributors of consumption. Nevertheless, carpets are not any more likely to go out of fashion than kissing.

EXTRACTING DYE FROM COTTONSEED.

A process of extracting the coloring matter from the by-products derived from the manufacture of oil from cottonseed has recently been patented in America. The patentee states that his process is designed and adapted for the treatment of the hulls or bran and the cake or solid residuum after the oil has been expressed. By this process the natural insolubility of the coloring matter, caused by the presence in said seed and by-products of oils, fatty acids, and gums is first overcome. This is accomplished by treating the material with the vapor of a liquid hydrocarbon, such as naphtha, by placing the material either in bulk or, if bran in its original bales, in a suitable digester with which a hydrocarbon vapor generator is connected in a circulating cycle. The vapor as produced in the generator is conveyed by the pipes of the system to the upper end or part of the digester, whence it is forced downward and through the material, dissolving the oils, fatty acids, and gums, and being itself condensed into liquid. This liquid, as it passes through the material, carries with it the dissolved oils, fatty acids, and gums into the generator. Here the hydrocarbon is again vaporized, and again passed around through the digester, the operation being continued until all of the oils, fatty acids, and gums have been dissolved, and carried away from the solid material. The generator is then disconnected from the digester and hot air forced through the latter to free the material from all traces of the hydrocarbon.

The material is then removed from the digester and subjected to treatment for the dissolving and extracting of the color. This may be accomplished in various ways, but preference is given to the following method: The bran or cake is steeped in cold water for several hours until decomposition commences, accompanied by the generating of ammoniacal gas. The macerated material is then placed in a steam extractor and subjected to the action of steam under pressure as may be practicable or desirable, that is for about two and one-half hours, until the coloring matter is practically all dissolved and taken up by the water of condensation, constituting a water extract of the color, which may then be drained away from the solid matter. Instead of subjecting the macerated material to such treatment by steam in an extractor, it may be simply boiled in an open vessel to obtain the watery extract; but this is a less efficient and satisfactory process. This water extract may be used directly as a dye, but is preferably concentrated by evaporation so as to reduce its bulk for handling, transportation, and sale, it being diluted to the required degree when it is to be used. This process, as above described, involves no saponification, and relates solely to the treatment of cottonseed material, particularly the hulls or bran, as distinguished from the pods which envelop the seeds and fibre.—Indian Textile Journal.

THE ADVANTAGES OF ELECTRIC DRIVING IN FACTORIES.

In an article dealing with the growing use of electric power in American cotton mills, in Cassier's Magazine, W. B. Smith Whaley thus sums up the advantages of the electric drive:

"The convenience of distributing power in any direction by means of electric wires must appeal to those interested in the transmission of power, to say nothing of the absence in the sub-divisions of the mill itself of friction clutches and other devices for disconnecting continuous lines of shafting. The absence of weight in transmission, due to belts, or ropes, heavy receiving pulleys, large shafting, expensive head gearing, etc., is an advantage, as well as the decreased first cost, and the subsequent decreased power consumption due to the lessening of friction. The absence of dirt, dust, lint, and other flyings that are continually brought to the bearings of the engines and which often cause heating; the assurance that incompetent employees cannot put undue strains on the transmitting shafts by injudicious tightening of belts or ropes; and the entire absence of hygrometry on ropes and belts, which produce similar results, are factors of considerable saving in power. The transmitting wires have no moving weight, and consequently entail none of these detriments. There is no change in them except electric losses, and no necessity for belt way, belt guards, or safety devices.

"The motors, which are placed overhead, do not occupy any floor space, are absolutely out of reach, afford no danger to human life, and are so proportioned as to give, according to the number installed, the greatest flexibility to the plant as a whole. No special machinery is installed for lighting the plant, as the current is taken from the generator producing the power. Temporary power for any purpose, in any portion of the plant, is easily supplied by a portable motor, which is readily tapped on any power circuit in convenient reach. These and many other advantages, from a mechanical standpoint, have been demonstrated by actual experience.

"There is a saving in the friction alone of 20 per cent. The producing capacity of the machinery operated is, in actual practice, increased about 4 per cent., due to the steadiness of this method of driving over the usual method of ropes and belts, and the more uniform speed obtained throughout the plant."

THE EVOLUTION OF MACHINERY.

It cannot be said of any kind of machinery or machine tool that it has reached the point where improvement is impossible. New machinery and better tools are being constantly added to manufacturers' lists. They come and go with increasing persistence, and what is a time and labor saver to-day is being supplemented or supplanted, without any regard to dates. Inventive genius knows no halt, and is in unbroken movement round the orbit of industrial life. It cannot be boycotted, strangled, starved or sun dried. In speed, accuracy of work and simplicity of construction we have the ideal of inventive ambition. It is only by retrospect that we see the wide difference between the old and the new. No industry has been exempt from change or the spirit of progress that is brooding over everything. It presides at the loom and the forge, and in mine and mill. In cutting lumber and fashioning iron, in stamping dies and making spoons, and from the building of a bridge to the manufacture of a pill box, the use of improved machinery and tools is everywhere visible. The machinery industry is becom-