

Jute. (*Fiber.*) The fiber of *Cochorus capsularis* and *C. olitorius*, which is used in India for making gunny-bags, matting, rope, and other coarse fabrics.

In the manufacture of fabric from this article, the jute, after being taken from the bale, is sprinkled with oil and water, spread out on a table for a day or two, and then passed between rollers to render the fibers soft and pliable. It is next passed between toothed rollers, which bring the fibers nearly parallel, arranging them into a species of ribbon or sliver, which is again passed between two rollers with finer teeth than the preceding pair. These two machines are called the *breaker-card* and the *finisher-card*. The slivers thus formed are received into cans and subjected to the action of the *drawing-frame*, which is similar in its operation to that employed in the cotton manufacture, drawing out, narrowing, and thinning the slivers. The sliver is then slightly twisted and wound upon bobbins by the *roving-machine*, and afterwards spun by a *throstle*; the throstles making from 3,000 to 4,000 revolutions per minute.

The finished yarn for the warp is wound on large hobbins in the *winding-machine*, and placed on the loom beam by the *beaming-machine*; the weft yarn is wound on the pirns of the shuttles by the *pirning-machine*. The loom and shuttle are larger and stronger than those employed for weaving cotton, the fabrics made being generally coarser.

The finest jute yarns bear the lowest numbers, while in cotton the reverse is the case.

Jute-twine is sized with glue-water, starch, tal-
low, and China clay.

Crossley's patent floor-covering has a foundation of coarse jute coated with a layer of wool, and the two united by felting. The surface is finished by printing.

In Monach's process for preparing jute as a substitute for wool, the jute or jute-yarn is boiled for two hours in a solution of caustic alkali of a gravity of 60° to 80° Twaddell. After washing, it is steeped a short time in a weak solution of sulphuric acid to neutralize the alkali, and is then washed and dried.