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MODELS OF EGYPTIAN LOOMS.

Photographs are now available of the model illustrating Egyptian textile methods discovered in an XIth dynasty tomb recently by Messrs Winlock and Burton. The model is a remarkable one and well worth a full description, but in writing this it must be remembered I am only dealing with photographs and not with the actual model, and that disarrangement of the yarn, etc., even slight, must be allowed for. For comparing the model with what we have already learnt, or are not clear about, from illustrations on the tomb walls already made public, I have chosen the illustration of the wall drawing in the tomb of Tehuti-hetep, XIIth dynasty, issued in Prof. Percy Newberry's El Bersheh, I, pl. 26, and reproduced as Fig. 11 in my Ancient Egyptian and Greek Looms; see here Fig. 1.

In Winlock and Burton's model (frontispiece and Fig. 2) there are three squatting women manipulating some raw material, probably flax, and having at their service a couple of balls of the raw material, while in front of each woman there is a small platform in shape like a truncated slice of a sphere. The three squatting women appear to be preparing the material for its being drawn upon by the three women standing in front of them. In the top left-hand corner of the Tehuti-hetep illustration can be seen two women with similar appliances, and apparently engaged in similar work, but the platform's position is reversed.
The function of the little platform is not very obvious; it may be like that of the \textit{epiveteron} or \textit{ovos} used by Greek women, but these women must have done their manipulation \textit{on top} of their instrument, while according to the Egyptian model the Egyptian women drew the material \textit{from under} their instrument—unless the articles on the model have got misplaced in transit, which I rather doubt. It is possible the little platforms may have been used to hold down the material as it was drawn upon.

Between the two sets of women there are three pots which are possibly tension pots, from which the standing women are drawing the so-prepared material, and twisting it on to a sort of distaff held in the left hand. From this the sliver (so far prepared material) is lightly spun by means of the spindle in the right hand and the thigh, the action being indicated by the raised right leg. The furthermost standing woman appears to be working with three slivers or rovings, the middle one with two, and the last or nearest woman with one only. They are, in fact, doubling (twisting, folding); in so doing are thinning out the yarn until the correct fineness is attained, and the rovings spun into finished yarn.

On the opposite wall are two women engaged in warping, that is, arranging the yarn for beaming, which is putting the so-arranged warp on to the loom. The more centrally-placed woman appears to be warping with "sisters" (yarn placed more or less side by side in contrast to doubling where two or more yarns are twisted into one). In some specimens of mummy cloths from Theban tombs, given to Bankfield Museum by Sir E. Wallis Budge, we have warp which is doubled as well as warp which is "sisters." The nearer warper is apparently working with an ordinary doubled yarn.

On the floor are two models of horizontal looms, with the two beams held in position by the usual pegs, and provided with single heddles, shed-sticks and the now well-known curve-ended beater-in. Other details are not sufficiently clear to warrant description. Prof. Garstang's discovery of a smaller model with the loom merely indicated by lines on the floor was the first to prove that the XIIth dynasty drawings of looms before the Hyksos invasion were horizontal and not vertical looms, and the present model confirms this in a striking manner. Messrs. Winlock and Burton are to be heartily congratulated on their discovery in their work for New York, which from the textile point of view is extremely interesting and important.

\textbf{H. Ling Roth.}

\textbf{DURING my stay in the Sudan (winter of 1920–21) I made some study of the very primitive methods of spinning and weaving in use there, and I gladly attempt here to answer the question put to me by Prof. Petrie on my return home—whether I had seen anything similar to the processes shown in the wonderful newly-discovered weaving model, which I had marvelled at when passing through Cairo.}

\textbf{I have seen groups of women working with just such a loom, one of their number weaving; another with her hand on the heddle rod; the third—how admirably faithful the artist of the model was!—controlling that tiresome back beam that will ride up as the web grows. I have seen women spinning with the spindle rolled on the thigh and dropped whorl uppermost; I have seen women warping in similar fashion to the two at the wall, winding the warp on the pegs one thread at a time from the spindle. While I have watched such groups of}
women, with their hair braided after the fashion of Ancient Egypt, their surroundings and belongings—mud-walled huts and courts, bedsteads, mats, and baskets—equally archaic in character, I have been seized with the emotion of Elroy Flecker's vision of the "Old Ship," and I have felt as if I saw a scene—

"of some yet older day
And, wonder, breath indrawn,
Thought I—who knows—who knows, but in that same—"

—yes, it must have been in that same way that the women of Ancient Egypt wove the linen that won them fame. How simple their tools and methods were, and yet how beautiful and good the result. When you look at the little figures in the model (Fig. 2), preparing and spinning their flax, you see why it was so good. In hand-spinning the heckled flax was put directly on the distaff, and the spinner took which fibres she liked to spin up. She could choose, the machine can't, and experts still allow that her gentleness and intelligence could produce a better

![Fig. 2. Side View of Frontispiece.](image)

thread than the violence of the spreader, the rover, and the hot water trough of the spinning machine. But where are the fine spinners of Egypt now? I cannot help thinking that a sympathetic observer among the women of the Fayum (where flax is still grown) might find much of the ancient craft still living, and give better parallels to the processes of the model than I can; striking as those I have seen in the Sudan are, they cannot be taken as exact, for they are all concerned with wool and cotton, while those of the model are to do with flax. In the absence of such observations I have been encouraged by Mr. Ling Roth to place this note on some of the processes I have seen, with his description of the model itself.

*Warp Laying.*—In the Sudan the fine hand-spun cotton warps for the pit treadle loom are laid on pegs knocked into the wall of the courtyard or house.
Models of Egyptian Looms.

The woman warping walks up and down, spindle in one hand, laying one thread from it with the other, exactly after the fashion shown in the model. One of the Bersheh figures appears also to be doing the same thing, marked X in Fig. 1.

Fig. 3 shows a usual arrangement of the pegs, the number of which, with their zig-zags, vary with its length. The warps on the wall in the model have but three pegs, so I take it that they represent the exact length of the looms. The crossing is not seen, but in the absence of a special peg (peg B in the diagram) to hold the crossing it would not be very noticeable in any case. It is an easy matter to lift so simple a warp off the pegs and slip it on the loom beams.

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![Diagram of loom pegs and warps]

**Fig. 3. Sudan Cotton Warp.**

**Fig. 4. Wooden Weaving Implements.**

The Loom.—The looms in the model are very like the horizontal two-beam looms used in the Sudan for the weaving of woollen goods such as tent cloths, blankets, fringed bags, and patterned camel girths; also by Bedouin in Egypt for very similar purposes. I recognize the four pegs planted in the hard beaten floor of court or house, the two beams laid behind them, the rod heddle, and the shed rod between it and the back beam, the long rod with its double function of shed opener and batten. Sudani women, working with clinging woollen threads, use also a sharp-pointed stick or gazelle horn to beat up with, but this would not be so necessary with flax threads. One very essential part of the Sudani loom is missing, the heddle rod supports, which are various in kind, stones, baked clay pillars, Y-shaped sticks, etc. Is it possible that the curious wooden implements lying on either side of the loom were used for this purpose? This seemed to me at first a probable suggestion, based on the absence of any support under the heddle and the presence of four wooden objects of sufficient solidity to serve the purpose, but the shape of the implements does not make
it at all convincing. They are much more like tools used in the hand to adjust something. But what is there to adjust in a loom of this class? The warp beam in the model is quite clearly fixed; was the cloth beam possibly a revolving one as some experts think is the case in the loom of the Tomb of Khnum-hotep? I could see nothing in the model to indicate this. As usual, the new discovery has raised a new problem. I have asked Prof. Petrie to republish a drawing of originals of similar implements from the Univ. Coll. collection in the hope of finding a solution (Fig. 4).

This simple type of loom has one great virtue, the warp is well stretched, but it needs a strong one, and no doubt this is the reason why so much of the ancient linen has the warp threads doubled; Sudani woollen warps are also made of doubled yarn. Another virtue is its mobility. You can pick up the whole concern, roll up the web on the beams, walk away with it and peg it down somewhere else if required. Again, and this is a point which is not without interest in considering the evolution of the Egyptian loom: you can, if you wish, weave vertically instead of horizontally on it; you have only, as the Navaho Indians do with their similar loom, to tie one of the beams to a support above instead of the floor to gain whatever it is that can be gained by the change of position. Further, the very crudity of the loom gives the weaver freedom; all textures, all patterns, are his (or hers) to create, given time and the necessary skill. To watch a primitive woman weaving on such a loom—say a Navaho woman turning out her patterned belt 10 inches per hour—or (as I have done) a Sudani woman figuring out a black-and-white camel girth, or more startling still, a Cairene weaver of intricate braids, virtuoso in colour combinations, supplementing his already elaborate set of heddles by a reversion to primitive practice, his fingers flying among the threads as a pianist’s among the keys, gives the clue to the fine work of ancient Egypt; the secret is not altogether lost, but is still revealed to the children of the world, and beauty is still won by patience and simplicity.

G. M. CROWFOOT.

[The figure on the cover is from Beni Hasan; it shows how the spinner worked with four threads and two spindles, standing on a height to allow of a long spin before winding up, and rolling the spindle on the thigh. The two pots in front belong to another spinner; the front threads are drawn from a yellow mass (Rosellini).]