A MONTHLY JOURNAL PRESENTING HELPFUL SUGGESTIONS AND NEW IDEAS AS TO THE USE OF PAPERS, INKS ENGRAVINGS, ETC.



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C. F. Whitmarsh, General Manager

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PAPYRUS AND PARCHMENT*

HE graceful water-plant whose the death that menaced him under Pharaoh's

age, there was made from its smooth green stems a material called by the same name, papyrus, a kind of crude paper, which came into universal use, and was so valuable and in such great demand that one of the kings proposed to maintain his army from the sale of this product alone. The plant was the familiar bulrush of the Nile, which grew in forestlike profusion along the banks of that mighty stream; and from its strong stems was woven the ark in which the infant Moses was hidden away "among the flags by the river's brink," and so saved from

plumy, drooping heads were cruel decree. The Egyptian papyrus was thus swayed by the breezes that the means of preserving to the world the life ruffled the waters of the Nile of the greatest lawgiver of history. It has was one of the most useful plants been equally instrumental in perpetuating the known to Egypt, in whose com- code of laws whose principles still serve as merce it long held a leading place. As early foundation for the jurisprudence of the leadas 2000 B. C., or five hundred years before ing nations of the earth, nearly four thousand Moses led the children of Israel out of bond-years after they were first promulgated to his own people, the wandering tribes in the desert.

The papyrus, a tall, smooth-stemmed reed of triangular form, grew to a height of ten or fifteen feet, and terminated in a tufted plume of leaves and flowers. Like so many plants that grow beneath the ardent skies of the tropics, it had numerous uses. It was noted especially for the soft, cellular substance found in the interior of its stems, which was a common article of food, both cooked and in its natural state. It was employed also for the making of mats, sail-cloth, cord-

age, and wearing apparel; while in Abyssinia, in whose marshes it is still to be found, boats were fashioned by weaving the stems closely together and covering them with a sort of resinous matter. At a very



Courtesy of Arthur L. Race Company, Brookline, Mass.

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early day, judging from sculptures of the removed, exposing an interior made up of fourth dynasty, Egypt made a similar use of numerous successive fiber layers, some twenty the papyrus, employing it in the construction in number. These were separated with a of light skiffs suited to the navigation of the pointed instrument, or needle, arranged side

Courtesy of Macullar-Parker Co., Boston

years, the history and literature of the world were to be written; and that fact alone was sufficient to engrave its name deeply on the thoughts and memories of men.

by side on a hard, smooth table, crossed at right angles with another set of slips placed above, and then dampened. After pressure had been applied for a number of hours, the sheets were taken out and rubbed with a piece of ivory, or with a smooth stone or shell, until the desired surface was obtained, when the process was complete, except for drying in the sun. The inner layers of the plant furnished the best product, the outer ones being coarse and suitable only for the making of cordage. Single sheets made in this way were fastened together, as many as might be required, to form the papyrus rolls, of which hundreds have been discovered in recent years. It is said that the Romans, when they undertook the manufacture of papyrus, made a great improvement in the sheets by sizing them with flour, to which a few drops of vinegar were added, and then beating the surface smooth. The Chinese, far away to the East, also learned some of the secrets of paper-making. It is believed that in early times they used silk as their basis, but later on they made the so-called rice-paper by a method similar to that employed in the manufacture of papyrus, deftly cutting a continuous slice from the pith of the papyrifera.

From the reed, and the process of manufacture through which it passed, the English language has gained a

pools and shallows of the Nile. It is believed number of words. The plant itself, called that Isaiah referred to boats of this sort when papyrus in the Latin tongue, byblos in the he spoke of the "vessels of bulrushes upon Greek, has given us the two words paper and the waters." But valuable as the papyrus bible. It is claimed further that the process of was through these manifold uses, its enduring furrowing off the different layers of the pith fame was due to an entirely different source. Bave us, through the Greek word charasso It held closely wrapped within its green stems $\chi \alpha \rho \alpha \sigma \sigma \omega$, to furrow, and the Greek and Latin the scrolls upon which, through hundreds of charta, a piece of paper, our several words chart, card, carte blanche, and, of course, the "charta" of that famous document, Magna Charta, the great sheet-anchor of English liberties. In the course of manufacture, twenty In the manufacture of this Egyptian paper, sheets of papyrus were glued together into papyrus, the outer rind of the stem was first a scapus by the glutinatorie, the first known



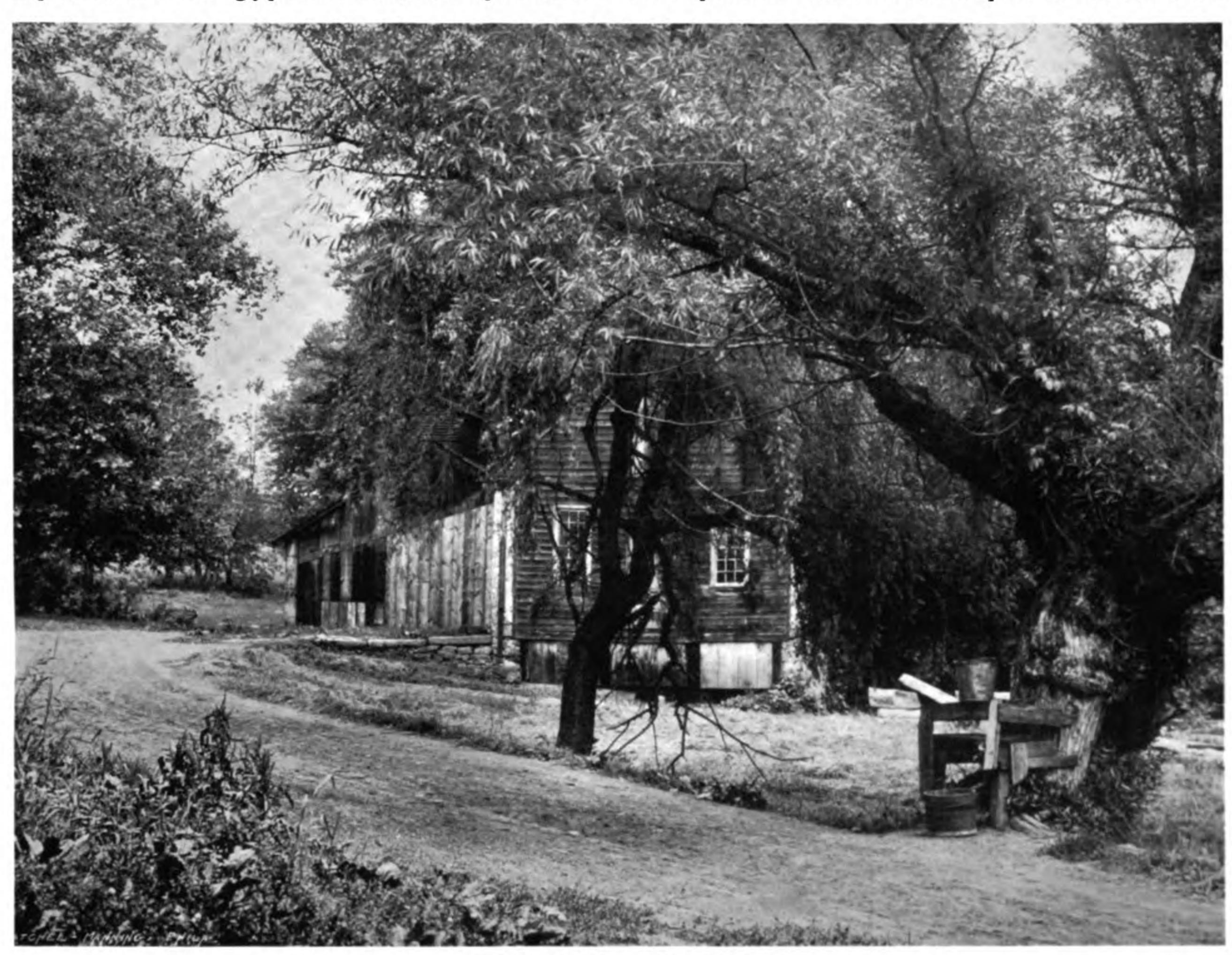
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served, which is thirty feet in length. while digging along the banks of the Nile.

become known in Europe through the French manufacture of parchment, the use of which expedition into Egypt in 1798, and specimens in diplomas and certain public documents

bookbinders, and then into a roll known as has the largest collection of ancient papyri west a volumer, from which we get our word of the Atlantic, consisting of three hundred volume. The city of Paris boasts a volumer complete pieces and hundreds of fragments, of this sort, a papyrus manuscript, well pre- which were discovered by an Arab sheik

The rolls, or papyri, are said to have Following the making of papyrus came the



A WILLOW-SHADED BYWAY Engraved by Gatchel & Manning, Philadelphia

were reproduced in print by Cadet in 1805. The extent to which it was employed may runs, the invention of the new writing matebe judged by the fact that nearly 1,800 rolls rial was due to the spirit of rivalry between were unearthed in the ruins of Herculaneum, two cities of the ancient world. Attalus, king about the year 1753. The durability of this of Pergamus, was anxious to establish in his substance added greatly to its value, and it is capital a library that would excel the splenclaimed that the ancient papyrus manuscripts did collection at Alexandria, but Egypt, havthat have been properly preserved are almost ing a monopoly of papyrus, refused to sell to as serviceable today as when first made. It him. But no monopoly of that day or this is doubtful whether a similar statement can could ever control all the means of supplying be made four thousand or even two thousand man's needs. Nature is resourceful, and man, years hence in regard to many of the books when driven by necessity, soon learns that

continues to the present time. As the story printed on nineteenth-century paper. Chicago her treasures are practically limitless. When

the supply of one article is for any reason from the skins of young calves. As early as curtailed, she furnishes something as good or 1085 B. C., the Hebrews wrote on the skins better to take its place. If all the paper in of animals, and it is believed that the Medes, the world today were owned by a monopoly at about the same period, used a substance that refused to sell, something would speedily resembling parchment, and prepared in a be found to take its place.

ployed in the making of parchment. These England for all deeds of real estate, and so

similar manner.

The skins of sheep and goats were em- For many years parchment was used in



Engraved by the Scientific Engraving Co., New York

were steeped in pits impregnated with lime, and afterward stretched upon frames, where said it took a flock of sheep to convey an their thickness was reduced by paring and acre of land or make a marriage settlement. scraping them with sharp instruments. To As the age of stone, the carved obelisk, the obtain the fine, uniform, velvety surface char- clay tablet, and other crude materials was acteristic of the best parchment, it was necessary to sprinkle the skin with chalk, and rub and polish it with fine pumice stones, which not only smoothed and softened the leather, but also improved its color. When it had been reduced to about half its original thickness, it was dried for use. Vellum, which given us to know what the future may bring still represents the acme of luxury in book- forth, but paper seems likely to hold sway binding, was made in a similar manner, until the end of time.

lengthy were these documents that it was outgrown, so was that of papyrus and parchment. With the next step forward came paper, and the improvements in its manufacture with regard to quality, variety, and increase of production, have kept pace with the varying and growing demands. It is not





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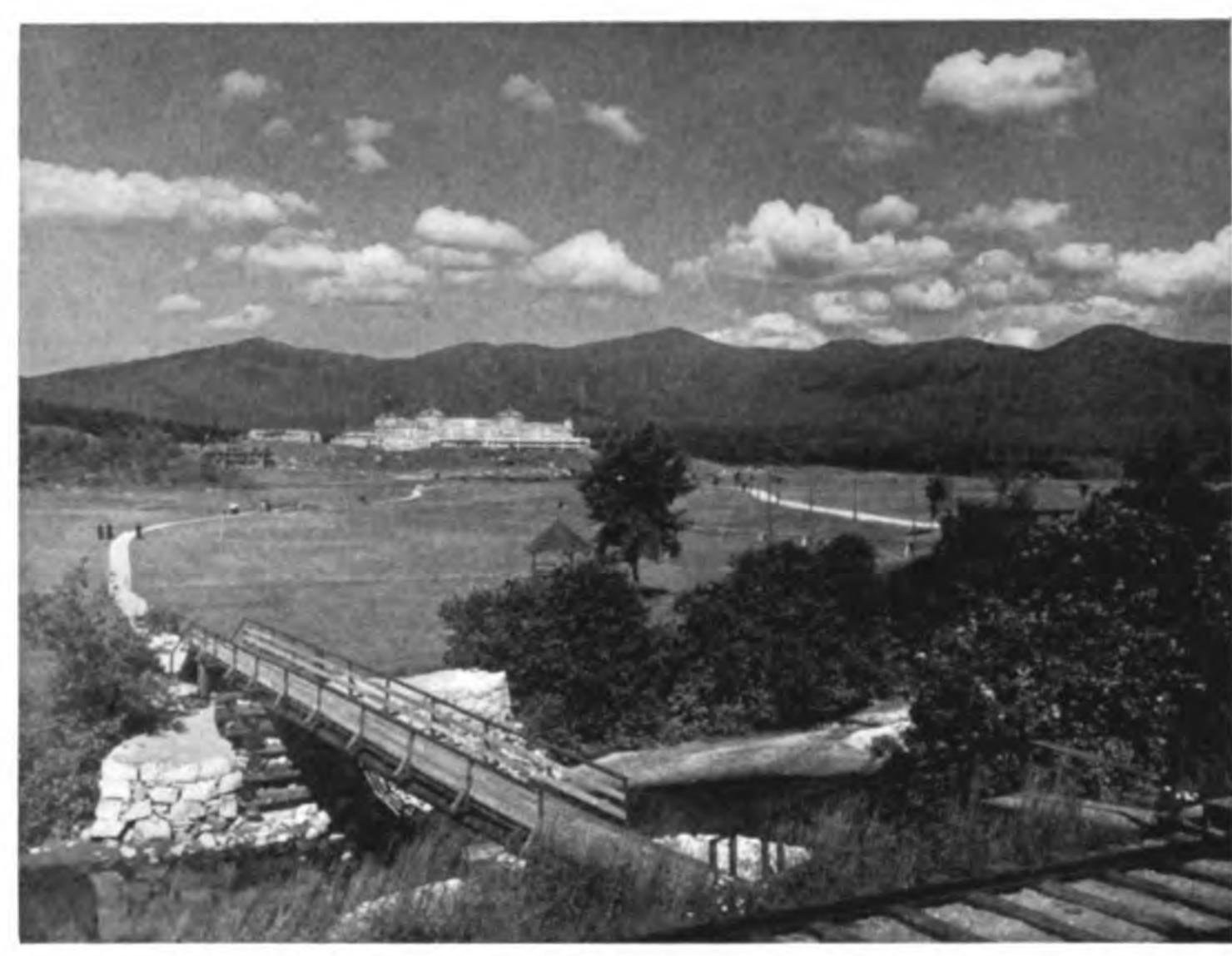
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