Professor J. Dyneley Prince has a most interesting article on the wampum records which have been preserved among the Passamaquoddy Indians. These symbols were rendered to him in the native dialect by a chief of the tribe, and this text is given, together with a translation into English. The method of memorizing is stated to have been that certain combinations of the shell beads suggested certain sentences or ideas. There were different varieties, the one referring to marriage ceremonies, another to funerals, to installations and the like. Examples of several of these are supplied.

It does not seem that wampum-belts were in use and Professor Prince did not find the strings themselves. His article is one of peculiar value on the still obscure subject of the uses of wampum and the manner in which it served mnemonic purposes.

THE SIGNIFICANCE OF THE SCALP-LOCK.

THE last number of the *Journal* of the Anthropological Institute contains an article by Miss Alice C. Fletcher on the significance of the tuft of hair or scalp-lock so common among the American Indians. It is drawn from her study of the Omaha tribe and their religious ceremonies. One of the most solemn of these is that of the first cutting of the hair of the children. The meaning of this rite was some sort of a consecration of the child to the God of Thunder, who was spoken of as 'grandfather.' The sign of the consecration was the small lock of hair left on the crown of the head and separately braided. It symbolically represented the life of the man, and from this arose the custom of scalping the enemy who was slain in battle, as his life thus passed into the power of his conqueror.

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CURRENT NOTES ON BOTANY.

THE MORPHOLOGY OF GINKGO.

THE morphology of the Ginkgo has puzzled botanists not a little, although on account of its oddity the tree has been studied by a good many investigators. Every botanist is familiar with the naked stalks usually bearing two ovules at the summit, which have been regarded quite generally as axial in nature. This is the view held by Eichler in *Die Natürlichen Pflanzenfamilien* in 1887, and the genus is assigned to a place in the Coniferae in accordance therewith. Essentially the same view was held by Sachs in his 'Text-Book,' Goebel in his 'Outlines of Classification and Special Morphology of Plants,' Strasburger in 'Coniferen und Gnetaceen,' as well as by systematic botanists generally. On the other hand, Van Tieghem in his 'Traité de Botanique' (1891) regarded the ovule-bearing stalks as foliar in nature. In a footnote in my 'Botany for High Schools and Colleges' (1880) I wrote as follows: "The morphology of the flowers of Ginkgo, as here given, is by no means satisfactory. Instead of the ovules being borne upon naked axes, it is probable that they are in reality upon foliar organs, *i. e.*, either upon modified leaves somewhat as in Cycas, or upon elongated homologues of the 'scales' of Abies. Either interpretation would necessitate a considerable change in the systematic arrangement of Taxineæ."

In the *Botanical Magazine* (of Tokyo) for February and March, 1896, Kenjiro Fujii began a discussion of the views held regarding the morphology of the flowers of Ginkgo, and completes his paper nine months later by publishing the third installment in the number for December, 1896. The paper is accompanied by a plate in which the foliar nature of the ovule-bearing stalks is proved with the greatest certainty. All gradations are shown from the slightly modified leaf, through leaves

having a pretty well developed blade and bearing one or two ovules, to the usual naked stalk bearing one or two ovules. An examination of this plate is conclusive as to the foliar nature of the structure bearing the ovules. The homology of these structures with the ovuliferous leaves of Cycas is quite evident.

The anthers, which are born in catkin-like clusters, are shown by the same writer to be borne upon much modified leaves. The so-called 'staminate catkin' is, therefore, a single stamen bearing many anthers, reminding us again of cycas, in which, however, the antheriferous leaves are broad and the anthers sessile.

THE RE-ARRANGEMENT OF THE GYMNOSPERMS.

THE 'considerable change in the systematic arrangement of Taxineæ,' referred to above, came very shortly after the publication of Fujii's paper, aided very greatly by Hirase's discovery of antherozoids in Ginkgo, and Ikeno's almost simultaneous discovery of antherozoids in Cycas, also. In the first Lieferung of the 'Nachtrag zu Teil, II.–IV.,' of the *Pflanzenfamilien* (1897) Engler suggests a new classification of gymnosperms as follows:

GYMNOSPERMÆ.

CLASS CYCADALES, fecundation by spermatozoids.
CLASS BENNETTITALES.
CLASS CORDAITALES.
CLASS GINKGOALES, fecundation by spermatozoids.
CLASS CONIFERAE, fecundation by non-ciliated sperm-nuclei.
CLASS GNETALES, fecundation by non-ciliated sperm-nuclei.

In the eighth Lieferung of the 'Nachtrag' (dated October, 1897) this is further modified as follows:

GYMNOSPERMÆ.

A. Fecundation by spermatozoids.
   CLASS CYCADALES.
   CLASS BENETTITALES (extinct).
   CLASS CORDAITALES (extinct).
   CLASS GINKGOALES.
B. Fecundation by sperm-nuclei.
   a. No true perianth.
      CLASS CONIFERAE.
   b. A perianth present.
      CLASS GNETALES.

This rearrangement brings about a good deal of confusion in the chapter relating to the conifers in the *Pflanzenfamilien*. We are now asked to rearrange that text so as to divide the class (after excluding Ginkgo) into two groups, viz.: Taxaceae (including Podocarpeae, with genera *Saxegothaea*, *Microcachrys*, *Podocarpus* and *Dacrydium*, and Taxeae with genera *Phyllocladus*, *Cephalotaxus*, *Torreya* and *Taxus*) and Pinaceae (now arranged under Araucarieae, Abietineae, Taxodieae and Cupressineae). We have thus a division of Conifers into a lower family (Taxaceae) and a higher (Pinaceae), and this is the sequence we are to recognize, while in the higher family the four tribes are arranged in a descending series.

The editor of the *Pflanzenfamilien* should issue a revision of the pages of 'Teil II.,' which deal with the gymnosperms (about 130 pages) in order that at the approaching completion of the work it will not be marred by the present patchwork arrangement.

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SCIENTIFIC NOTES AND NEWS.

THE RECENT ECLIPSE.

AT the Royal Institution on April 29th Mr. W. H. M. Christie, the Astronomer Royal, gave a discourse on 'The Recent Eclipse.'

Mr. Christie said, according to the report in the London *Times*, that he was afraid that his account of the eclipse would be somewhat imperfect, because the reports of the various observers had not yet been published, and the information he had been able to glean as to the results obtained by the parties of American, Japanese and Italian observers was somewhat meager. After the failure from bad weather, which was the fate of nearly all the expeditions in the eclipse of 1896, it was felt that every ef-