the next there is in most cases an expanse of sand several paces across, which is almost bare of pebbles. There is a tendency for the piles to assume a definite shape (see Fig. 1), namely, the shape of a very low

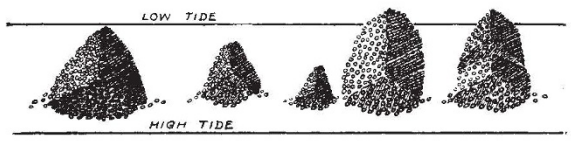

FIG. 1.—Plan.

three-sided pyramid, inclined on the beach in such a way that the landward side of the pyramid is almost level (Fig. 2). In some cases a second, smaller

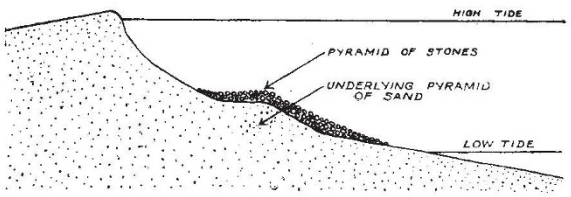

FIG. 2.—Vertical section.

pyramid has been plastered on, as it were, to the seaward side of a larger one (see right-hand side of Fig. 1). Each pile of pebbles rests on a similarly shaped accumulation of sand; and where there are no pebbles, the sand alone continues the succession of pyramids.

I erected sticks to mark the position of two adjacent well-formed pyramids, to see whether they would shift their position at all. Next day one of them was as before, while the other had shifted slightly, and a small one had arisen between them. Two days later again the two marked pyramids had *disappeared*, one completely, the other so nearly completely that I should not have guessed of its previous existence had I not marked it before.

It is perhaps significant I noticed a strong current running in a westerly direction parallel to the shore.

This curious row of low pyramids extends along the beach to the west of the mouth of the river also; but here the phenomenon is less clearly defined, for the stones are much more numerous and the pyramids are not separated by bare areas. At Tasiriki, near the south-west corner of the same island, there is a somewhat similar row of piles of pebbles.

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Manuscript Herbals.

APROPOS of the article in NATURE of Oct. 27, p. 655, on "Manuscript Herbals," Dr. Singer and others interested in the subject may like to have their attention directed to the existence in the Banksian Library (MSS. No. 63), now in the Botanical Department of the British Museum (Natural History), of a volume of water-colour drawings copied from the Codex Anicia Juliana. The interesting point about this collection is that the drawings must have been made before the transference of the Codex to Vienna, since drawings imperfect or missing from the Codex are included and complete in this series.

A full description is given in the "Catalogue of Books . . . in the British Museum (Natural History)," vol. 6, p. 271.

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I AM much interested in Mr. Woodward's reference to a copy of the "Juliana Anicia" Codex at the British Museum (Natural History) at South Kensington. The volume was unknown to me.

There are, however, quite a number of early copies of this magnificent Codex in existence. One such copy was described by Prof. Penzig of Genoa in 1904, in his "Contribuzione alla storia della botanica." There is another in the Cambridge University Library (Press mark Ee. 5. 7.). On this latter I was consulted some years ago by the late Prof. E. G. Browne. I convinced him of its true nature, and he catalogued it as an Oriental MS. of Dioscorides (Browne, 1385).

Another interesting copy, dating, perhaps, from about the year 1500, I found eighteen months ago in a miscellaneous volume of Greek texts at the Communal Library in Bologna. It contains figures derived unquestionably from the "Juliana Anicia," but so fantastically treated as to make them caricatures.

Yet another derivative of the "Juliana Anicia" is at the Bibliothèque Nationale at Paris (Gr. 2091). It is of the fifteenth century. I have directed attention to it in my article on ancient herbals in the *Journal of Hellenic Studies* (vol. 47).

The early history of the "Juliana Anicia" is unfortunately lost, but there is, I think, sufficient evidence that it was attracting the occasional attention of herbal illustrators throughout the ages. It is an extraordinary fact that the very elements of the art of independent plant representation should have entirely disappeared during the earlier Middle Ages, for at that period the interest in plants for herbal purposes was intense. Science was then, however, at its lowest ebb, and we have here, as I believe, an example of the penalty mankind must pay, in the end, in all its faculties, for the suppression or neglect of any one faculty.

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Modulation of Light Waves by High Frequency Oscillations.

THE modulation of light trains by high frequency oscillations acting on a Kerr cell has been experimentally verified by Rupp (*Zeit. für Phy.*, Bd. 47) for the thallium resonance line. The results found by him seemed to agree well with the supposition that the wave form of frequency ν could be represented by an infinite wave train which would be split up into three wave trains of frequency $\nu + T$, ν, and $\nu - T$, where T is the frequency of the high frequency oscillations. However, results found by me and described below indicate that the modulations may depend on the form of the light impulse.

In these experiments, light from an iron arc was sent through a Kerr cell with plane parallel plates containing water, and the spectra of the light after passing through the cell was photographed with a quartz spectrograph. Photographs were taken both when the Kerr cell was attached to the high frequency oscillator (of approximately one metre wave-length) and when it was disconnected. In the region of the spectrum from 2385 A. to 2400 A., which was studied in detail with a densitometer, it was found that two of the lines were shifted towards the long wave-length side by 0·1 A. when the oscillator was acting on the Kerr cell, while the other eight lines which were measured in this region showed no difference in the two cases.

If we consider a light pulse of the form

$$y = Ae^{-|ax|}\cos\frac{2\pi x}{\lambda}$$