



saline medium, which now contained a total of 3.5 gm. of the potassium salt. (Exp. No. 92 *E*. Temp. 19° C. A Leeds and Northrup Speedomax phase-motor recorder was employed.) It is concluded that potassium has negligible electromotive action in a saline medium (0.85 per cent sodium chloride). In contrast to the effects of sodium and potassium, alkaloids have extraordinary phase-boundary potentials, as we have previously described<sup>2</sup>.

In conclusion, it would appear that there is no convincing evidence for the existence of membrane potentials produced by diffusion of potassium or sodium in nerve fibres.

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- <sup>1</sup> Ling, G., and Gerard, R. W., *Nature*, **165**, 113 (1950).
- <sup>2</sup> Beutner, R., and Barnes, T. C., *Biodynamica*, **4**, 47 (1942).
- <sup>3</sup> Barnes, T. C., and Beutner, R., *Nature*, **159**, 307 (1947).
- <sup>4</sup> Ostwald, W., *Z. phys. Chem.*, **6**, 71 (1890).
- <sup>5</sup> Bernstein, J., *Pflüger's Arch.*, **92**, 521 (1902).
- <sup>6</sup> Sjostrand, F. S., *Nature*, **165**, 482 (1950).
- <sup>7</sup> Lorente de Nô, R., *J. Cell. Comp. Physiol.*, Supp. **33**, 1 (1949).
- <sup>8</sup> Brink, F., Bronk, D. W., and Larrabee, M. G., *Ann. N.Y. Acad. Sci.*, **47**, 457 (1946).
- <sup>9</sup> Barnes, T. C., *Anat. Rec.*, **99**, 618 (1947).
- <sup>10</sup> Barnes, T. C., First International Congress of Biochemistry (Cambridge) Abstracts, 200 (1949).

### Helical Fibrillar Structure of Vegetable Fibres

WE have seen the comments<sup>1</sup> of Sen and De on our note<sup>2</sup>. It seemed unnecessary to mention that the paired-variate method was used in each case in getting the standard error of the difference, the bundles used for each pair of tests (with *S*- and *Z*-twist) being obtained by dividing a sub-sample into two parts. If the results are examined in the light of this explanation, it will be seen that in the case of the breaking-load the difference between the *S*-twist and *Z*-twist results is highly significant for both samples.

The error in reading turns per inch in the breaking-twist tests was of the order of 0.01 turn per inch in a single observation. The error in reading the diameter of twisted bundles was of the order of 0.007 cm. in a single observation; the magnification of the projected image was 15 diameters, and we could measure the diameter of the image to the nearest millimetre.

As regards torsional rigidity, our remarks were carefully worded. We attribute the small differences to the effects of damping and, possibly, of permanent deformation, which would act differently according to whether *S*- or *Z*-twist was initially applied. Only small differences would be expected, and only small differences are suggested by our results.

Regarding the remarks in the last paragraph of Sen and De's letter, we are aware that our results are a measure of the torque required to produce a twist of one complete turn in unit length of a bundle of fibre-strands.

Our provisional view is that the thick secondary walls are mainly responsible for the effects observed, and that the fibrils of the secondary walls have a small *Z*-twist. The drying and wetting twists of many vegetable fibres are very lively, and it seems likely that the direction of yarn twist has some practical significance. The 'bees'-knees' that form in wet-spun flax yarns after drying are an example. Moreover, a difference of as much as five per cent in the strengths of jute yarns with *S*- and *Z*-twist is quite a possibility.

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<sup>1</sup> *Nature*, **164**, 670 (1949).

<sup>2</sup> *Nature*, **163**, 19 (1949).

### A Recent Deposit of Bird Bones in the Falkland Islands

WEST POINT ISLAND lies off the north-west corner of west Falkland and only about a quarter of a mile off-shore. It has been occupied as a small sheep farm for many years, and like everyone else in the Falklands the people of the Island burn peat. The peat-bog, that is the place whence the peat is brought, is situated near the upper end of a valley, roughly one and a half miles long and half a mile wide, which runs up from sea-level at the north to the top of a steep cliff at the south end. The area covered by the peat bog lies at an altitude of approximately 600 ft. It has been worked over by the removal of successive layers of one yard in thickness; in some places three such layers have been extracted, and beneath the lowest, that is, at a depth of nine feet from the original surface, a bone deposit was discovered some fifteen or twenty years ago.

The deposit has been examined at different times by both of us during rather short visits to the Island; but there has been no opportunity to ascertain the horizontal extent of it by excavation. Vertically it is only a few inches thick. One of us (J. E. H.) considered that the bones accumulated in the matrix of the deposit, which is of a clayey nature, prior to the formation of the peat at this site; the other (G. H.-S.) considers that the stratum of clay lies between the peat now being worked and an older peat underneath.

The bones are very plentiful; indeed, in the appropriate layer one cannot insert a spade without cutting through them. They are exclusively avian and include penguin, snipe, finch (*Melanodera*?) and a carrion hawk—probably *Ibycter australis*. All these birds are still quite common except *Ibycter*, and it was plentiful enough a hundred years ago. The bones themselves are fragile.

The depth at which the bones occur precludes any human agency, and we consider that the peat covers the site of a pond which has now vanished. One may believe that the fresh water proved attractive to the birds, and it seems not unlikely that the mud may have been of such a texture as to entrap the unwary.

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Falkland Islands Dependencies.