

base of the branch, though in this case growing upwards, in consequence of the position of the branch being reversed.

No. 4 *b* is part of the stem of a holly-tree, which stood in its natural position when operated on. It shows, also, that the principal portions of newly formed wood have grown chiefly on the upper lips of the spiral denudations.

No. 4 *c* is part of a branch which grew as nearly as possible in a horizontal position from the axis of the tree. It was denuded of bark over the upper half of its circumference, the bark on the lower half next the earth being still attached. The cells forming woody tissues in this instance have been produced for the most part in horizontal series, having little preponderance to the part nearest the base of the branch, which favours the correctness of M. Trecul's views, as stated above.

I have now, in this and a former paper, laid before the Academy the results, such as they are, of twenty years' experiments on this subject, which may appear a long period; but we cannot force the operations of nature, and must, therefore, be content to wait assiduously on her if we desire to elicit trustworthy data, such as can be useful to future students following in the same path of investigations.

SIR WILLIAM ROWAN HAMILTON, LL.D., M.R.I.A., read the following paragraphs in continuation of his paper—

ON ANHARMONIC CO-ORDINATES.

11. To myself it naturally appears as a *fourth advantage* of the anharmonic method, that it is found to harmonize well with the method of *quaternions*, and was in fact *suggested* thereby; though not without suggestions from other methods previously known.

12. Thus, if a, β, γ denote three given vectors, OA, OB, OC , from a given origin O , while a, b, c are three given and constant scalars, but t, u, v are three variable scalars, subject to the condition that their sum is zero,

$$t + a + v = 0;$$

then the equation,

$$OP = \rho = \frac{t^r aa + u^r b\beta + v^r c\gamma}{t^r a + u^r b + v^r c},$$

in which r is any positive and whole exponent, expresses generally that the *locus* of the point P is a *curve of the r^{th} order*, in the given plane of ABC ; which curve has the property, that it is met in r coincident points, by any one of the three sides of the given triangle ABC . But the coefficients $t^r u^r v^r$ are examples here of what have been above called anharmonic co-ordinates.

CAPTAIN BLAKELY read the following :—

CAPTAIN BLAKELY'S REMARKS IN CONTINUATION OF HIS REPLY TO MR. MALLETT AT THE MEETING OF THE ROYAL IRISH ACADEMY ON MAY 14, 1860.

MR. CHAIRMAN,—At the last meeting of the Academy a question was raised by Mr. Mallet, between himself, Dr. Hart, and me, as to which