and writing

$$u = u_2 + u_3x + u_4x^2 + \dots$$

we find

$$u = 1 + (2x + 3x^2)u + (x^2 + x^3)u' ;$$

that is

$$(-1 + 2x + 3x^2)u + (x^2 + x^3)u' = -1 ;$$

or, what is the same thing,

$$u' + \left(\frac{3}{x} - \frac{1}{x^2}\right)u = -\frac{1}{x^2(1+x)},$$

whence

$$u = x^{-3}e^{-\frac{1}{x}}\int \frac{-x}{1+x}e^{\frac{1}{x}}dx,$$

but the calculation is most easily performed by means of the foregoing equation of differences, itself obtained from the differential equation written in the foregoing form,

$$(-1 + 2x + 3x^2)u + (x^2 + x^3)u' = -1 .$$

6. On Amphicheiral Forms and their Relations.

By Professor Tait.

(*Abstract.*)

If a cord be knotted, any number of times, according to the pattern below

it is obviously *perverted* by simple *inversion*. Hence, when the free ends are joined it is an amphicheiral knot. Its simplest form is that of 4-fold knottiness. All its forms have knottiness expressible as $4n$.

The following pattern gives amphicheiral knots of knottiness $2 + 6n$.

And on the following pattern may be formed amphicheiral knots of all the orders included in $6n$ and $4 + 6n$.

Among them these forms contain all the even numbers, so that *there is at least one amphicheiral form of every even order.*

Many more complex forms are given in the paper, several of which are closely connected with knitting, &c.

In one of my former papers I gave examples of type-symbol which individually represent two perfectly different knots.

I now give examples of the same knot represented by type-symbols which have neither right nor left-handed parts in common. One of the most remarkable of these is

which can be analysed (but not separated) into a combination of the two forms of the 4-fold amphicheiral knot.

The following Gentlemen were elected Fellows of the Society :—

WILLIAM JOLLY, H.M. Inspector of Schools, Inverness.

ROB. MILNER MORRISON, 21 Manor Place.

JOHN GIBSON, Ph.D., 12 Greenhill Gardens.

CHAS. E. UNDERHILL, B.A., M.B., 8 Coates Crescent.

CHARLES EDWARD WILSON, M.A., LL.D., 19 Palmerston Place.

GEORGE CARR ROBINSON, East Preston Street.