Mr MACKAY drew attention to the connection between the theorem of the so-called Simson line, and another theorem rediscovered* by Professor Wallace about 1797, stated in Leybourn's *Mathematical Repository*, old series, vol. I., p. 309, and proved in vol. II., p. 54. The theorem is—If three straight lines touch a parabola, a circle described through their intersections shall pass through the focus of the parabola. Professor Wallace, in his proof, draws perpendiculars from the focus on the three tangents, and shows that the feet of the perpendiculars lie on the tangent at the vertex; in other words, that the tangent at the vertex is the so-called Simson line, which corresponds to the focus.

Mnemonics for π, $\frac{1}{\pi}$, e.

By J. S. MACKAY, M.A.

The following mnemonics, with one exception, consist of verses or sentences such that if the number of the letters in each word be written down in the order in which the words occur, the desired value will be obtained.

π.

The value of π to 30 decimal places is got from the quatrain (of whose age and authorship I am ignorant):—

Que j'aime à faire apprendre un nombre utile aux sages!
Immortel Archimède, artiste ingénieur,
Qui de ton jugement peut priser la valeur?
Pour moi ton problème eut de pareils avantages.

In these alexandrine verses the metre and the rhyme are good enough, but the sense is not very brilliant.

Another version consists of only three lines:—

Que j'aime à faire apprendre un nombre utile aux sages!
Glorieux Archimède, artiste ingénieux,
Toi de qui Syracuse aime encore la mémoire.

---

* It was first given in Sectio I., § 15 of I. H. Lambert's *Insigniores Orbitae Cometarum Proprietates*, Augustae Vindelicorum, 1761.

Here the rhyme is at fault, and the last word contains one letter too many. Moreover, the statement about Syracuse cherishing the memory of Archimedes must be understood to be ironical, if one recollects Cicero's account (in the fifth book of his *Tusculan Questions*) of his visit to Archimedes' tomb.

An English couplet, also of unknown authorship, gives the first 13 decimal places :—

How I wish I could recollect of circle round
The exact relation Archimede unwound!

The "relation Archimede unwound," it may be noted in passing, was that the circumference of a circle was less than $3\frac{10}{70}$ and greater than $3\frac{10}{71}$ of the diameter. (See his *Measurement of the Circle*, Proposition 3.)

$$\frac{1}{\pi}.$$

The only French mnemonic for this value which I have seen is a rather forced one, but it may on that account be all the more easily remembered. It is—

Les 3 *journées de* 1830 *ont précédé* 89 *à l'envers,*
·3 1830 98

89, that is 1789 (as we say the '45 for 1745), and 1830 are the dates of the first and second French revolutions, and three days sufficed to carry out the second one.

The question—

Can I discover the reciprocal?

gives the value correct to six decimal places, ·318310.

e.

This value to 10 decimal places is obtained from

Tu aideras à rappeler ta quantité à beaucoup de docteurs amis ;

and to 12 decimal places from

We proffer a mnemonic to remember a standard or neperean base value instantly.

A member gave the following for the values of the roots of the quadratic equation $ax^2 + bx + c = 0$:

From square of b take $4ac$;
Square root extract, and b subtract;
Divide by $2a$; *you've x alway.*

Another mnemonic for the same values, due to Mr N. D. Beatson Bell, is

When you have written $-b$,
The double sign put down;
Then $b^2 - 4ac$
With square-root mark you crown;
Beneath it all a line you trace,
Beneath which line $2a$ *you place.*

The value of the co-efficient of refraction of light in two important cases is got from the following:—

When rays do pass from air to glass,
The value of μ *is three by two;*
But when they pass from air to water,
The value of μ *is one by three-quarter(s)*!

Eighth Meeting, June 12th, 1885.

THOMAS MUIR, Esq., LL.D., F.R.S.E., in the Chair.

Summation of certain Series.

By Professor TAIT.

[*Abstract.**]

The attempt to enumerate the possible distinct forms of knots of any order, though unsuccessful as yet, has led me to a number of curious results, some of which may perhaps be new. The general character of the methods employed will be obvious from an inspection of a few simple cases, and any one who has some practice in algebra may extend the results indefinitely.

* This Abstract is part of the paper read in June, entitled "On the detection of amphicheiral knots, with special reference to the mathematical processes involved." I have unfortunately mislaid the MS.—P.G.T.